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Undergraduate Catalog 1986-87

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OAKLAND UNIVERSITY

Undergraduate Catalog 1986-87

OAKLAND UNIVERSITY
Rochester, Michigan

Undergraduate Catalog
1986-87

June 1986 Volume XXVI

Published by Oakland University, Rochester, Michigan

All data in this catalog reflect information as it was available at the publication date. Oakland University reserves the right to revise all announcements contained in this publication at its discretion and to make reasonable changes in requirements to improve or upgrade academic and non-academic programs.

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370-3166 (graduate)
Loans and student employment: 370-3370 (Financial Aid Office)
Scholarships and grants: 370-3360 (new students)
370-3370 (returning students)
370-3166 (graduate students)
Student affairs: 370-3352 (Student Life Office)
Student housing: 370-3570 (Residence Halls Office)

Equality of Opportunity

Oakland University, as an equal opportunity and affirmative action institution, is co
ted to compliance with federal and state laws prohibiting discrimination, including Ti
of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972 and S
504 of the Rehabilitation Act of 1973. It is the policy of Oakland University that there
be no discrimination on the basis of race, sex, color, religion, national origin or ancestr
marital status, handicap, veteran status or other prohibited factors in employment, admi
educational programs or activities. Inquiries or complaints should be addressed to:

Director
Office of Equal Opportunity
148 North Foundation Hall
Oakland University
Rochester, MI 48063

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Academic Calendar

Fall 1986

Registration	Tue, Wed, Thu	Aug 26, 27, 28
Classes begin	7:30 a.m., Tue	Sep 2
Fall commencement	Sun	Sep 14
Thanksgiving recess begins	10 p.m., Wed	Nov 26
Classes resume	7:30 a.m., Mon	Dec 1
Classes end	5:30 p.m., Mon	Dec 8
Exams begin	6 p.m., Mon	Dec 8
Exams end	Noon, Sat	Dec 13

Winter 1987

Registration	Mon	Jan 5
Classes begin	7:30 a.m., Tue	Jan 6
Winter recess begins	10 p.m., Sat	Feb 21
Classes resume	7:30 a.m., Mon	Mar 2
Classes end	5:30 p.m., Mon	Apr 20
Exams begin	6 p.m., Mon	Apr 20
Exams end	Noon, Sat	Apr 25

Spring 1987

Registration	Mon	May 4
Classes begin	6 p.m., Mon	May 4
Memorial Day holiday	Mon	May 25
Spring commencement	Sun	June 7
Classes end	10 p.m., Mon	June 22
Final exams	Wed, Thu	June 24, 25

Summer 1987

Registration	Mon	June 29
Classes begin	7:30 a.m., Tue	June 30
Independence Day recess	10 p.m., Thu	July 2
Classes resume	7:30 a.m., Mon	July 6
Classes end	10 p.m., Tue	Aug 18
Final exams	Thu, Fri	Aug 20, 21

INTRODUCTION

Oakland University is a comprehensive, state-assisted institution of approximately 12,500 students that offers a diverse set of academic programs, from baccalaureate to doctoral levels. In all its activities, Oakland University strives to exemplify educational leadership. Anchored by a strong liberal arts program, the university is organized into the College of Arts and Sciences, schools of Business Administration, Engineering and Computer Science, Health Sciences, Human and Educational Services, and Nursing, the Division of Continuing Education and the Office of Graduate Study. All academic programs of the university are accredited by the North Central Association of Colleges and Schools.

Selective in its admission standards and striving to ensure equal opportunity to all who can benefit from its offerings, Oakland University seeks both traditional and non-traditional students. While serving principally Michigan residents, it welcomes qualified applicants from other states and countries. A special effort is made to locate and admit disadvantaged students with strong potential for academic success and to provide the support conducive to the realization of that potential. The Honors College offers an unusually challenging educational experience for highly motivated students.

The university's faculty, which now numbers more than 400, has a distinguished record of research and scholarship. Faculty members have won some of the most prestigious awards made by government agencies and private foundations. External funding support for research and developmental projects now totals more than $4.2 million. Studies in biological and physical sciences and robotics attract national and international attention to Oakland University, and its highly recognized Eye Research Institute is the only eye research center in the United States not associated with a major medical school. This institution takes pride in the many scholarly books and articles written by its faculty and in their contributions to pedagogy and the creative arts. Wherever possible, students are involved in research projects; the results of research and scholarship are integrated into related courses of instruction.

The Kresge and Performing Arts libraries serve as primary scholarly resources for students and faculty. They are supported in this function by a network of computing facilities: two mainframe computers, several minicomputers and hundreds of microcomputers for student and faculty use.

Complementing its academic programs, Oakland University collaborates actively with business and industry to foster economic development in Southeastern Michigan and provides major public service offerings with emphasis on the professional performing arts. Meadow Brook Theatre, a professional theatre, is located in Wilson Hall. Meadow Brook Music Festival is the summer home of the Detroit Symphony Orchestra. Meadow Brook Hall, former home of the university's benefactors, now serves as a conference and cultural center; Meadow Brook Art Gallery houses the university's permanent collection of African art and presents a variety of special exhibits annually.

Oakland University was founded in 1957 when the late Alfred G. and Matilda R. Wilson donated their 1,500-acre estate and $2 million to Michigan State University to begin a new college in Oakland County. Named Michigan State University-Oakland, the new campus enrolled its first students in 1959. In 1963, its name was changed to Oakland University, and in 1970 the State Legislature recognized the maturity and stature of the university by granting it autonomy. The governor appointed Oakland University's first board of trustees in 1970.

Located between the cities of Pontiac and Rochester, Oakland University is easily accessible to millions of Detroit metropolitan area residents. The natural beauty of the campus, much of it still wooded and undeveloped, is enhanced by comprehensive recreational facilities and modern buildings that house the university's many academic and public service programs as well as some 1,700 residential students. Adjacent to the campus is the Oakland Technology Park, a research park where private-sector companies work hand-in-hand with higher education.

Family Educational Rights and Privacy Act

The federal Family Educational Rights and Privacy Act of 1974 pertains to confidential student educational records. This legislation allows students the right to view upon request their own confidential educational records and restricts the use of these records by others.

Notification of Oakland University's compliance with this legislation may be found in the "Oakland University Policy Statement on the Family Educational Rights and Privacy Act" (available at the Office of the Dean of Students), in the *Schedule of Classes* and in the undergraduate and graduate catalogs. The assistant dean of students is the university compliance officer for the Family Educational Rights and Privacy Act. Any questions, grievances, complaints or other related problems may be addressed to the compliance officer and/or filed with the U.S. Department of Health, Education and Welfare.

Copies of the Family Educational Rights and Privacy Act may be obtained from:

Assistant Dean of Students
49 Oakland Center
Oakland University
Rochester, MI 48063

GENERAL INFORMATION

Admission

Admission to freshman standing

Candidates for admission to undergraduate degree programs should have completed high school-level college preparatory work or otherwise demonstrated sufficient academic preparation to begin college work. Normally, high school courses should include as a minimum four years of English, three years of mathematics, three years of natural sciences, three years of social sciences and two years of a foreign language. Students planning majors in the sciences, mathematics, engineering or management are expected to present at least four years of preparation in math, including algebra, geometry and trigonometry. Consideration for admission is based upon an applicant's total background, including high school academic achievement, recommendations, educational goals and potential for success at Oakland University. Students applying as freshmen must submit scores from the American College Test (ACT).

Applications for undergraduate admission are available from high school counselors or from the Office of Admissions. They should be submitted as early in the senior year as possible.

Admission of students while still in high school

Specially qualified high school students may be permitted to enroll in classes on a part-time non-matriculated basis. Students who wish to pursue course work at Oakland University that is not available at their high school must present a letter of endorsement signed by their high school principal and counselor. An application for undergraduate admission and a copy of the student's current transcript must accompany the principal's endorsement. Admission as a high school student is valid for one semester or session only. A student wishing to take subsequent courses must receive the principal's endorsement for each term he/she plans to enroll.

Admission of transfer students

Transfer students may enter Oakland University at four different times: fall semester, winter semester, spring session or summer session. Students are encouraged to submit their applications well before the beginning of the term in which they wish to enroll. Applicants in good academic standing at their previous college or university who have completed 40 or more semester hours of transferable credit with a minimum 2.50 cumulative grade point average may be considered for admission. Selected programs and majors may require a substantially higher grade point average for admission. Applicants who are in good academic standing at their previous college or university who have not completed 40 or more semester credits may be admitted if one or more of the following indicate likely success at Oakland University: high school work, letters of recommendation, test scores or an interview with an Oakland admissions adviser.

When a student enters Oakland University, transfer credits will be granted to courses taken at other regionally accredited post-secondary schools, provided such credits are applicable to the student's initial program at the university and were completed with at least a "C" (or equivalent) grade. Once transfer credits have been granted at Oakland University, a subsequent change of program and re-evaluation of transfer credits may result in the loss of certain transfer credits.

Courses necessary to complete degree requirements are offered by the university, and it is anticipated that students who have been admitted will complete program requirements at Oakland University. Once an undergraduate student has successfully completed 62 semester hours at any accredited institution(s), including Oakland University, no additional credits or courses may be transferred from a two-year school to the university to satisfy any degree requirement. (This includes satisfying a prerequisite for a required course.)

Individual academic units may impose particular limitations on transfer equivalency. Students are advised to read appropriate sections of this catalog to learn the policies of schools in which they may be degree candidates.

Special note to transfer students from community colleges

Oakland University's baccalaureate programs are designed to accommodate students from community colleges. Early application is recommended so that candidates can take advantage of the services extended to community college transfer students. Transfer students from community colleges are eligible for the same financial aid programs and other services available to students who enter Oakland University directly from high school.

Oakland University participates in the Michigan Association of Collegiate Registrars and Admissions Officers (MACRAO) Articulation Agreement. Graduates of participating Michigan public community colleges with Associate of Arts or Associate of Science degrees whose transcripts bear the "MACRAO Agreement Satisfied" stamp are considered to have met most of the university's general education requirements. Prospective transfer students should consult their community college counselor or an Oakland admissions adviser for further information.

Admission of students whose formal education has been interrupted

Admission of individuals whose formal education has been interrupted for three or more years, and who would not normally meet other admission criteria, may be based on one or more of the following: sustained employment record, recommendations from employers, educators and other professionals and standardized test results. An interview with an Oakland University admissions adviser is required for such applicants to be considered for admission.

Admission for students who are not American citizens

A foreign student should write to the director of admissions at least one year before he or she wishes to be admitted. The candidate will be sent instructions and an application form to be completed and returned at once. When the application is approved, the candidate will receive a certificate of admission and form I-20A-B. These are to be used to apply for the appropriate visa. Prior to the student's official registration, proof of adequate medical insurance plus a signed authorization for emergency medical treatment must be on file in the university's Graham Health Center.

Students who are not citizens or permanent residents of the United States and are transferring from other institutions also must obtain an I-20A-B from Oakland University. Students requesting such transfers should consult with the foreign student adviser at their previous school and with the Department of Special Advising about required transfer and immigration procedures.

Admission to guest status

Students enrolled at accredited Michigan colleges and universities may apply for guest admission by filing the Michigan Uniform Undergraduate Guest Application form, which is available from the registrar's office at their home institution. This form should be submitted to the Office of Admissions well before the beginning of each semester or session the student plans to attend as a guest. Students attending Michigan colleges or universities are not required to submit transcripts.

Students attending accredited colleges and universities outside of Michigan may apply for guest admission by filing Oakland University's guest application form well before the beginning of each semester or session that they plan to attend. These applications may be obtained from the Office of Admissions and must be accompanied by a transcript of grades from the student's home institution.

Admission to post-baccalaureate status

Post-baccalaureate (PB) status indicates that the student holds a bachelor's or higher degree and wishes to enter college for the purpose of pursuing undergraduate classes. Under PB status, admission is as a special non-degree candidate and previous academic work will not be evaluated by Oakland University's registrar. Tuition and fees for PB status will be assessed at undergraduate upper division rates.

Admission to second degree status

Second degree status indicates that the student currently holds a bachelor's degree but wishes to earn a second undergraduate degree with a different major. Tuition and fees for second degree status will be assessed at undergraduate upper division rates (see "Additional undergraduate degrees and majors" on page 29).

Reapplication and readmission

Failure to complete a credentials file prior to registration or failure to enroll once admitted invalidates an application for admission. Reactivation of such files must be requested in writing. This notification must be received at least 30 days prior to the first day of registration for the semester immediately following the term of original application. An additional application fee is not required. A new application and fee are required of students who delay reapplication for more than one term.

Readmission applies to students who previously enrolled at Oakland University and whose attendance was interrupted (see "Policies and procedures" on page 36).

Advanced placement

Credit toward graduation is granted to students who present evidence of satisfactory completion in high school of examinations through the Advanced Placement Program of the College Entrance Examination Board. Oakland University grants credit for grades "5" or "4" in advanced placement examinations. If a grade of "3" is achieved, the examination will be subject to review by the appropriate department, which may grant advanced placement with or without credit toward graduation.

Credit toward graduation (CLEP)

Credit toward graduation can be granted to students who demonstrate competence in various areas tested in the College-level Examination Program (CLEP) administered by the College Entrance Examination Board of Princeton, New Jersey. (Students who wish to use CLEP tests as admission credentials should have their scores forwarded to Oakland University's director of admissions.)

CLEP examinations are of two types, general and subject. General examinations are offered in English composition, history, humanities, mathematics, natural sciences and social sciences. Oakland University grants 6 credits for each examination passed with a score of at least 600, no subscore below 55 and an average of subscores of at least 60, provided that the student has not accumulated 32 credits at the time of the examination and has not previously received college credit in the field of the examination. Credit for CLEP subject examinations is granted according to the following stipulations:

1. Non-transfer students must have accumulated fewer than 64 credits at the time of the examination; transfer students must have earned fewer than 32 Oakland University credits.
2. Examinations must be passed with scores of 60 or better, and each subscore must be at least 60.
3. Students must not have previously taken more advanced work in the field of the examination.
4. Either three or six semester hours of credit may be granted, at the discretion of the academic unit responsible for the subject.

Financial Aid and Scholarships

Oakland University offers two programs of financial assistance to students: scholarships based on achievement and financial aid based on need. Scholarship opportunities that are based on achievement are not contingent upon financial need, and it is possible for students to qualify for assistance through both programs.

Financial aid

The purpose of the financial aid program at Oakland University is to help pay the educational costs of qualified students who do not have sufficient funds to attend school. The program is operated under the assumption that the primary responsibility for financing a college education rests with the student and the student's family. Aid offered by the university supplements, but does not replace, funds that are expected to be provided by the student and the family.

In order to assist eligible students in financing their education, the university participates in or administers the following programs: the Pell Grant program, the Supplemental Education Opportunity Grant program, the National Direct Student Loan program, the College Work-Study program, The Oakland University Student Employment program, the Oakland University Grant program, the State of Michigan Competitive Scholarship program, the Guaranteed Student Loan program and the State of Michigan Direct Student Loan program.

Financial aid application procedures

A Financial Aid Form (FAF) should be completed and sent to the College Scholarship Service for processing as soon as possible after February 1. The appropriate FAF item that will result in a Pell Grant Student Aid Report (SAR) being produced must be completed. When processing is completed, the SAR will be mailed directly to the applicant. Upon receipt, the SAR should be immediately provided to the Financial Aid Office. Applicants must also file with the Financial Aid Office an Oakland University Application for Financial Aid and a copy of their family's most recent Federal Income Tax Form 1040. Additional details concerning the financial aid application process are listed on the Oakland University Application for Financial Aid.

Short-term loans

Short-term no-interest loans of up to $100 are available for personal and emergency needs, but not for payment of regular university fees for tuition, room and board, or any other anticipated expense. These loans are made possible by gifts to Oakland University from the following individuals and groups:

Century Brick Loan Fund
Civitan Loan Fund
H. H. Corson Loan Fund
Kenneth B. Covert Jr. Memorial Loan Fund
Pat Dandurand Memorial Loan Fund
Greater Pontiac Centennial Student Loan Fund
W. Everett Grinnell Loan Fund
C. Allen Harlan Loan Fund
George N. Higgins Loan Fund
Insurance Women of Detroit, Inc., Loan Fund
Lathrup Village Woman's Club Fund
John A. MacDonald Loan Fund
James Mangrum Loan Fund
Kenneth A. Meade Memorial Loan Fund
Oakland County Engineering Society Loan Fund
Oakland University Alumni Loan Fund

Eric Pelzner Memorial Loan Fund
Piety Hill Chapter of the Daughters of the American Revolution of Birmingham Loan Fund
Mark Platt Memorial Loan Fund
Pontiac Kiwanis Club Loan Fund
David R. Robson Memorial Loan Fund
Li Russ Student Loan Fund
Joan Selby Memorial Loan Fund
Paul Solonika Loan Fund
William Spickler Memorial Loan Fund
Student Activities Coordinating Council Loan Fund
Henry Tiedemen Loan Fund
Warren Tope Memorial Loan Fund
Michael Werenski Memorial Loan Fund
Walter K. Willman Loan Fund
Women's Literary Club of Pontiac Loan Fund

Scholarships

The wide range of scholarship opportunities at Oakland University indicates the scope of the university's commitment to academic excellence, student leadership and achievement. Scholarships are awarded on the basis of accomplishment and are not contingent upon financial need. Most awards are made in early spring for the next academic year and are only available to those students entering in the fall semester.

Applicants for admission to Oakland University who wish to be considered for a scholarship should file a scholarship application with the Office of Admissions prior to April 1.

Many scholarships are renewable if the recipient meets the criteria outlined at the time the scholarship was originally awarded. Renewal is not automatic, however, as scholarship recipients must apply to the Financial Aid Office for renewal of their awards prior to March 1.

Following is a list of scholarships awarded by Oakland University.

Alumni Memorial Scholarship — recognizes high academic achievement. Applicants should have a minimum 3.70 high school grade point average (GPA) and a composite score of 28 or above on the ACT examination. A written essay and personal interview are also required. Scholarships are $1,000 per academic year and may be renewed to a maximum of eight semesters as long as a 3.25 GPA is maintained.

American Association of University Women (Farmington Branch) Scholarships — awarded to mature students with family responsibilities whose undergraduate education has been interrupted.

Athletic Scholarships — awarded to men and women athletes with ability in one of the intercollegiate sports offered at Oakland. Scholarship amounts vary and are renewable to a maximum of eight semesters.

Boys' Club of Royal Oak Scholarship — awarded to a student recommended by the director of the Boys' Club of Royal Oak. The scholarship is $800 per academic year and is renewable to a maximum of eight semesters.

Carmine Rocco Linsalata Memorial Scholarships — two awards of $300-$500 to students who are majoring in or intend to major in a foreign language. One scholarship is granted to an entering student, the other to an Oakland University student with a minimum of 28 credits. Scholarship recipients are selected by the faculty of the Department of Modern Languages and Literatures. The scholarships are a memorial to Carmine Rocco Linsalata, professor of Spanish and Italian at Oakland from 1966 to 1980.

Community College Scholarships — recognize academic achievement of students transferring from accredited community colleges or junior colleges in Michigan. Applicants should have a minimum GPA of 3.50 for all college credit earned and at least 55 semester hours of transferable work. Scholarships are $1,500 per academic year and may be renewed for an additional year (fall and winter semesters). Students must maintain a 3.00 GPA.

Edith Harris Memorial Scholarship — awarded to mature students with family responsibilities whose undergraduate education has been interrupted. Applicants must have completed 28 credits in the academic year preceding the award. Recipients must enroll for at least 12 credits each semester in which the award is granted. The scholarship is partial tuition for an academic year.

Engineering Scholarships — awarded to entering engineering students and based on high school grades and scores on a standardized test. Scholarships are $600 per academic year and may be renewed to a total of eight semesters as long as the recipient maintains a 3.00 GPA and continues to major in engineering.

History Department Scholarships — two annual scholarships awarded to qualified students majoring in history. The George T. Matthews Scholarship in History provides one-half tuition for two semesters. The Oakland University Foundation Matthews Scholarship in History carries a stipend of $1,250.

Isaac Jones Memorial Scholarship — awarded to an academically promising student from Pontiac. The scholarship is $800 per academic year and may be renewed to a total of eight semesters.

James Morrison Thompson Chemistry Scholarship — awarded to eligible chemistry majors for one year. Students selected must have completed their sophomore year with a minimum 3.00 GPA overall and a minimum 3.50 GPA in chemistry and mathematics courses.

Kurtis Kendall Memorial Scholarship — recognizes achievement in the sciences for men and women entering Oakland University with goals of research in medical areas. Applicants should have a minimum 3.40 high school GPA. Scholarships are $1,500 per academic year and may be renewed up to a total of eight semesters as long as the recipient maintains a 3.25 GPA and continues to major in the sciences.

Mary Fogarty Anibal and Eleanor Anibal Burgum Memorial Scholarship — recognizes superior academic performance of entering high school students. Applicants must have a minimum 3.50 high school GPA. Scholarships are $2,000 per academic year and may be renewed to a total of eight semesters as long as the recipient maintains a cumulative 3.25 GPA and resides in the residence halls.

Mr. and Mrs. Roger Kyes Scholarship — awarded for one year to an undergraduate student majoring in English who has demonstrated academic excellence. The recipient is selected by the Department of English's faculty.

Music Scholarships — awarded to freshmen or community college transfer students with exceptional music performance ability. Applicants must audition with the Department of Music, Theatre and Dance. Scholarships are $250 or $500 per academic year and may be renewed to a total of eight semesters for students who enter as freshmen or four semesters for students who enter as transfers. Additional awards are available to students selected as members of performing ensembles. Renewal is upon recommendation of the Department of Music.

Oakland County Medical Society Women's Auxiliary Scholarship — awarded on the basis of merit to three eligible nursing students. Scholarship recipients are selected by the School of Nursing's faculty.

Oakland University Competitive Scholarships — awarded to freshmen based on high school grades and scores on the Oakland University Competitive Scholarship Exam. Scholarships are up to $1,500 per academic year and may be renewed to a total of eight semesters as long as a 3.00 GPA is maintained.

Oakland University Foundation Scholarships — awarded each year to two high school students of exceptional ability and achievement to permit their residence at the university while pursuing full-time study. Applicants must have a minimum 3.50 high school GPA. Scholarships are $2,500 per academic year to a total of eight semesters. Recipients must complete 30 credits each academic year with a cumulative GPA of at least 3.25 to be eligible for renewal.

Student Life Scholarships — awarded to students who have shown leadership potential, either in high school or community college. Students must have a minimum 3.00 GPA and be active in cocurricular or extracurricular activities. Scholarships are for partial room and board in the amount of $1,000 per academic year and may be renewed to a total of eight semesters for students who enter as freshmen or four semesters for students who enter as transfers.

United Auto Workers Region IB Golf Classic Scholarships — One scholarship is awarded in the amount of $1,000 to an eligible student who shows promise of fulfilling a socially worthwhile career and contributing to the advancement of the quality of life for people in our society. A second scholarship is awarded in the amount of $2,000 to an eligible student who is the son or daughter of a UAW member, or to a UAW member, when this individual shows promise of fulfilling a socially worthwhile career and contributing to the advancement of the quality of life for people in our society. Recipients are chosen by the Scholarship Committee.

Upperclass Achievement Scholarship — awarded to continuing Oakland University students based on scholastic performance. Applicants must have a 3.50 GPA at the end of the previous winter semester and have earned at least 32 credits at the university during the previous academic year. Recipients must be enrolled for 16 credits in both the fall and winter semesters. Scholarships are $250 per academic year.

William Morris Scholarship — awarded to upperclass undergraduate students in recognition of academic excellence and effective citizenship. Recipients are recommended by the faculty and selected by the William Morris Scholarship Committee. The scholarship is for one year.

All scholarships listed as renewable are contingent upon recipients advancing a grade level toward graduation each year. Funds for Oakland University's scholarship programs are derived from the general budget, gifts from individuals, groups and corporations, and the fund-raising efforts of the Oakland University Scholarship Committee of Macomb County. The special scholarship funds are:

Mr. and Mrs. Benjamin Anibal Scholarship Fund
Marshall Page Atkinson Memorial Scholarship Fund
Campbell-Ewald Scholarship Fund
Raymond Cullen Jr. Memorial Scholarship Fund
George H. Gardner Scholarship Fund
C. Allen Harlan Scholarship Fund
Herbert M. Heidenreich Scholarship Fund
Ormond E. Hunt Scholarship Fund
Harry A. MacDonald Memorial Scholarship Fund
Mildred Byars Matthews Memorial Scholarship Fund
Oakland University Women's Club Scholarship Fund
Village Women's Club of Birmingham Scholarship Fund
Ruth E. Wagner Scholarship Fund
A. Glen Wilson Scholarship Fund
Matilda R. Wilson Memorial Honor Scholarship Fund
Thomas E. Wilson Scholarship Fund

Tuition and Fees

The Oakland University Board of Trustees reserves the right to change any and all fees and rates of charge when circumstances make such a change necessary. Tuition and fees quoted in this catalog are from the 1985-86 academic year. The *Schedule of Classes* for each semester or session carries a listing of current charges.

All fees are assessed at registration and are payable in U.S. dollars. Students are urged to use checks or money orders made payable to Oakland University rather than cash for payment. If checks or money orders exceed the required payment, the balance will be returned. Non-payment of fees may result in cancellation of registration. Checks returned by the bank also will place a student in a non-payment status.

Tuition and fees for upper-division undergraduate students also apply for post-baccalaureate students.

Course fees for on-campus programs

All course fees and special fees must be paid in full before registration will be considered final.

Michigan residents who register as lower-division undergraduates will be assessed $45.50 per credit. Upper-division undergraduates will be assessed $52.50 per credit. Graduate students will be assessed $82 per credit. All students who have not maintained Michigan residence for 12 consecutive months immediately prior to enrollment will be assessed tuition at out-of-state rates: $129 per credit for lower-division undergraduate students, $140 per credit for upper-division undergraduate students and $173 per credit for graduate students.

Course fees for off-campus extension programs

Students who register for off-campus extension courses are assessed at the following rates: $52 per credit for lower-division undergraduate students, $58 per credit for upper-division undergraduate students and $87 per credit for graduate students.

General service fees

Undergraduate students who register for 10 or more on-campus credits will be charged an additional $92.75 ($40 enrollment fee, $25 Oakland Center fee, $9.75 activity fee, $6 health service fee, $6 athletic fee and $6 transportation fee).

Undergraduate students who register for fewer than 10 on-campus credits will be charged an additional $70.25 ($40 enrollment fee, $12.50 Oakland Center fee, $7.25 activity fee, $3.50 health service fee, $4 athletic fee and $3 transportation fee).

Graduate students who register for 8 or more on-campus credits will be charged an additional $82.50 ($40 enrollment fee, $25 Oakland Center fee, $2.50 activity fee, $6 health service fee, $3 athletic fee and $6 transportation fee).

Graduate students who register for 4-7 on-campus credits will be charged an additional $63 ($40 enrollment fee, $12.50 Oakland Center fee, $2 activity fee, $3.50 health service fee, $2 athletic fee and $3 transportation fee).

Graduate students who register for 1-3 on-campus credits will be charged an additional $61 ($40 enrollment fee, $12.50 Oakland Center fee, $2 activity fee, $3.50 health service fee and $3 transportation fee).

Students who register for off-campus courses will be assessed a $40 non-refundable enrollment fee. Special fees also are charged for applied music instruction and the following special courses:

ED 455,	$35
ED 597,	$50
Applied music	
Individual instruction,	$85/2 credits
Group instruction,	$25

Course competency by examination fee

Michigan residents who register as undergraduates for course competency by examination will be assessed at the following rates: $12 per credit for lower-division undergraduate students; $14 per credit for upper-division undergraduate students; and $22 per credit for graduate students. Students who are not Michigan residents will be assessed $37 per credit for course competency registrations.

Late registration fee

Students registering or paying initial fees after classes officially begin and up to the end of the late registration period must pay an additional non-refundable late registration fee of $25. Students who take courses exclusively within a program scheduled to register after the beginning of classes will not be required to pay this fee if they register during the special registration session scheduled for such groups. Tuition checks returned by the bank will be considered as non-payment and may result in cancellation of registration or assessment of the late registration fee.

Late add fee

Registered students who add classes after the end of the second week of classes (first week for spring and summer sessions) must pay a non-refundable fee of $10 per class in addition to the cost of the credits added. Classes may not be added after the end of the fourth week of a semester (second week for spring and summer sessions and half-semester courses).

Late penalty payment

Late payment of outstanding balances due to tuition, fees and/or housing will result in assessment of a late payment fee of $5 per billing. Balances due paid by checks that are returned by the bank are considered non-payment and also will result in assessment of this fee.

Application fee

A $20 fee must accompany all applications for admission to degree programs for a particular term. If an applicant decides to reapply for a later term, a new application and additional fee must be submitted.

Enrollment deposit

Students admitted for the fall semester must pay a non-refundable $50 deposit by May 15 (preceding their fall enrollment). Students admitted after May 15 for the next fall semester must pay this deposit within three weeks of admission. This deposit will be applied to the student's account and will offset future fee assessments.

Graduation service fee

Before or during their last semester or session, degree candidates must file an application-for-degree card with the Office of the Registrar and pay a non-refundable fee of $20 (see "General undergraduate degree requirements" on page 24) by the deadline established in the *Schedule of Classes* for that semester or session.

Orientation advising fee

A $50 orientation advising fee for freshmen ($25 for transfer students) is charged to cover the expense of orientation and the ongoing advising process. These fees are non-refundable.

Fees for residential services

The residence halls are financially self-supporting. Housing fees reflect the actual cost of operation and are established by the Oakland University Board of Trustees. These rates are: $2,682 for the 19-meal plan ($2,641 for room and board, $11 hall government fee and $30 debt service reserve charge), $2,570 for the 14-meal plan ($2,529 for room and board, $11 hall government fee and $30 debt service reserve charge) and $2,492 for the 9-meal plan ($2,451 for room and board, $11 hall government fee and $30 debt service reserve charge). Single rooms may be rented, as available, for an additional $480.

If a student signs a housing contract before or during the fall semester, that contract is binding for both the fall and winter semesters. If the contract is signed during the winter semester,

spring session or summer session, it is binding for that particular period only. The housing fee may be paid in full at registration or in equal installments as specified in the *Schedule of Classes*, with the first payment due at registration.

If a student withdraws from Oakland University, room and board fees will be refunded on a prorated basis net of an early withdrawal assessment of $45. Formal notice of withdrawal must be given to the residence halls office.

Refund of fees

A student who withdraws from Oakland University and drops a course that reduces his or her total credit load is eligible to receive a refund of fees subject to a schedule printed in each *Schedule of Classes* upon application to the appropriate office. Failure to drop or withdraw formally will result in forfeiture of any refund.

Undergraduate students withdrawing from Oakland University should apply to the Office of Student Services. Graduate students withdrawing from Oakland should apply to the Office of Graduate Studies. Reductions in a student's credit load that would result in a refund are processed by the Office of the Registrar. The date that notification is received in the proper office determines the applicable refund. A specific schedule of refunds, with qualifying dates, is published each semester and session in the *Schedule of Classes*.

Information regarding the method of calculating refunds for financial aid recipients can be found in the current "Financial Aid Programs Pamphlet," which is available to financial aid recipients upon request.

Refund checks will be mailed approximately six weeks after an application has been made to the appropriate office.

Out-of-state tuition regulations

Students enrolling at Oakland University shall be classified at the time of admission as in-state or out-of-state students for purposes of assessing tuition charges. It is the student's responsibility to register and make full payment each semester or session under the proper in-state or out-of-state classification. For the purpose of these regulations, an in-state resident shall be defined as a person who has a Michigan domicile and has resided in Michigan 12 months immediately preceding his or her enrollment.

A student who was originally classified as an out-of-state student may be reclassified as an in-state student only if he or she has become a bona fide domiciliary of Michigan for at least 12 consecutive months, primarily as a permanent resident and not merely as a student. A student shall not be considered domiciled in Michigan unless he or she is in continuous physical residence in the state and intends to make Michigan his or her permanent home — not only while in attendance at the university, but indefinitely thereafter.

An alien who has been lawfully admitted for permanent residence in the United States shall not, by reason of that status alone, be disqualified from classification as a resident. However, an alien who is present in the United States on a temporary or student visa shall not be eligible for classification as a resident.

Any student who has acquired a bona fide domicile in Michigan subsequent to being classified as an out-of-state student may apply for reclassification from the university registrar. The student shall complete an application and list in detail the reason(s) he or she is a bona fide domiciliary of Michigan, primarily as a permanent resident and not merely as a student, and attach documentary data in support thereof. This application must be returned to the Office of the Registrar within 30 days prior to the beginning of classes of the semester or session for which the reclassification shall be effective. The following facts and circumstances, although not necessarily conclusive, have probative value in support of a claim of a residence classification:

1. Continuous presence in Michigan when not enrolled as a student
2. Reliance upon Michigan sources for financial support

3. Domicile in Michigan of family, guardian or other relative or person legally responsible for the student
4. Former domicile in the state and maintenance of significant connections therein while absent
5. Ownership of a home
6. Long-term military commitments in Michigan
7. Acceptance of offer of permanent employment in Michigan
8. Other factors indicating an intent to make Michigan the student's permanent domicile

The following circumstances, standing alone, shall not constitute sufficient evidence of domicile to affect reclassification of a student as a resident:

1. Voting or registration for voting
2. Employment in any position normally filled by a student
3. The lease of living quarters
4. A statement of intention to acquire a domicile in Michigan
5. Domicile in Michigan of student's spouse
6. Michigan automobile registration
7. Other public records, such as birth and marriage records

Any student desiring to challenge his or her classification under the above regulations of the Oakland University Board of Trustees shall have the right to petition an appeal. Petitions of appeal and inquiries regarding out-of-state regulations should be addressed to the Out-of-State Tuition Committee chairperson.

Student Affairs

The Division of Student Affairs provides a variety of services and programs that complement and enhance students' educational experiences. A brief description of the major areas of the division follows.

Orientation

All students new to Oakland University are expected to attend an orientation session before their first registration. During orientation, students are advised on course selection, informed about important policies and procedures, given information on services and activities available, and introduced to the academic environment. At the conclusion of orientation, students select their first-semester courses. Before orientation, students are asked to attend a placement testing session.

Orientations are also held for special groups such as international students and non-traditional students entering college for the first time. In addition, orientation programs are offered for parents of new freshman students.

A non-refundable initial fee of $50 for freshmen and $25 for transfer students is charged to all new students, whether or not they attend orientation. This fee covers not only orientation but all of the testing, advising, counseling and other services available to Oakland students through the Department of Academic Advising and General Studies.

Residence hall facilities

Oakland University provides on-campus residence halls that relate to and enhance students' academic experiences. A communal living experience with one's peers has been likened to a "laboratory for living" and contributes to the personal growth of students. Students are encouraged to live on campus to take maximum advantage of the activities and resources of the university community.

The university maintains six residence halls that offer great variety in program offerings, accommodations and size. They are attractively grouped on spacious wooded grounds overlooking picturesque Beer Lake and are within convenient walking distance of classroom buildings. Anibal and Fitzgerald houses are L-shaped buildings with 24 rooms in each wing; the wings are joined

by a student lounge. Hill and Van Wagoner houses are six-story units that each contain 100 rooms, a lobby, a lounge and a recreation room. Vandenberg Hall is a seven-story, twin-towered structure. It contains 284 rooms, student lounges, multiple-use areas, study and seminar rooms, and recreation areas. Hamlin Hall houses 676 students. A nine-story hall, it has a main lounge, a lounge on each floor, classrooms and several multipurpose areas.

Rooms are furnished with desks and lamps, bookshelves, wastebaskets, bulletin boards, single beds, dressers, closets and Venetian blinds. Residents must provide their own blankets, linens, throw rugs and draperies. Lamps, electric blankets, clocks, radios, television sets and record players are allowed subject to safety regulations, limitations of space and consideration of others. Telephones are provided in each suite or room, and ticket-operated washers and dryers are available. Maintenance service is provided by the university in common areas. Residents assume responsibility for cleaning their own rooms.

Food service for residents is managed by Saga, Inc., a professional catering service. The dining room in Vandenberg Hall offers cafeteria-style dining for residents and their guests. Special dinners, often featuring ethnic foods, are planned regularly.

To be eligible for university housing, a student must be enrolled for at least 8 credits, except with the permission of the director of residence halls. All full-time unmarried students who have earned fewer than 59 credits and who do not commute from a residence occupied solely by a single-member family related to the student at time of registration must live in the residence halls. Requests for exceptions to this policy will be reviewed by an administrative committee. Exceptions granted to students under age 18 must be accompanied by a written endorsement of exception from the student's parent or legal guardian.

To apply for residence, students should request university housing through the Office of Admissions. Upon a student's acceptance at Oakland University and the submission of a housing contract, his or her reservation will be processed by the Residence Halls Office. Notification of assignment will be given approximately two weeks prior to the beginning of each semester. Returning students may renew their housing contracts through the Residence Halls Office.

Students may occupy their rooms the first day of registration for each semester and session. Room and board is not provided between semesters or during official recesses listed in the university calendar.

Dean of students

The primary function of the dean of students is advocacy for meeting developmental needs of students. To accomplish this, the dean of students monitors the university environment and provides personal assistance to individual students and groups of students. In addition, the administration of financial aid, initiation of student programs and activities, cooperation with student government and coordination of judicial systems are important functions of the dean of students within the Office of Student Life.

Many students desire to achieve personal goals while pursuing extracurricular educational experiences. Approximately 100 student organizations exist at Oakland University, including academic clubs, religious and political organizations, Greek organizations and a variety of special interest groups. Any student who cannot locate a club that serves his or her particular interest is encouraged to form a new group through Campus Information, Programs and Organizations (CIPO).

Students may participate in the following musical ensembles: Collegium Musicum, Gospel Choir, Jazz Band, Oakland University Singers, Opera Chorus, Opera Workshop, Treble Chorus, University Chorus, University Community Chorus, University Orchestra, Vocal Jazz Ensemble and Wind Ensemble. These ensembles may be taken for academic credit or an extracurricular activity.

Student enterprise organizations provide many opportunities for students to investigate their creative and artistic abilities. The lower level of the Barn provides a unique facility for student clubs and organizations. The facility is ideal for coffee houses, talent shows, etc. During the fall and winter semesters, the Barn is open for studying during the day.

University Congress is an elected, campus-wide governmental body that serves students' needs. In addition to its administrative duties, University Congress provides funding for the Student Activities Board, which allocates money to recognized student organization, and for the Student Program Board, a student committee responsible for programming films, lectures, concerts and other recreational activities.

Services for commuting students are coordinated through CIPO. CIPO sponsors a variety of programs and services, including ride pools, lockers, off-campus housing resources and transportation information. Social, educational and recreational activities and programs are also coordinated by the CIPO staff. In addition, CIPO's Campus Ticket Office sells tickets for campus and community events, as well as postage stamps.

Oakland Center

The Oakland Center is the hub of campus activity. Provided in this facility are food service offerings, the Oakland University Bookcenter, indoor recreational activities, student lounges, meeting rooms and exhibit areas.

Student services

The Office of Student Services, located in 201 Wilson Hall, is responsible for official undergraduate withdrawals and readmissions, the student master records system, the Special Services for Disadvantaged Students Program, Project Upward Bound, administering the policies and procedures of the Academic Standing and Honors and Academic Conduct committees, and Minority Affairs/Outreach. Each of these functions is explained under separate headings in the pages that follow.

Placement and career services

The Department of Placement and Career Services provides individual career counseling to all Oakland University juniors, seniors, graduate students and alumni. Special seminars are conducted by staff members to assist all students in developing job search skills. A variety of career day programs is offered throughout the academic year.

The department assists students and alumni by identifying career-related employment opportunities. These include permanent, part-time and summer jobs. Identified opportunities are coordinated through the on-campus recruiting function, job vacancy postings, job referral activities and the publication of a bi-weekly job bulletin.

The department maintains an extensive career library for the distribution and display of employers' literature, career guidance materials, job search information and career publications and magazines. Testing applications for the following examinations are also available: Graduate Record Examination, Law School Admission Test, Medical College Admission Test and Graduate Management Admission Test.

In addition to its career guidance services, the department provides opportunities for students to gain professional-level, career-related work experience before they graduate. This is accomplished through the Cooperative Education Program (see description below) and the Oakland County/Oakland University Student Internship Program. The department also coordinates information about internship/fellowship opportunities generated outside the university.

Cooperative education

Cooperative education is an academic program that combines work experience with classroom education. Co-op exposes students to real work environments in their chosen fields. This helps them decide, while still in college, whether or not they have made the right career choice. It also allows them to graduate from college with valuable experience in addition to their college education, and introduces them to professionals in their prospective fields. Often students receive job offers from their co-op employers upon graduation. In addition, all co-op jobs are paid positions. This compensation can significantly help in financing a student's education.

There are two forms of co-op. When alternating co-op with full-time study, a student works full time for a four-month period (fall or winter semester or spring and summer sessions) and then returns to the classroom for the next four months while a second student takes over his or her job. Students then alternate periods of work and study. In parallel co-op, a student works part time (about 20 hours a week) and carries about half the normal course load.

Cooperative education programs are available for majors in the College of Arts and Sciences, School of Business Administration, and School of Engineering and Computer Science. (For details of each, see the descriptions of programs offered by the college and schools.)

Special advising

The Department of Special Advising provides a variety of services to students with special needs or entitlements (foreign students and scholars, disabled students and eligible veterans).

The department assists foreign students and scholars with necessary Immigration and Naturalization Service procedures and, in the case of exchange visitors, with U.S. Information Agency procedures. It assists disabled students, including those with temporary disabilities, with registration for classes and individual needs and concerns. In addition, the department certifies eligible veterans for educational benefits.

The department also administers testing services — including the ACT, MCAT, GRE and Miller Analogies Test — and the university's National Student Exchange program.

National Student Exchange

Because Oakland University is a member of the National Student Exchange (NSE), students may choose from more than 50 state-supported schools from Hawaii to Maine for an exchange of up to one academic year. The exchange program not only facilitates procedural matters but allows students to pay in-state tuition rates. Participation offers an opportunity to learn about other parts of the country and other kinds of academic settings, take advantage of cultural and academic programs unique to a certain region or institution, and meet other NSE students.

Institutions Oakland University students have been placed at include the University of Alabama, Bowling Green State University, Utah State University, the University of Montana, the University of Oregon, Oregon State University, Rutgers University, the University of Idaho, the University of Massachusetts-Amherst, the University of Southern Maine, the University of Minnesota and the University of Wyoming.

To participate, students must be enrolled full time (12 semester credit hours) at Oakland University at the time of application and placement, and have a minimum cumulative grade point average of 2.50. Generally, all credits earned at the host institution will transfer to Oakland. However, students should meet with their academic adviser in advance to determine which courses will satisfy specific Oakland requirements in general education and their major. For further information on the NSE, contact the Department of Special Advising.

Special programs

The Department of Special Programs provides academic support for students who need special help for a successful academic experience at Oakland University. This department implements the university's Special Services for Disadvantaged Students (TRIO) Program and is staffed by tutors, professional counselors, peer counselors and a curriculum innovator.

The department staffs and administers the Academic Development Center, which provides, without cost to students, support seminars and tutorial assistance to maximize students' chances for success. Although initiated to serve students assigned to the Summer Support Program at the time of admission, the Academic Development Center is open to all students. A part of the Office of Student Services, Special Programs is located in 201 Wilson Hall.

Upward Bound

Upward Bound is a co-educational high school program designed to generate the skills and motivation necessary for success in education beyond high school. It is designed for youth from

low-income families (as defined by U.S. Department of Education guidelines) who have academic potential but lack adequate secondary school preparation. The program includes a six-week summer residential component and a twice-monthly academic year component. High school students are eligible to apply if they have completed ninth grade but have not entered twelfth grade, and if their high school enrollment is in Oakland University's target area (Pontiac, Ferndale, Oak Park). A part of the Office of Student Services, Upward Bound is located in 201 Wilson Hall.

Minority affairs/outreach

Equal Educational Opportunity programs are administered by the Office of Student Services for minority students. General counseling and other support services are available to black and Latino students. Other minority students should also consult this office for assistance.

Academic advising and career counseling

The academic advising program provides for both faculty advising and for a variety of advising and career counseling services through the Department of Academic Advising and General Studies.

Each academic unit has a chief adviser who is responsible for academic advising in his or her area. Students should consult the faculty or staff adviser in the unit of their major and complete with him or her a program plan detailing the course of study to be pursued.

Advising for students who are "undecided" as to a major is provided through the Department of Academic Advising and General Studies, which aids such students in course selection and declaration of a major; undecided students are encouraged to complete a special program plan with the aid of an adviser from this department.

The Department of Academic Advising and General Studies' Career Resource Center contains many services and resources for freshman and sophomore students who wish to explore careers, including career counseling, computerized career guidance systems (SIGI and DISCOVER II), Michigan occupational information, catalogs of other two- and four-year undergraduate institutions and a variety of written handouts.

Placement tests are required for enrollment in some courses. Taking placement tests assists new students in selecting courses that are neither too easy nor too difficult. Tests are offered in the areas of chemistry, mathematics, modern languages, physics and rhetoric. A biology test is also available for nursing majors only.

Freshman students are encouraged to take a battery of placement tests before orientation to assist in advisement. Transfer students may choose to take placement tests in areas where they have no previous course work.

The Department of Academic Advising and General Studies offers placement tests weekly throughout the year. Respective departments also offer testing on an individual basis, usually by appointment. For more information, contact the Department of Academic Advising and General Studies.

Athletics

Intercollegiate sports — Oakland University is a member of the National Collegiate Athletic Association (NCAA) Division II. Oakland male student-athletes participate in intercollegiate basketball, cross country, golf, soccer, swimming, tennis and wrestling. Oakland female student-athletes participate in basketball, swimming, tennis and volleyball. The university is also affiliated with the Great Lakes Intercollegiate Athletic Conference (GLIAC). Other GLIAC schools include Ferris State College, Grand Valley State College, Hillsdale College, Lake Superior State College, Michigan Technological University, Northwood Institute, Saginaw Valley State College and Wayne State University.

Oakland's student-athletes have successfully competed in both the GLIAC and the NCAA. In the athletic department's short history, more than 75 student-athletes have been named to All-America teams.

Intramural activities — the Hollie L. Lepley Sports Center, named in honor of Oakland's first director of athletics, is open seven days a week. Thousands of students participate in the university's well-rounded intramural program yearly. Fall intramural activities include men's and women's and coed softball, men's and women's cross country, men's and women's touch football, men's and women's floor hockey, men's and women's racquetball (individual), men's and women's tennis (individual) and women's and coed basketball. The winter program includes men's, women's and coed volleyball, men's and women's indoor soccer, men's and women's swimming, men's basketball and coed floor hockey. Students, faculty and staff participate on committees for organization, implementation and administration of the intramural program.

The Hollie L. Lepley Sports Center has facilities for basketball, combatives, dance, fencing, golf, handball, paddleball, racquetball, squash, swimming, weight training and wrestling. Its outdoor areas include the 18-hole Katke-Cousins Golf Course, a golf practice and instruction area, softball and baseball diamonds, tennis courts, a soft-surface 1/4-mile track, soccer fields, touch football fields and acres of terrain for hiking, cross-country running and cross-country skiing.

Health services

Oakland University students, faculty, staff and alumni (and their spouses) may receive medical services at the Graham Health Center, Monday through Friday, from 8 a.m. to 5 p.m. Services include physician coverage of most acute and chronic medical problems, laboratory facilities and an emergency room equipped to handle minor trauma and to give initial treatment to more serious emergencies. The health center staff includes a medical doctor, three registered nurses and a medical technician.

The basic physician's fee is $7 for currently enrolled students and $18 for faculty, staff, alumni and spouses. There is no charge to see a nurse. The health center will bill most insurance companies for eligible services. Allergy injections are given while a physician is on the premises (the patient must have a doctor's written instructions and vaccine that may be stored at the health center). A weight-control program and information on nutrition, how to stop smoking, exercise and many other topics are also available.

Child care

The School of Human and Educational Services operates the Matthew Lowry Early Childhood Center for students, faculty and staff with child care needs. Located at Adams and Butler roads at the southeast corner of the campus, the center houses three programs: preprimary, preschool and toddler.

The preprimary program is for kindergarten-age children who need a full-day program. The toddler program is for children who are walking to 3 years old; the preschool program serves children from 3 to 5 years old. These programs are designed to stimulate the developmental growth of children.

The Early Childhood Center operates weekdays from 7:45 to 5:30 p.m. Registration for the programs coincides with university registration. Parents are assessed on an hourly rate that varies for students, faculty and staff.

Psychology Clinic

The Psychology Clinic is staffed with clinical and counseling psychologists who provide specialized counseling, consultation and psychotherapy to Oakland University students. Use of the center is voluntary and is available by appointment at a minimal charge (many insurance policies reimburse the clinic's services).

The clinic also offers marriage counseling, child therapy, family therapy, psychological testing and vocational counseling. The vocational counseling program involves a series of intensive interviews and tests with focus on personal issues in career development. The psychological testing services are aimed at assessing developmental growth as well as the nature of personal problems. Services of the center are also available to the public at a higher fee. Fees are based on family income.

ACADEMIC POLICIES AND PROCEDURES

Undergraduate Degree Requirements

Undergraduate degree requirements are of two kinds: general degree requirements determined by the university to be binding on all baccalaureate programs, and specific degree requirements established by the various colleges, schools and other academic units that offer degree-level programs of instruction. Students may choose to meet graduation requirements as presented in the catalog extant at the time of graduation or in any catalog in effect since their matriculation at Oakland University, providing that the catalog is not more than six years old at the time of graduation. They may use one catalog for both general degree requirements (including the general education program) and those of the major or meet general university requirements from one catalog and those of the major from another.

An academic unit may require that students changing majors into its program from another major, or from undecided status, must follow major requirements and college or school distribution requirements (if applicable) from a catalog no earlier than the one in effect at the time of admission to the new major. (A change from pre-major to major standing in the same field does not constitute a change of major.) Students who change majors should read the section of the catalog covering the new program and consult an adviser to learn which catalog(s) they may use for requirements for the major. They, like all other Oakland University students, may still follow general education requirements from a second catalog, either earlier or later than the one used for the major.

Students who entered Oakland University before September 1985 should know that the general education requirements in the catalog under which they entered were tied to the major and varied from school to school. They may choose to follow the new university-wide general education program introduced in 1985 or follow the one outlined for the school sponsoring their new major program in any catalog for which they are eligible.

A student may establish credit in a course to meet degree requirements by earning a passing grade in the course, by passing a competency examination or by receiving transfer credit from another institution. In certain circumstances, a requirement may be formally waived through a successful Petition of Exception.

Student responsibility

Each student must fulfill all general, procedural and specific requirements and abide by all pertinent academic regulations in order to earn a degree at Oakland University. It is the student's responsibility to learn the requirements, policies and procedures governing the program being followed and to act accordingly.

Students should consult their faculty advisers regularly to verify that all degree requirements are being met in a timely fashion and to file program plans. Each term's *Schedule of Classes* indicates the locations and telephone numbers of the undergraduate advising and counseling department as well as school and departmental advising offices.

General undergraduate degree requirements

Oakland University has established general undergraduate degree requirements applicable to all candidates for all undergraduate degrees. In order to earn a baccalaureate at Oakland University, a student must satisfy the following criteria:

1. Residence requirement: A student must successfully complete at least 32 credits at Oakland University. He or she must also take the last 8 (4 for Bachelor of General Studies designation) credits needed to complete the requirements for a baccalaureate at Oakland University.

2. Grade point average: A student must have a cumulative grade point average (GPA) of at least 2.00 in courses taken at Oakland University. In certain programs, additional GPA requirements must be met.
3. Credit rules: A student must have successfully completed at least 32 credits in courses at the 300 level or above. If a student has accumulated 62 credits of work from any institution(s), he or she may not transfer additional work from a two-year institution either for credit or to meet any degree requirement. (This includes satisfying a prerequisite for a required course.)
4. Writing proficiency — A student must demonstrate proficiency in writing at, or within a reasonable time after, entrance to Oakland University. Entering students transferring 32 or fewer credits must demonstrate writing proficiency before they accumulate 48 credits in order to register or receive credit for upper-level courses (those numbered 300 or above). Entering students transferring 33 or more credits must demonstrate proficiency before they complete 16 credits at Oakland University in order to register for upper-level courses. Proficiency may be demonstrated in several ways:
   a. By completing RHT 101 with a grade of 2.0 or better.
   b. By transferring two college-level English composition courses (at least 6 credits). Students who have completed such courses with grades of 2.0 or better may submit their transcripts to the registrar for evaluation. Transfer students who have credit for only one English composition course or for fewer than 6 credit hours must take RHT 101 or the student-initiated proficiency test (see below).
   c. By petitioning the Proficiency Committee of the Department of Rhetoric, Communications and Journalism with samples of their writing, including three papers that have been completed to meet class requirements at Oakland University. One of these papers must indicate an ability to use some standard system of annotation. In addition to the writing samples, students must include supporting letters from two Oakland University faculty members.
   d. By demonstrating superior writing skills in a student-initiated proficiency examination administered by the Department of Rhetoric, Communications and Journalism. This examination is offered throughout the academic year; students should contact the department (370-4120) or Department of Academic Advising and General Studies (370-3226) for a current testing schedule.
5. **General education:** The general education program is designed to provide a common and coherent educational experience for all Oakland University undegraduates. It is based on the belief that educated persons should possess not only knowledge in a particular field of specialization but also an understanding of the world around them, an appreciation of the legacy of the past and some vision of the future. Exposure to a variety of disciplines will enable students to acquire a breadth of knowledge, develop analytical skills and examine fundamental questions of human experience.

   All students must complete 32 credits in general education, including at least one 4-credit course from the list of approved courses offered in each of the following eight field categories: arts; literature; language; western civilization; international studies; social science; mathematics, logic and computer science; and natural science and technology.

   Transfer students may fulfill this requirement with courses from their former institutions that have been approved for this purpose by the University General Education Committee; in such cases, a 3-credit transfer course may serve as the required course in a particular field category, but the student must still present a total of 32 credits and all eight categories must be represented. Students who have earned more than 30 accepted transfer credits at Michigan community colleges may choose to meet the earlier general education requirement as presented in the 1984-85 undergraduate catalog, provided they enrolled in the community colleges before fall 1984 and enroll at Oakland University before fall 1987. Transfer students holding an associate's degree from a community college participating in the Michigan Association of College Registrars and Admissions Officers (MACRAO) Articulation Agreement will be considered to have fulfilled Oakland University's general education requirement minus

one exception: While course work in English composition is considered part of community college general education criteria, English composition (rhetoric) is required in addition to Oakland University's general education requirement. Therefore, transfer students under the MACRAO agreement must complete two additional general education courses at Oakland University. Students must meet with an academic adviser to select these courses.

The policy stipulated above is considered a minimum credit requirement that academic units may increase for their own students. Students pursuing degrees in the College of Arts and Sciences should refer to pages 41-42 for additional distribution requirements.

General education requirements: Each candidate for an Oakland University baccalaureate is required to complete satisfactorily at least one approved course from each of the following field categories:

a. Arts: Courses in the arts category are designed to provide an understanding of how people express through the arts their experience of the world. The arts are the visual and auditory material of culture. Courses in this field will help students approach, understand and appreciate the aesthetic dimensions of human experience.

AH 100	Introduction to Western Art I
AH 101	Introduction to Western Art II
CIN 150	Introduction to Film
DAN 173	Dance History and Appreciation
MUS 100	Introduction to Music
MUS 250	World Music Survey I
MUS 320	Survey of Music History and Literature
THA 100	Introduction to Theatre
THA 268	Theatre History I
THA 269	Theatre History II

b. Literature: The study of literature enables the student to move beyond individual experience by participating in the intellectual, emotional and spiritual experiences of others. The study of the ways literary works fuse form and content cultivates sensitivity to language and enhances awareness of our humanity.

ENG 100	Masterpieces of World Literature
ENG 105	Shakespeare
ENG 111	Modern Literature
ENG 224	American Literature
ENG 241	British Literature
ENG 303	Fiction
ENG 306	Drama
ENG 312	Classical Mythology
LIT 100	Introduction to Asian Literature
LIT 181	European Literature I
LIT 182	European Literature II

c. Language: Language both reflects and shapes human culture. The systematic study of a foreign language or of language systems will help students become aware that people think, behave and perceive reality in ways related to the languages they speak.

ALS 176	The Humanity of Language
CHE 114*	Introduction to Chinese
FRH 114*	Introduction to French
GRM 114*	Introduction to German
HIUR 114	Introduction to Hindi and Urdu
IT 114*	Introduction to Italian
JPN 114*	Introduction to Japanese
LIN 207/ SCN 207	Semantics
RUS 114*	Introduction to Russian

SPN 114* Introduction to Spanish

*Students who complete a 4-credit foreign language course beyond the 114 level will receive credit for satisfying the field category in language upon completion of the course.

d. Western civilization: Courses in this category examine significant political, social, economic and intellectual developments of Western cultures from a historical perspective. Students will develop skills of critical inquiry into historical events and investigate the foundations of Western thought.

HRD 302 Ethics and Personal Crises
HST 101 Introduction to European History Before 1715
HST 102 Introduction to European History Since 1715
HST 114 Introduction to American History: Nation-Building
HST 115 Introduction to American History: Modernization and World Power
HST 210 Science and Technology in Western Culture
PHL 101 Introduction to Philosophical Thought
PHL 103 Introduction to Ethics
PHL 204 History of Western Philosophy: Classical Greek Philosophy
PHL 205 History of Western Philosophy: Hellenistic and Medieval Philosophy
PHL 206 History of Western Philosophy: Early Modern Philosophy
PS 377 Communism

e. International studies: The examination of a culture other than their own will help students understand and value the traditions and experiences of other people. It also provides them with fresh perspectives on their own assumptions and traditions.

IS 210 Introduction to China
IS 220 Introduction to Japan
IS 230 Introduction to Africa
IS 240 Introduction to India
IS 250 Introduction to Latin America
IS 260 Introduction to Russia and Eastern Europe
IS 270 Introduction to the Middle East

f. Social science: Courses in this category will introduce students to major concepts in a field of social science and its methods of scientific inquiry. The social sciences examine the influences of social and cultural factors on individual or group behavior and values.

AN 101 Human and Cultural Evolution
AN 102 Culture and Human Nature
AN 307 Culture and Society through Film
ECN 150 Basic Economics
ECN 200 Principles of Macroeconomics
ECN 210 Principles of Economics
PS 100 Introduction to American Politics
PS 115 United States Foreign Policy
PS 131 Foreign Political Systems
PSY 100 Foundations of Contemporary Psychology
PSY 130 Psychology and Society
SOC 100 Introduction to Sociology
SOC 206 Self and Society

g. Mathematics, logic and computer science: Courses in this category examine systematic ways of approaching, processing and analyzing data and ideas from different disciplines. While divergent in approach, these courses will help students become more familiar with means of quantification and symbolic systems.

CSE 125 Introduction to Computer Use
CSE 130 Introduction to Computer Programming
LIN 115/
CSE 115 Natural and Artificial Languages

MTH 121	Linear Programming, Elementary Functions
MTH 122	Calculus for the Social Sciences
MTH 154	Calculus I
MTH 185	Exploration into Undergraduate Topics
PHL 102	Introduction to Logic
PHL 202	Introduction to Symbolic Logic
STA 225	Probability and Statistics

h. Natural science and technology: Courses in this category will introduce students to major concepts in a field of natural science or modern technology and to the methods of scientific inquiry. Students will also gain understanding of the impact and implications of natural science and technology in the modern world.

BIO 104	Human Biology
BIO 110	Life on Earth
BIO 190	Biology
BIO 200	General Biology
BIO 300	Biology and Society
CHM 104	Introduction to Chemical Principles
CHM 110	Chemistry in the Modern World
CHM 144 (or 164)	General Chemistry
CHM 145 (or 165)	General Chemistry
CHM 201	Introduction to Organic and Biological Chemistry
ENV 308	Introduction to Environmental Studies
HS 201	Health in Personal and Occupational Environments — Ideas, Concepts, Issues and Applications
PHY 101 (or 151)	General Physics I
PHY 104	Astronomy: The Solar System
PHY 105	Astronomy: Stars and Galaxies
PHY 106	Earth Science
PHY 107	Oceans and Atmosphere
PHY 115	Energy
PHY 125	The Physics of Music
PHY 127	Human Aspects of Physical Science

6. Procedural requirements:
   a. Students must be in substantial compliance with all legal curricular requirements.
   b. Before or during the semester or session in which they expect to complete all academic requirements, degree candidates must file an application-for-degree form at the Cashier's Office with a non-refundable $20 fee. The filing deadline for each semester or session is indicated in the "Schedule of Classes" for that term. Failure to apply will result in deferred graduation. Application forms are available at the Records Office, 102 O'Dowd Hall.
7. Specific requirements: Students must fulfill all specific undergraduate degree requirements as stipulated by the various colleges, schools or other academic units empowered to present candidates for the undergraduate degree(s) over which they have authority. For further information concerning specific undergraduate degree requirements, consult the following areas of this catalog:
   a. Bachelor of Arts, Bachelor of Music and Bachelor of Science, College of Arts and Sciences
   b. Bachelor of Science, School of Economics and Management
   c. Bachelor of Science and Bachelor of Science in Engineering, School of Engineering and Computer Science
   d. Bachelor of Science, School of Health Sciences

e. Bachelor of Science, School of Human and Educational Services
f. Bachelor of Science in Nursing, School of Nursing
g. Bachelor of General Studies, Division of Continuing Education

Additional undergraduate degrees and majors

Under certain conditions, a student may earn either an additional baccalaureate or a single baccalaureate with multiple majors.

1. If a student enrolled at Oakland University but not yet holding any degree from this institution wishes to pursue two or more Oakland University baccalaureates simultaneously, he or she must:
   a. Meet all specified requirements for each degree program.
   b. Complete at least 32 credits at Oakland University beyond those required for the degree requiring the most credits. Of these, 16 credits must be at an advanced level (courses at 300 level or above).

These degrees must either have separate designations (for example, Bachelor of Arts and Bachelor of Science) or be earned in separate academic divisions (for example, the College of Arts and Sciences and the School of Engineering and Computer Science).

A student who meets the requirements for more than one major program but who is ineligible to receive separate degrees — either because of the above general restrictions or because of an insufficient number of credits — may receive a single degree with more than one major recorded on his or her transcript.

2. If a student holding a baccalaureate from Oakland University wishes to earn another Oakland University baccalaureate, the second degree must, as with the degrees described above, either have a separate designation or be awarded by a different academic division. The student must then:
   a. Receive written approval from the college or school concerned (and, where appropriate, from the department) as part of the admission process to the new degree program.
   b. Meet all specific requirements for the new degree as stipulated by the college, school or other academic unit in which the person is a candidate.
   c. Complete at least 32 additional credits at Oakland University.

A student ineligible to complete a second degree may, however, enroll as a post-baccalaureate student and obtain verification from a major department that he or she has met all requirements for an additional major.

3. If a student holding a baccalaureate from another accredited institution of higher education wishes to earn an additional baccalaureate from Oakland University in a different discipline, he or she must:
   a. Receive written approval from the college or school concerned (and, where appropriate, from the department) as part of the admission process to the new degree program.
   b. Meet all specific requirements for the new degree as stipulated by the college, school or other academic unit in which the person is a candidate.
   c. Complete at least 32 additional credits at Oakland University.

A student already holding a baccalaureate who wishes teacher certification must either be admitted to a degree program in accordance with the policies and procedures described above or, if he or she is ineligible for such a program, may enroll as a graduate student in courses leading to the completion of initial provisional certification requirements (see page 277 of this catalog).

Course and credit system

The credit-hour value of each course (the number in parentheses following the course title) is specified in semester hours. One semester hour is equivalent to a total of three hours per week including 50 minutes of scheduled instruction and the estimated time that an average student spends in outside preparation each week. Most Oakland University courses are 4 credits. A full academic load is 16 to 18 credits per semester. With his or her adviser's permission, a student

who has completed 12 or more credits at Oakland University may register for as many as 21 credits, if his or her cumulative grade point average is at least 2.60. All other students may take more than 18 credits only as a result of a successful Petition of Exception.

Regulations governing courses

1. A course sequence joined by a hyphen (e.g., FRH 114-115) must be taken in the order indicated. The first course in such a sequence is a prerequisite to that following.
2. Course numbers separated by commas (e.g., HST 114, 115) indicate related courses that may be taken in any order. However, departmental or program requirements may sometimes govern the order.
3. Course numbers 000-049 are designated for skill development courses specially designed to aid incoming students with significant deficiencies in their academic background in preparing for courses numbered 100 and above. Credits earned in these courses may not be used to satisfy minimal graduation requirements in any academic program. These courses are included in the student's grade point average. Course numbers 050-099 are for courses specially designed to enrich academic skills. Not more than 16 credits in such courses and in tutorial work may count toward graduation requirements. Courses numbered 100-299 are introductory undergraduate courses primarily for freshmen and sophomores. Courses numbered 300-499 are designed for juniors and seniors. Courses numbered 500 and above are primarily for graduate students. Qualified undergraduates may enroll in a class numbered 500-599 provided they have obtained written permission to do so from the department or school offering the class. Only graduate students are eligible for courses numbered 600 and above.
4. The university reserves the right to cancel any course in which there is insufficient registration.
5. It is the student's responsibility to complete all prerequisites before registering for a course with such requirements. Departments may waive prerequisites in accordance with university policy.
6. Some courses are cross-listed between departments. In such cases, the course description is listed only in one department. The listing in the other department notes that the course is identical with the course in the primary department. When registering, students should select the listing under which they wish to receive credit.

Course competency

Students may receive credit toward graduation designated as competency credit (graded S/U) on their transcripts for Oakland University courses, subject to the following provisions:

1. That they register for the course at registration with written permission of the departmental chairperson, dean or program director of the academic unit responsible for the course.
2. That they pass an appropriate competency examination not more than six weeks after the term begins. Competency credit will not be permitted for a course when a student has received credit for more advanced courses in the same area. The repeat course rule applies to the repeating of competency examinations.

A student may apply up to 60 credits based on non-classroom experience (course competency, Advanced Placement and/or CLEP credits) toward a degree program.

Petition of exception

Any student may request a waiver or modification of specific academic requirements. Students may obtain a Petition of Exception form from the office of the dean of the student's college or school. The completed form should be signed by a faculty adviser in the student's major department or school. Petitions for modification of the normal requirements of a major in order to suit individual programs should be directed to the chairperson of the major department or school.

Petitions for modification of general undergraduate degree requirements should be returned to the office of the dean of the student's college or school for referral to the appropriate com-

mittee on instruction. The student, the registrar and the student's academic adviser or major department will receive a copy of the petition containing the action taken. Petitions of Exception relating to graduation requirements must be filed no later than the second week of the semester or session of intended graduation.

Change of courses

If a student decides not to complete a course, the course may be dropped through the ninth week in 14-week courses and the fifth week in 7-week courses. Courses dropped for which either fee cancellation or refund of fees is claimed must be processed through a drop-and-add form obtained from and submitted to the Registration Office, 100 O'Dowd Hall (see also "Refund of fees" on page 17).

Previously registered students wishing to add a course should do so as early as possible in the semester or session. Courses may not be added following the fourth week of instruction (second week in spring and summer sessions and for 2-credit, half-semester courses).

Grading system

1. The basic undergraduate grading system at Oakland University is a 32-point system of numerical grades, with passing grades ranging from 1.0 through 4.0, by tenths, and a no-credit grade of 0.0. Non-numerical grades are "W," "I," "P," "S," "U," "R" and "Z."
2. The first two weeks of a semester (one week in spring and summer sessions) are a no-record period for dropping and adding full-semester courses. The no-record period for 2-credit, half-semester courses is the first week of instruction.
3. The meanings of non-numeric grades are as follows:
   a. W (Withdrawal) is assigned by the registrar if a student withdraws officially from a course between the end of the no-grade period and the ninth week of 14-week courses (the fifth week of 7-week courses).
   b. The I (Incomplete) grade is temporary and may be given only after the cut-off date for use of the W grade. It is used in the case of severe hardship beyond the control of a student that prevents him or her from completing course requirements. Course work to remove an I grade must be completed during the first eight weeks of the next semester (fall or winter) for which the student registers unless a student-initiated extension is approved by the instructor and the dean of the appropriate college or school. If course requirements are not completed within one year and no semester has been registered for, the I grade shall be changed to a grade of 0.0.
   c. The P (Progress) grade is temporary and may be given only in a course that, by design, cannot be completed in one semester or session. Prior approval must be obtained from the dean of the appropriate college or school to assign P grades in a particular course. The P grade is only given for course work that is satisfactory in every respect. P grades must be removed within two calendar years from the date of assignment. If this is not done, the P will be changed to a 0.0.
   d. The S (Satisfactory) grade implies a grade of 2.0 or better in certain selected courses in which S/U grading is used exclusively; such courses must be approved by the appropiate committee on instruction. Under circumstances presented below, students may elect as an option to take a numerically graded course on an S/U basis.
   e. The U (Unsatisfactory) grade is given in selected courses approved for S/U grading and implies a grade of less than 2.0. It also denotes unsatisfactory work in a numerically graded course elected by a student on an S/U basis.
   f. R is a temporary grade assigned by the registrar in the absence of a grade from the instructor.
   g. Z is assigned upon registration for an audited course. The student's declaration of intention to audit is required, and it is understood that no credit for the course is intended that term.

4. If none of the above applies, the course is considered to have been successfully completed when the instructor assigns a numerical grade from 1.0 to 4.0. The University Senate has approved publication of the following conversion for some external purposes:
   3.6-4.0 — A
   3.0-3.5 — B
   2.0-2.9 — C
   1.0-1.9 — D
   0.0 — no credit
5. All grades appear on a student's transcript. However, only numerical grades are used to determine the student's grade point average, which is computed to two decimal places.

S/U grading option

Any undergraduate who has completed at least 28 credit hours toward graduation may elect to take up to 8 credits of course work at Oakland University on an S/U grading basis, assuming that all prerequisites have been completed and subject to the following conditions:

a. These credits may only be counted as free elective credits. They may not be used to satisfy general education requirements (including college or school distribution requirements), the student's major or minor course requirements or prerequisites, or any courses designated "No S/U" in the *Schedule of Classes*.
b. Any courses that are designated S/U in the catalog or *Schedule of Classes* will not count toward the limit of 8 S/U grading option credits per student. Courses where the S/U grading system is used to grade all students in the course can be used to satisfy any academic requirement.
c. The student must elect the S/U option by the late registration deadline by filing the appropriate form with the Registration Office, 100 O'Dowd Hall.
d. Instructors will not be informed on their enrollment lists as to who are the S/U students, if any. They will simply assign numeric grades (0.0 to 4.0) to all enrolled students. For students who have elected the S/U option, the Registrar's Office will then convert numeric grades from 2.0 to 4.0 to an "S" and numeric grades from 0.0 to 1.9 to a "U." An "S" or "U" will appear on the student's grade slip and transcript.
e. Neither the "S" nor the "U" grade will be included in the student's Grade Point Average.
f. If an academic unit at Oakland University later requires evidence of a numerical grade point instead of an "S," because of a change of program status, the student may file a petition with the Registration Office to release that grade point information to the program requiring the evidence.
g. If a course is repeated, it must be repeated on the same grading basis as the first attempt.

Academic conduct policy

All members of the academic community at Oakland University are expected to practice and uphold standards of academic integrity and honesty. Instructors are expected to inform and instruct students about the procedures and standards of research and documentation required to fulfill course work. Students are expected to follow such instructions and make sure they understand the rules and procedures in order to avoid inadvertent misrepresentation of their work.

Students must assume that individual (unaided) work on exams, lab reports, computer assignments and documentation of sources is expected unless the instructor specifically says that it is not necessary. Students must also assume that if the instructor assigns a special project other than or in addition to exams (such as a research paper, an original essay or a book review) as part of the course requirements, he or she intends that work to be completed for that particular course exclusively. Any such work students may have completed for a course taken in the past, or may be completing for another current course, must not be submitted unless permission to do so is received.

Academic integrity means representing oneself and one's work honestly. Misrepresentation is cheating — it means a student is claiming credit for ideas or work not actually his or hers

and is thereby seeking a grade that is not actually earned. The following definitions are examples of academic dishonesty:

1. Cheating on examinations by using materials such as books and/or notes when not authorized by the instructor; taking advantage of prior information not authorized by the instructor regarding questions to be asked on the exam; copying from someone else's paper; helping someone else copy work; and other forms of misrepresentation. Students should be careful to avoid the appearance of cheating.
2. Plagiarizing the work of others. Plagiarism is using someone else's work or ideas without giving that person credit; by doing this a student is, in effect, claiming credit for someone else's thinking. Whether the student has read or heard about the information used, he or she must document the source of information. When dealing with written sources, a clear distinction should be made between quotations (which reproduce information from the source word for word within quotation marks) and paraphrases (which digest the source information and produce it in the student's own words). Both direct quotations and paraphrases must be documented. Even though a student rephrases, condenses or selects from another person's work, the ideas still belong to that person; failure to give credit constitutes misrepresentation of the student's actual work and plagiarism of another's ideas. Naturally, buying a paper and handing it in as one's own work is plagiarism.
3. Cheating on lab reports by falsifying data or submitting data not based on the student's own work.
4. Falsifying records or providing misinformation regarding one's credentials.
5. Unauthorized collaboration on computer assignments and unauthorized access to and use of computer programs.

If a student feels that practices by the instructor are conducive to cheating, he or she may convey this information to the instructor, the student ombudsperson of the University Congress or any member of the student/faculty University Committee on Academic Conduct (either directly or through the Office of the Dean for Student Services).

Instructors are expected to bring evidence of plagiarism, cheating on exams or lab reports, falsification of records or other forms of academic misconduct before the Academic Conduct Committee of the University Senate for determination of the facts in the case and, if warranted, assessment of penalty. If academic misconduct is determined, the committee will assess penalties ranging from academic disciplinary reprimand (which is part of the student's confidential university file), to academic probation, suspension or dismissal from the university.

Instructors play at least three roles in maintaining proper standards in the context of academic conduct:

1. To assist in recognizing the application of general standards in the context of a particular course or discipline;
2. To take practical steps to prevent cheating and to detect it when it occurs;
3. To report academic misconduct to the dean for student services, 201 Wilson Hall, for consideration by the Committee on Academic Conduct.

Auditing courses

A formal audit option is available for students who wish to participate in a course on a nongraded basis. With written permission of the instructor, students may register to audit a course during the late registration period for each semester or session. Forms for auditing classes are available in the Office of the Registrar, Office of Admissions, Office of Graduate Study and Undergraduate Advising and Counseling Office.

Audit registrations are governed by the following rules:

1. Regular tuition and fees apply to all courses.
2. The registrar will assign the final mark Z to all formal audits.
3. Changes of registration from credit to audit or from audit to credit will not be permitted once the no-grade add/drop period has ended for a given semester or session.

4. Students who wish to audit courses must have been admitted to the university by the Office of Admissions.
5. Students whose entire registration for a semester or session consists of formal audits must register during late registration. Late registration fees will be waived for such students.

Repeating courses

Students may repeat a course up to two times, with the last grade (excluding non-numeric grades) earned in the course used in the grade point average (GPA) computation. At the time of registration for a course taken previously, the student must file a "repeat form." Filing this form is the student's responsibility and will ensure that proper adjustments to GPA and degree credits are made.

Academic honors

At the end of each fall and winter semester, undergraduates who have earned a semester grade point average (GPA) of 3.00 or higher in at least 12 credit hours of numerically graded university work and who have received no 0.0 grades will be recognized for academic achievement. These credits must be earned within the time constraints of the normal semester. Credits or grades for incompletes awarded after the end of the term will not be considered for commendation or honors. Notices of commendation will be sent to undergraduates with GPAs of 3.00 to 3.59. Notices of academic honors will be sent to undergraduates with GPAs of 3.60 to 4.00. Both commendation and academic honors will be recorded on students' academic transcripts.

University honors

The three levels of university honors, cum laude, magna cum laude and summa cum laude, may be awarded with the conferral of a student's earned baccalaureate with the following cumulative grade point averages: 3.60 -3.74, cum laude; 3.75-3.89, magna cum laude; and 3.90-4.00, summa cum laude.

The awarding of a degree with university honors will be based only on Oakland University credits, and the student must earn at least 62 credits at Oakland University to be eligible for such honors.

Academic records

Academic records are maintained in the Records Office, 102 O'Dowd Hall. Standing reports are mailed to each enrolled student's permanent address of record at the end of each academic period. Transcripts of academic records may be obtained by completing a transcript request form at the Records Office or by writing Transcript Request, Office of the Registrar, Oakland University, Rochester, Michigan 48063. Requests should include the name under which the student attended, the student's Oakland University student number, the date the student last attended and date of degree (if applicable), the level of last course work and the address to which the transcript is to be sent.

A check or money order of $3 per transcript must accompany the request. Transcripts will not be issued for students who have delinquent indebtedness to the university or who are delinquent in repaying a National Direct Student Loan (NDSL) or Nursing Student Loan (NSL).

Academic probation and dismissal

Undergraduates who make unsatisfactory progress toward a degree by failing courses, will be placed on probation in accordance with a university policy that stipulates that students must complete for credit most of the courses for which they register. Students on probation who fail to meet the minimal standard of progress established by the University Senate will be dismissed from the university.

Students receive a report of their academic standing on a Report of Standings. Students whose continued enrollment in the university is questionable will receive a letter and an appeal form

from the Office of the Dean for Student Services after term grade reports are distributed. If the student is dismissed, an appeal petition must be filed with the dean for student services within 10 days of issuance of the dismissal notification.

The Academic Probation and Dismissal Policy is administered by the dean for student services for the University Senate's Academic Standing and Honors Committee. The policy is based on the following principles or practices:

1. Each student should be encouraged to make responsible decisions concerning his or her educational progress. A student who is apparently not benefiting sufficiently from the educational opportunities available at the university should be advised to consider other alternatives. A non-achieving student should take the initiative and turn to more productive or satisfying activities before the committee finds it necessary to dismiss him or her.
2. The major share of a student's educational expense is provided by the State of Michigan, and it is the responsibility of the university to see that these funds are properly used. If a student fails to make satisfactory academic progress toward a degree, dismissal action must be taken by the Academic Standing and Honors Committee.
3. Some new students to the university (including transfer students) need a period of adjustment; therefore, no student will be dismissed at the end of his or her first semester at the university. Furthermore, a student will not be dismissed without having been placed on probation in a previous semester.
4. Students must have a 2.00 grade point average (GPA) upon graduation, and the probation policy specifies that they must make satisfactory progress toward this goal. Students with fewer than 80 credits toward graduation who have GPAs below 2.00 are normally allowed to continue their studies on probation if it is reasonable to expect that they can sufficiently raise their cumulative GPAs.
5. The Academic Standing and Honors Committee attempts to assemble and review pertinent information on each student who is in academic difficulty. Sometimes, however, there is information that would modify the decision if it were available. Consequently, students are advised to appeal the action of the committee if they feel there are valid reasons for rescinding probation or dismissal actions.
6. Students are notified on their grade reports of their academic standing.
7. Students who have been dismissed may appeal by completing an official Academic Standing Appeal Form and submitting it to the Academic Standing and Honors Committee within 10 days of receipt of the dismissal notice. The forms are available in the Student Services Records Office, 201 Wilson Hall.

Specific procedure: To stay in good academic standing, the student must not allow his or her cumulative GPA to drop below 2.00. Some schools and departments establish more selective criteria for satisfactory academic performance within their majors. Students should consult other sections of this catalog for specific information.

Actions to be taken with regard to grades earned at Oakland University between the fall 1976 semester and the summer 1984 session:

1. Any student who has accumulated more than 32 credits of N/WN grades is liable for dismissal.
2. The academic standing of a student whose accumulation of N/WN grades is less than the above limit is based on a numerical approximation of progress toward graduation called an Academic Progress Indicator (API).
3. In the computation of the API, W grades are not used.
4. In the computation of the API, S/WS grades are assigned the numerical value of 2.0; N/WN grades are assigned the numerical value of 0.0.
5. The computation of API depends on the number of credits of N/WN grades received and the number of credits earned toward graduation. There are three different cases:
   a. More than 27 credits toward graduation and more than 12 credits of N/WN grades: The API is the ratio of the sum of the honor points of the numerical equivalents of all grades received to the total number of credits attempted.
   b. More than 27 credits toward graduation and fewer than 13 credits of N/WN grades: The

API is the ratio of the sum of the honor points of the numerical equivalents of all grades earned toward graduation to the number of credits earned toward graduation.

c. Fewer than 28 credits earned toward graduation: The API is computed as in a. above.

6. A student with 80 credits or more toward graduation whose API is less than 2.00 is liable for dismissal. A student with T (transfer credits) and E (earned credits) at Oakland University with T + fewer than 80 whose API is less than 1.4 + 0.6E (80−T) is liable for dismissal.
7. A student who is liable for dismissal at the end of a probationary term will be dismissed.
8. A student will be placed on probation at the end of a term if:
   a. The student is not liable for dismissal, but the API is less than 2.00 or
   b. The student is liable for dismissal but is not already on probation.
9. A student who has successfully appealed a dismissal will be placed in the Dismissal Option Program.
10. A student in the Dismissal Option Program will return to good standing at the end of the term in which the API is greater than or equal to 2.00.
11. A student in the Dismissal Option Program will be continued in the program if the API of that term's work (computed as in 5a.) continued over succeeding terms until 124 credits are completed would result in an API of at least 2.00. Otherwise, the student will be dismissed.

The grading system described on page 31 of this catalog went into effect in the fall 1984 semester, eliminating N, WS and WN grades and the need for an API for new students. Hereafter, the GPA will be used to determine academic standing, with the API only serving as an index of academic progress for students admitted to the university between fall 1976 and summer 1984.

Dismissal from the university

An undergraduate who is dismissed from the university for any reason does not retain the privileges of a registered student. A student who has been dismissed must apply for readmission through the Student Services Records Office, 201 Wilson Hall, unless he or she has been informed that readmission will not be considered.

Undergraduate withdrawal

A student who leaves the university for any reason must follow the withdrawal procedure. Undergraduates withdrawing from the university must do so through the Student Services Records Office. When a student withdraws from the university after the second week of classes (first week in spring and summer sessions) and before the end of the official withdrawal period, W grades will be assigned in all uncompleted courses. Official withdrawal from the university is not permitted after the ninth week of 14-week courses (fifth week of 7-week courses).

Undergraduates who plan to return to the university should consult the readmission policy below.

Readmission

An undergraduate whose attendance at Oakland University is interrupted may be required to make formal application for readmission. The regulations are:

1. Students whose attendance has been interrupted for a period of six or more years must apply for readmission.
2. Students who withdraw from the university and who are not in good academic standing at the time of the withdrawal must apply for readmission.
3. Students who have been dismissed from the university for any reason must apply for readmission.
4. All other undergraduates may return and register for classes without seeking formal readmission.

Students who must apply for readmission should submit an application to the Student Services Records Office at least one month before the first day of registration of the semester or session the undergraduate expects to re-enter. (Failure to apply early could result in not being able to register.)

On-campus evening degree programs

Students may earn undergraduate degrees at night in 20 major areas: accounting, area studies, communication arts, economics, English, finance, general management, general studies, history, human resources development, human resources management, industrial health and safety, journalism, management information systems, marketing, political science, psychology, public administration, quantitative methods and sociology/anthropology.

In addition, concentrations are available for students attending only in the evening in energy studies, film aesthetics and history, social justice and corrections, and women's studies. Minors in area studies, communication arts, economics, English, finance, history, human resources development, industrial health and safety, journalism, management, political science, psychology and sociology/anthropology are available to evening students.

OTHER ACADEMIC PROGRAMS

This catalog is devoted to undergraduate degree offerings at Oakland University through the College of Arts and Sciences and schools of Business Administration, Engineering and Computer Science, Health Science, Human and Educational Services and Nursing. In addition, the university has two other academic units that are central to its mission. Brief descriptions of these units are provided below.

University Library

Dean: *Suzanne O. Frankie*

Associate dean: *Indra M. David*

Office of the Dean: *Robert Burns, circulation manager; David L. Gustner, business manager; Alexis L. Salisz, manager, technical services; Bernard L. Toutant, administrative assistant*

Professors: *Suzanne O. Frankie, George L. Gardiner, Eileen E. Hitchingham*

Associate professors: *Indra M. David, Robert G. Gaylor, Janet A. Krompart, Mildred H. Merz*

Assistant professors: *Sharon Bostick, William Cramer, Linda L. Hildebrand, Frank Lepkowski, Richard L. Pettengill, Ann M. Pogany, Daniel F. Ring, Kristine S. Salomon*

Library facilities

Most university library materials and services are housed in Kresge Library. Magazines are on the third level, circulating books on the second level, reference works and major library services on the main level, and microforms and government documents on the lower level.

The Instructional Technology Center, located in Varner Hall, provides media services for instructional films and designs and produces programs ranging from slide presentations to audio-visual presentations requiring a television studio. In addition, the Performing Arts Library (also located in Varner) houses a special collection of books, journals, acting editions of plays, music collection scores and recordings.

Library collections

The University Library collection of 1,229,832 pieces of library material includes 715,710 microforms, 9,998 records and phonotapes, 50,212 periodical volumes and 278,459 cataloged circulating and reference books. Supplementing the collection are extensive unprocessed materials, manuscripts, memorabilia and museum pieces.

Through a $100,000 fund established by Oakland University students in memory of Matilda R. Wilson, the library now has an excellent reference collection. This includes atlases, bibliographies, dictionaries, encyclopedias, indexes, yearbooks and other reference materials. In 1979, with the depletion of the Wilson Fund, Oakland students began to assess themselves voluntarily to continue augmenting the collection.

The library receives some 2,127 paid serial subscriptions. Periodicals and other serials are shelved alphabetically by title on the third floor of the library. Since 1964, the library has been a U.S. Government depository and receives about 60 percent of the depository materials published each year. It also is a depository for Michigan documents. These collections are indexed by the *Monthly Catalog of U.S. Government Publications* and *Michigan Documents*.

The following special collections are included in the library's holdings:

William Springer Collection of Lincolniana and Civil War Materials (secondary source materials)

Hicks Women in Literature Collection (several hundred volumes written by or about women in the 17th-20th centuries)

James Folklore Collection (550 folklore monographs, some very rare)

Anglo-Irish Collection (rare monographs, journals, literary works in original typescripts, signed poems and reviews, and original letters to and from literary figures)

Billie Sunday Farnum Collection (papers from Farnum's terms in Congress and other public and political offices and as Michigan auditor general)

Alternative (Underground) Press Collection (one of the largest in existence; focuses on the Midwest)

University Archives Collection (materials of historical or legal significance to Oakland University)

Faculty Publications Collection (monographs written by Oakland faculty members)

Library services

Periodicals are arranged alphabetically on shelves and are not cataloged. Most other library materials are classified under the Library of Congress system and indexed through the public card catalog. The reserved book collection, housed in the circulation unit, is a collection of materials that faculty members have reserved for use by specific classes.

Reference librarians help students find materials and use the library. Bibliographic instruction and data-base services supplement these traditional reference services. As part of some regular credit courses, teaching and library faculty members collaborate on lectures and demonstrations on library usage. The library's on-line literature search service aids in retrieval of citations of published articles in education, engineering, medicine, psychology and natural and social sciences.

Through interlibrary lending, members of the university community may obtain materials that are unavailable in the university library. Interloan systems share books, periodicals and newspaper articles, theses and dissertations, films and documents on microform, music scores and research papers.

Office of Graduate Study

Dean: *George Dahlgren*

Office of the Dean: *Elizabeth L. Conner, assistant to the dean*

Course offerings and programs of study at the graduate level constitute a major Oakland University enterprise. Most schools and departments offer some form of graduate work leading to advanced degrees.

All of the graduate programs have their philosophical underpinning in the university's role and mission statement. Through them, the intellectual and educational needs of students are served in relation to specific careers; cultural heritage is preserved and extended; and new knowledge is produced that is directed toward the extension of frontiers and the solution of problems and issues that confront society as a whole. Programmatic balance is sought to assist in the achievement of these varied outcomes. Students are assumed to be full partners in the process of program implementation. Through this partnership, the goals and purposes of graduate education are fulfilled.

Details of the programs and regulations that govern graduate work appear in the *Oakland University Graduate Catalog.* Copies of the catalog are available from the University Bookcenter. Prospective students should also consult the school or department in which they wish to study.

Graduate degree programs

Doctor of Philosophy: biomedical sciences (cellular biology of aging, health and environmental chemistry, medical physics), reading, systems engineering

Education Specialist

Master of Arts: counseling, English, history, linguistics, sociology

Master of Business Administration

Master of Public Administration

Master of Science: applied mathematics, applied statistics, biology, chemistry, computer and information science, electrical and computer engineering, engineering management, exercise science, mechanical engineering, nursing, physics, systems and industrial engineering

Master of Arts in Teaching: curriculum, instruction and leadership, early childhood education, English, mathematics, reading, special education

COLLEGE OF ARTS AND SCIENCES

Dean: *Brian P. Copenhaver*

Office of the Dean: *Sheldon Appleton, associate dean; Isaac Eliezer, associate dean; Brian F. Murphy, director of the Honors College; Thomas Kirchner, administrator for college services; Ruby E. Rhodes, administrator for college services; Rosemary Robinson, advising coordinator; Barbara McCrory, academic adviser; Janice Elvekrog, administrative assistant*

The College of Arts and Sciences offers instruction leading to the Bachelor of Arts, Bachelor of Music, Bachelor of Science, Master of Arts, Master of Music, Master of Science and Doctor of Philosophy degrees. In conjunction with the School of Human and Educational Services, it offers instruction leading to the Master of Arts in Teaching degree.

Requirements for Bachelor of Arts and Bachelor of Science Degrees

General requirements

Each student must:

1. Complete at least 124 credits; the Bachelor of Music degree and Bachelor of Science degree in environmental health require completion of 128 credits. No more than 8 credits in physical education will count toward a degree in the College of Arts and Sciences except for students completing a secondary teaching minor in physical education, who are allowed up to 20 credits in physical education.
2. Complete at least 32 of these credits at Oakland University, of which at least 16 credits must be in the student's elected major.
3. Complete at least 32 credits in courses at the 300 level or above.
4. Complete the last 8 credits (to complete baccalaureate requirements) at Oakland University.
5. Earn a cumulative grade point average of at least 2.00 in courses taken at Oakland University and in the major(s) and any elective minor(s).
6. Obtain certification of writing proficiency, as described on page 25.
7. Complete the university's general education requirement, as described on pages 25-28.
8. Complete the college distribution requirement described below.
9. Be in substantial compliance with all legal curricular requirements.

College distribution requirements

In addition to completing the university-wide general education requirements, students seeking the Bachelor of Arts degree must take 16 additional credits*, distributed as indicated in four of the six areas listed below. Students seeking the Bachelor of Science degree need take only 12 additional credits* in three of the six areas listed below.

Candidates for the Bachelor of Music degree must take 4 credits in each of three different distribution areas. With the approval of the Department of Music, Theatre and Dance, however, a student may substitute a non-music course from the university general education arts category for a course in one of the other areas comprising the college distribution requirements. None of these requirements may be met by independent study courses, internships or teaching methods courses. Courses in the major may be applied toward these requirements, except as noted in 4. and "Special provisions," concerning transfer students, below.

1. Foreign language: 4 credits in a modern foreign language numbered 115 or higher. (Note: 4 credits in modern language numbered 115 or higher may be used to satisfy two requirements

at once: the university-wide general education requirements and part of the college distribution requirements. Thus, Bachelor of Arts students able to place into and complete a foreign language course at the 115 level or higher will need to take only 12 — instead of 16 — additional credits. Bachelor of Science students will only need to take 8 — instead of 12 — additional credits.)

2. Arts and literature: An additional 4 credits from either the university general education field category list in arts and literature (see page 26); or art or art history, cinema, dance, English, music or theatre at the 300 level or higher, except for writing courses (ENG 308, 309, 310, 380, 382, 399 and 410); or literature courses at the 300 level or higher in a modern foreign language.
3. Civilization: An additional 4 credits from either history, philosophy or international studies courses listed in the university general education field category list in Western civilization or international studies (see page 27); or history or philosophy courses at the 300 level or higher.
4. Social sciences: An additional 4 credits in anthropology, economics, political science, psychology or sociology from either the university general education field category list in social science (see page 27 of this catalog); or courses at the 300 level or higher in any of these disciplines or linguistics course ALS 334, 335, 373, 374, 375 or 376. (Majors in one of the social science disciplines must take these credits in a different social science discipline.)
5. Mathematics: An additional 4 credits in mathematical sciences (except MTH 100, 111**, 112** or any MTE course)
6. Science: An additional 4 credits in biology, chemistry, environmental health or physics.

*See note under "Foreign language."

**See the special information concerning these courses on page 97.

Special provisions

The university's general education requirements and the college's distribution requirements call for a distribution of courses among various fields as well as a total number of credits. Students transferring from other institutions may meet a 4-credit field requirement with an appropriate 3-credit transfer course. Such students, however, must take additional courses from any of the field categories above to bring the total number of credits completed up to the numbers required for their degree: 32 general education credits plus 16 college distribution credits for the Bachelor of Arts; 32 general education credits plus 12 college distribution credits for the Bachelor of Science. (Only 4 credits in foreign language numbered 115 or higher, or a transferred equivalent, may be applied toward both of these requirements; see the "Foreign language" field category above.)

No more than 8 credits in the major discipline and 8 credits in other courses required for the major may be counted toward these credit totals, however, except by students majoring in linguistics, journalism or social studies/secondary education. (Cross-listed courses are considered to be in the department in whose listing the course description is given in full.) Students who have completed the MACRAO Agreement must complete the college distribution requirements in addition to the two courses required to complete the university general education requirements (see pages 25-26).

In addition, the general education requirements are considered to be automatically satisfied by students who have successfully completed the Honors College program.

Academic Advising and Program Planning

All students are responsible for planning their academic programs so as to meet all requirements for the degrees they are pursuing. Students should maintain their own records concerning course work completed, grades received, credits earned and requirements met. To assist students with this responsibility, academic advisers are available in the College of Arts and Sciences' Advising Office and in each academic department. Students are encouraged to utilize

these services since those who neglect to consult with these advisers often risk delay in the awarding of their degrees. They are also encouraged to participate in a graduation check during the term preceding the one of anticipated graduation.

Departmental Major or Independent Major Requirements

Students must fulfill all requirements of their elected majors as described in the departmental entries. Students may also satisfy these requirements by completing an independent major as described below. A cumulative grade point average of 2.00 in the major or independent major is required for graduation.

Majors

The majors offered in or accepted by the College of Arts and Sciences are listed below. For specific requirements see the departmental entries.

Anthropology
Art history
Biology
Chemistry
Chinese language and civilization
Communication arts
Economics
English
Environmental health
French
German
History
International studies
Journalism
Latin American languages and civilizations
Linguistics
Mathematics
Music
Philosophy
Physics
Political science
Psychology
Public administration and public policy
Russian
Social studies (secondary education only)
Sociology
Sociology and anthropology
Spanish

The College of Arts and Sciences offers a secondary teaching major in social studies. Requirements for this major are given on page 177. In addition to the requirements, all secondary education majors must take ED 110, 338, 344, 345, 427, 428 and 455. For descriptions of these courses, see the course listings under the School of Human and Educational Services section of this catalog. The college also offers a Bachelor of Science in Music Education. For specific requirements, see page 115 of this catalog and the "Music Handbook," available from the Department of Music.

There are no college-wide regulations governing admission to major standing or retention in these areas. Each department controls its own procedures in these areas. Students should maintain close contact with faculty advisers in the department in which they wish to major; students who fail to do so risk delay in graduating.

Multiple majors

Students who elect to major in more than one area in the College of Arts and Sciences must satisfy the specific requirements of each of the majors they choose. Such students are single-degree candidates with more than one major and must satisfy the general and specific requirements applicable to the awarding of one degree, either a Bachelor of Arts or Bachelor of Science. Under certain conditions, a student may earn more than one degree. Such students are double-degree candidates. For information on the restrictions that apply to the awarding of more than one degree and the requirements that double-degree candidates must satisfy, please see page 29.

Independent majors

Students interested in academic areas in which no suitable major program is available may petition the college Committee on Instruction for an individually tailored independent major in place of one of the departmental majors listed above. An independent major also may be taken as part of a double-major program in conjunction with a regular departmental major, pro-

vided that no course counted toward completion of the departmental major is also counted toward completion of the independent major. Students will be admitted to the independent major only after completing 32 credits but before completing 90 credits. For the specific requirements of an independent major, consult the College of Arts and Sciences' Advising Office.

Special Instructional Programs of the College

Minors for liberal arts degree programs

Minors are not required by the College of Arts and Sciences for baccalaureate programs, but the college offers a number of liberal arts minors that students may pursue in addition to the required major. A cumulative grade point average of 2.00 is required in courses included in the minor. At least 8 of the credits offered for each minor must be taken at Oakland University. Courses that meet both minor requirements and general education or college distribution requirements may be used to meet both of these requirements. The college offers or accepts the following minors*, described in detail under departmental entries or as indicated below:

Accounting (see page 206)
Advertising (see page 156)
Anthropology
Art history
Biology
Chemistry
Communication arts
Computer science
Dance
Economics
English
Finance (see page 206)
History
Human resources development
International economics
International studies
Journalism (see page 156)
Linguistics
Management
Mathematics
Modern languages
Music
Philosophy
Physics
Political science
Psychology
Quantitative methods (management)
Science (see page 190)
Sociology
Studio art
Theatre arts

*These minors do not count toward an elementary or a secondary teaching credential.

Secondary teaching minors

Secondary teaching minors are not required by the College of Arts and Sciences for baccalaureate programs, but are required of prospective secondary school teachers seeking certification by the Michigan Department of Education.

A cumulative grade point average of 2.00 is required in courses included in the minor. At least 8 of the credits offered for each minor must be taken at Oakland University. Courses taken to satisfy general education or college distribution requirements may also be used to meet those for the teaching minor. Only programs entitled "Secondary Teaching Minor" will be certified by the Michigan Department of Education. The college offers the following secondary teaching minors, which are described in detail under departmental entries:

Biology
Chemistry
English
History
Mathematics
Modern languages
Music
Physics
Science
Speech
Political science*
Psychology*
Sociology*

*for social studies majors only

Interdepartmental programs/concentrations

The College of Arts and Sciences offers a number of interdepartmental programs and concentrations that students may pursue in addition to a departmental major. Concentrations are elective and are not required for graduation. Unlike the elective liberal arts minor, no specific grade point average is required for completion of any given concentration. A course may be counted toward more than one major, minor or concentration only when the department or program coordinator responsible for each program involved approves.

As a general rule, no more than 8 credits of course work may be used toward more than one program, but exceptions to this rule may be allowed with the written approval of the program coordinators. Courses that meet both concentration requirements and general education or college distribution requirements may be used to satisfy both of these requirements.

The college offers the following interdepartmental programs and concentrations, which are described in detail on pages 177-190 of this catalog:

American studies
Applied statistics
Archaeology
Energy studies
Environmental studies
Film aesthetics and history
Folklore and popular culture
Gerontology
Michigan studies
Prelaw studies
Preprofessional studies in medicine, dentistry and optometry
Religious studies
Social justice and corrections
Social services
Social studies
Urban studies
Women's studies

Interschool M.B.A. program

For superior undergraduate students in any major in the college, the School of Business Administration offers the Master of Business Administration (M.B.A.) degree. This is a two-year professional program in management designed for students with non-business undergraduate majors. Undergraduate business or management majors may take a variation of the standard M.B.A. program.

Arts and sciences undergraduates working on a major other than one of the management areas may obtain both the undergraduate degree and M.B.A. in an accelerated program. To be eligible, students should have a grade point average in the top 15 percent of their class. Students should apply to the School of Business Administration for admission to this accelerated program in their junior year (see the *Oakland University Graduate Catalog*).

Field experience program

The College of Arts and Sciences offers, by means of departmental courses numbered 399, opportunities for students to obtain academic credit related to concurrent field work experience. Emphasis is on the academic aspect of this program, which incorporates student performance in the field. Students are required to make an intellectual analysis of the field experience based on their academic program.

The 399 courses carry 4 credits each, are numerically graded and may not be repeated for additional credit. Students wishing to participate in this program are expected to be at the junior or senior level, and must have completed at least 16 credits in the department in whose 399 course they wish to enroll. Individual departments may have specific prerequisites in addition to these. For details, consult one of the departments participating in this program: art and art history, biological sciences, English, history, modern languages and literatures, philosophy, psychology and sociology and anthropology.

Cooperative education

Students majoring in one of the arts and sciences disciplines have the opportunity to participate in a cooperative education (co-op) program. Co-op offers students the chance to obtain work experience directly related to their chosen careers or fields of study. For example, chemistry majors may work in chemistry laboratories, prelaw students in law offices and journalism and communications majors in various writing jobs. By involving students in an on-the-job experience, co-op helps them make decision about their future careers. And in addition to augmenting their classroom work, it helps them defray the cost of college.

To participate in the co-op program, students should have junior or senior standing, a 3.00 grade point average and the approval of their faculty adviser. Students must agree to accept employment for at least two semesters and should not expect to work only during the spring and summer terms. Interested students should contact the Cooperative Education Office.

DEPARTMENT OF ART AND ART HISTORY

Chairperson: *John B. Cameron*

Professors: *Carl F. Barnes, Jr. (art history and archaeology), John L. Beardman (studio art), John B. Cameron (art history)*

Associate professor: *Charlotte V. Stokes (art history)*

Assistant professors: *Bonnie F. Abiko (art history), Janice G. Schimmelman (art history)*

Lecturers: *Lousia Ngote (art history), Paul Webster (studio art)*

Chief adviser: *Janice G. Schimmelman*

Art history is an ideal curriculum for students who wish to investigate a broad range of humanistic disciplines. The visual arts are studied in their historical context in terms of the cultural, economic, philosophical, political, religious, social and technological conditions that determine content and form.

The art history program provides both majors and non-majors with a thorough introduction to the visual arts of various cultures throughout history. It is strengthened by visiting lecturers in special fields, group visits to the Detroit Institute of Arts and to other public and private art collections in metropolitan Detroit, and study of special exhibits at Oakland University's Meadow Brook Art Gallery. The art and art history program cooperates with concentrations in American studies, archaeology, area studies, Michigan studies and women's studies.

The department offers a program of study leading to the Bachelor of Arts degree with a major in art history. This program is intended for students who wish directed study in art history and for students who are contemplating a career in one of the fields in which art history is a basis — aesthetics and criticism, archaeology, architecture, college teaching, special library collections, art publishing, fine arts, conservation, historic preservation, museum curatorship and urban design.

Requirements for the liberal arts major in art history

A total of 40 credits in art history courses, distributed as follows, are required to complete the major in art history:

1. AH 100 and 101
2. 20 credits from the following (at least one course must be selected from each category except non-Western, from which category two courses must be selected):
   Non-Western: AH 300, 301, 303, 305, 306, 307, 308 and 320
   Ancient/medieval: AH 312, 314, 322 and 326
   Renaissance/baroque: AH 330, 334 and 340
   American/modern: AH 350, 363, 364, 365 and 367
3. 8 elective credits from AH courses
4. One AH course at the 400 level
5. One studio art course (4 credits) as a cognate to the major

Department faculty will not recommend for graduate study students who have not completed, in addition to the above requirements, AH 480 and either 490 or 491, as well as at least one year of college-level German or French.

Departmental honors in art history

Students wishing to be considered for departmental honors may petition for honors or be recommended by a department faculty member. In awarding honors, the faculty takes into

consideration grade point average (GPA), citizenship within the department, classroom performance and/or scholarship as evidenced by a significant research paper.

There is no minimum grade point average required for honors, but consideration will normally be given only to students who have completed 20 credits of art history study at Oakland University with a GPA of 3.60 or higher. If a research paper is to be submitted for consideration, it should be submitted at least three weeks prior to the end of the semester in which the student intends to graduate.

Requirements for the liberal arts minor in art history

A total of 20 credits in art history courses, to be distributed as follows, is required:

1. AH 100 and 101
2. A total of 8 credits, 4 each from any two of the following categories:
   Ancient/medieval: AH 312, 314, 322, 326
   Renaissance/baroque: AH 330, 334, 340
   American/modern: AH 350, 363, 364, 365, 367
3. 4 elective credits from AH courses

Requirements for the liberal arts minor in studio art

A total of 20 credits in studio art courses, to be distributed as follows:

1. SA 100 and one of the following: SA 101, SA 107
2. One course from the following: SA 200, SA 209, SA 214
3. Two courses from the following: SA 307, SA 309, SA 314

Course Offerings

ART HISTORY

AH 100 Introduction to Western Art I (4)
History and analysis of the visual arts of western Europe from prehistoric times until the Renaissance, ca. A.D. 1400. *Satisfies the university general education requirement in arts.*

AH 101 Introduction to Western Art II (4)
History and analysis of the visual arts of western Europe from the Renaissance, ca. A.D. 1400 to the present. *Satisfies the university general education requirement in arts.*

AH 208 Afro-American Art (4)
The arts of black Americans of African descent produced in the United States since ca. A.D. 1700.

AH 300 Chinese Art (4)
The development of architecture, sculpture and painting in China from the Shang Dynasty, ca. 1550 B.C. until the founding of the Chinese Republic, A.D. 1912.

AH 301 Japanese Art (4)
The development of architecture, sculpture and painting in Japan from the fifth to the nineteenth century A.D.

AH 303 Buddhist Art (4)
Stylistic, iconographical, sectarian and historical aspects of Buddhist architecture, sculpture and painting in Asia from earliest examples in India through Zen painting in Japan.

AH 305 African Art (4)
The arts of the indigenous peoples of West, Central and East Africa. May be offered concurrently at the graduate level as AH 505.

AH 306 Oceanic Art
The arts of the indigenous peoples of the South Pacific Islands and Australia.

AH 307 Pre-Columbian Art (4)
The arts of the Indians of Mexico, Central America and South America prior to the Spanish Conquest.

AH 308 North American Indian Art (4)
The arts of the Eskimo and the Northwest Coast, United States and Canadian Indians.

AH 312 Greek Art (4)
The development of architecture, sculpture and painting in the pre-Hellenic, Aegean civilizations and in Classical Greece from ca. 3000 B.C. until the period of Roman domination in the Mediterranean area, ca. 100 B.C.
Prerequisite: AH 100.

AH 314 Roman Art (4)
The development of architecture, sculpture and painting in Etruria and in the Roman Republic and Empire from ca. 600 B.C. until the relocation of the capital at Constantinople in A.D. 330.
Prerequisite: AH 100.

AH 320 Islamic Art (4)
The development of architecture and painting in Islam from the seventh to the eighteenth century A.D. with reference to the countries of the Fertile Crescent, North Africa, Arab and Moorish Spain, Egypt, Persia, Turkey and Muslim India.

AH 322 Early Medieval, Byzantine, and Romanesque Art (4)
The development of architecture, sculpture and painting in Christian Europe from A.D. 330 through the apex of monasticism, ca. A.D. 1150.
Prerequisite: AH 100.

AH 326 Gothic Art (4)
The development of architecture, sculpture and painting in western Europe from ca. A.D. 1150 through the period of the Crusades and medieval urbanism, ca. A.D. 1400.
Prerequisite: AH 100.

AH 330 Renaissance Art in Italy (4)
The development of architecture, sculpture and painting in Italy during the Renaissance from A.D. 1300 to 1600.
Prerequisite: AH 101.

AH 334 Renaissance Art in Northern Europe (4)
The development of architecture, sculpture and painting in northern Europe from 1400-1600.
Prerequisite: AH 101.

AH 340 Baroque Art (4)
The development of architecture, sculpture and painting in western Europe and colonial South America during the period of absolute monarchy and the Counter-Reformation from A.D. 1600 to 1800.
Prerequisite: AH 101.

AH 350 American Art (4)
The development of architecture, sculpture and painting in the United States from the American Revolution, A.D. 1776, until World War I, A.D. 1914.
Prerequisite: AH 101.

AH 351 Women in Art (4)
The traditional image of woman in art and the contribution of women artists in Europe and the United States from the Middle Ages until the present. Identical with WS 301, Special Topics in Women's Studies: Women in Art.
Prerequisite: AH 101.

AH 355 Michigan Architecture (4)
The development of the commercial, domestic, industrial, public and religious architecture of Michigan from the period of early settlement to the present. May be offered concurrently at the graduate level as AH 555.

AH 360 History of Automobile Design (4)
The effects of aesthetic, social and technological change on automobile design from the nineteenth century A.D. to the present.

AH 363 Modern Architecture and Urban Design (4)
The development of architecture and urban design in Europe and the United States from the Industrial Revolution, ca. A.D. 1750, to the present.
Prerequisite: AH 101.

AH 364 Nineteenth-Century Art (4)
The development of sculpture, painting and printmaking in the western world from the French Revolution to A.D. 1900.
Prerequisite: AH 101.

AH 365 Twentieth-Century Art (4)
The development of sculpture, painting and related media in the western world from A.D. 1900 to the present.
Prerequisite: AH 101.

AH 366 History of Photography (4)
The development of still photography as an art and its relationship to other visual arts since ca. A.D. 1830.

AH 367 Film and the Visual Arts (4)
The relationship between films and various plastic arts such as still photography, sculpture and painting, as they reflect some twentieth-century artistic movements (op art, surrealism, cubism, expressionism, etc.)

AH 370 The Graphic Arts (4)
The graphic arts in Europe and America from ca. 1450 to ca. 1900, including printmaking techniques, collecting and conservation. Students will work with original prints.
Prerequisite: AH 100 and AH 101.

AH 380 Museology and Patronage (4)
The study of modern museums (collections, conservation, organization), historical societies, corporate patronage and private collecting. The course format will include illustrated lectures and field trips.
Prerequisite: 16 credits in art history of which at least 8 must be at the 300-400 level.

AH 390 Topics in Art History (4)
Specific topics in art history for which no regular course offerings exist. Topic, instructor and prerequisite will be announced before each offering.
Prerequisite: Permission of instructor.

AH 391 Readings in Art History (4)
Specific readings projects in art history, art criticism, connoisseurship and conservation. May be repeated in a subsequent semester under a different instructor for a total of 4 credits.
Prerequisite: 16 credits in art history of which at least 8 must be at the 300-400 level; and permission of instructor.

AH 399 Field Experience in Art History (4)
Field experience in art history under faculty supervision. An academic project which incorporates student performance in an occupational setting. May not be repeated for credit or taken by students who have received credit for SA 399.
Prerequisite: 16 credits in art history, of which at least 8 must be at the 300-400 level; and permission of instructor.

AH 480 The Bibliography and Methodology of Art History (4)
The history and criticism of art as disciplines from classical antiquity to the present, with emphasis on the principal approaches to the study of art since A.D. 1500. Students will read selections from the major contributors to these disciplines.
Prerequisite: 12 credits of art history.

AH 490 Problems in Art History (4 or 8)
Seminar in specific subject areas of, or approaches to, art history. May be taken in different semesters under different instructors for a total of 8 credits or, with permission of instructor and department chairperson, may be taken in one semester for a total of 8 credits.
Prerequisite: 12 credits of art history.

AH 491 Directed Research in Art History (4 or 8)
Directed individual research for advanced art history majors.
Prerequisite: Permission of instructor.

STUDIO ART

The departmental program of study leading to the Bachelor of Arts degree with a liberal arts major in studio art has been suspended, and no new candidates for this major will be accepted. The department will continue to offer courses in studio art, as well as the liberal arts minor in studio art. Studio art courses are offered as general electives for all students and as a complement to the art history program.

SA 100 Drawing, Painting and Visual Thinking (4)
Exploration of the possibilities of translating observations into visual structures, including drawings from nature. Emphasis is on process rather than product. Theory and historical background will be given.

SA 101 Introduction to Sculpture (4)
Exploration of the methods and theories used in creating three dimensional structures.

SA 107 Drawing Skills I (4)
Introduction to the tools and methods of drawing as a means to observe the physical world accurately and to develop visual ideas more clearly. Emphasis is on skill development.

SA 200 Basic Studio I (4)
Continuation of SA 100 with more emphasis on conceptualization. Continues to deal with the process of creating structures, but the product will be more important than in SA 100.
Prerequisite: SA 100 or SA 101 or SA 107.

SA 209 Painting I (4)
Introduction to painting, its technique, history and expressive possibilities. Includes the making of and experimentation with paint.
Prerequisite: SA 100 or SA 101 or SA 107.

SA 214 Sculpture II (4)
Continuation of SA 101.
Prerequisite: SA 100 or SA 101 or SA 107.

SA 215 Weaving and Tapestry (4)
Basic weaving techniques involving loom-woven fabrications.

SA 266 Photography
Basic black and white picture taking, film processing and darkroom procedure. Concepts and techniques of photography.

SA 307 Drawing Skills II (4)
Continuation of SA 107. Emphasis is on translation of visual ideas from drawing into other media. May be taken in different semesters for a total of 8 credits.
Prerequisite: SA 100 or SA 101 or SA 107.

SA 309 Intermediate Painting (4)
Treats the problem-solving possibilities of painting, the expressive potential unique to the individual, and the relationship of these factors to contemporary issues.
Prerequisite: SA 100 or SA 101 or SA 107.

SA 314 Intermediate Sculpture (4)
Treats the problem-solving possibilities of sculpture, the expressive potential unique to the individual, and the relationship of these factors to contemporary issues.
Prerequisite: SA 100 or SA 101 or SA 107.

SA 321 Silk-Screen Printing (4)
Multi-color silk-screen printing, methodology and techniques.
Prerequisite: SA 100 or SA 101 or SA 107.

SA 322 Photo Silk-Screen (4)
Methodology and techniques of photo silk-screen printing.
Prerequisite: SA 100 or SA 101.

SA 391 Projects in Studio Art (2)
Specific projects in studio art for which no regular offerings exist. Projects, instructor and prequisite will be announced before each offering.
Prerequisite: Permission of instructor.

SA 399 Field Experience in Studio Art (4)
Field experience in studio art under faculty supervision. An academic project which incorporates student performance in an occupational setting. May not be repeated for credit or taken by students who have received credit for AH 399.
Prerequisites: 16 credits in studio art, of which at least 8 must be at the 300 level.

SA 490 Special Problems in Studio Art: Independent Studies (4)
Independent investigation of specific problems in the visual arts including their relationships with other disciplines. May be taken for a maximum of 8 credits.
Prerequisite: Permission of instructor.

DEPARTMENT OF BIOLOGICAL SCIENCES

Chairperson: *Nalin J. Unakar*

Professors: *Francis M. Butterworth, Egbert W. Henry, John R. Reddan, Arun K. Roy, Nalin J. Unakar*

Associate professors: *John D. Cowlishaw, George J. Gamboa, Esther M. Goudsmit, R. Douglas Hunter, Paul A. Ketchum, Charles B. Lindemann, Virinder K. Moudgil, Asish C. Nag*

Assistant professors: *Keith A. Berven, Sheldon R. Gordon, Satish K. Walia*

Adjunct professors: *Clifford V. Harding, M. Dave Poulik, James R. Wells*

Adjunct assistant professor: *Naomi Eliezer*

Consulting professor of biomedical and health sciences: *Julius Rutzky*

The Department of Biological Sciences offers programs of study leading to Bachelor of Arts, Bachelor of Science and Master of Science degrees. The undergraduate programs prepare students for graduate study in the life sciences; laboratory work and research in industries concerned with biological materials; and professional careers in medicine, dentistry, nursing or other allied health areas. This liberal arts program in biology is particularly suited to the needs of premedical students. For information on graduate study within the department, see the *Oakland University Graduate Catalog.*

The department offers a diversified selection of courses and research programs in biochemistry, botany, cell biology, developmental biology, ecology, evolutionary biology, genetics, microbiology, morphology, physiology, plant physiology and zoology. Students select courses that suit their goals and interests. With permission, they may elect to participate in the research laboratories of individual faculty members, for which they may receive course credit (BIO 490). In the past, many such students have appeared as co-authors on scientific publications as a result of the work in which they participated. Such opportunities are of particular value to students preparing for graduate study or research positions. Since modern biology requires physicochemical insight, training in chemistry, physics and mathematics is also required.

Admission to major standing

To be eligible for a major in biology, students must be admitted to major standing by the Department of Biological Sciences at least three semesters before graduation. This procedure ensures that an appropriate program of study is completed by graduation. Students may be admitted to major standing after filing a satisfactory curriculum plan and completion of one year of introductory biology plus two other BIO courses, one year of general chemistry and mathematics through MTH 141.

Requirements for the liberal arts major in biology, B.A. program

This curriculum is designed for students intending to incorporate a biology major into a broader liberal arts program in pursuit of careers in technical fields or business or post-graduate study. Students in the B.A. curriculum who wish to apply to medical or dental schools are advised to complete the concentration in preprofessional studies (see page 184 of this catalog). Students interested in a secondary teaching major in the biological sciences should consult the chairperson or the chief academic adviser of the department.

Forty credits in biology (BIO 190 and above) are required, including at least seven lecture courses. These must include BIO 190, 195, 200 and one course from three of the following areas:

1. Physiology (BIO 207, 321 or 333)
2. Biochemistry (BIO 325)
3. Morphology (BIO 205, 305, 313 or 323)
4. Genetics (BIO 341 or 387)
5. Ecology (BIO 301)

Students must also, in consultation with their biology adviser, select at least one course in organismic biology (botany, BIO 303, 311, 327 or 373; zoology, BIO 317 or 353; or microbiology, BIO 319) and at least one 400-level course other than BIO 497. Corresponding lecture and lab courses should normally be taken simultaneously. In addition, 14 credits of chemistry (CHM 144-145, 149, 203 or 234 or 201) and 10 credits of physics (two semesters of general physics and lab) and mathematics through MTH 141 plus one of the following — MTH 122, MTH 154, STA 225, STA 226 — are required. One semester of computer programming (CSE 130) is recommended as an elective.

Requirements for the major in biology, B.S. program

This curriculum is designed for students who wish to pursue a career in the sciences, including medicine and health-related fields.

Forty credits in biology (BIO 190 and above) are required, including at least seven lecture courses and a minimum of four BIO laboratory courses. These must include BIO 190, 195 and 200, and one course from three of the following areas:

1. Physiology (BIO 207, 321 or 333)
2. Biochemistry (BIO 325)
3. Morphology (BIO 205, 305, 313 or 323)
4. Genetics (BIO 341 or 387)
5. Ecology (BIO 301)

Students must also, in consultation with their biology adviser, select at least one course in organismic biology (botany, BIO 303, 311, 327 or 373; zoology BIO 317 or 353; or microbiology BIO 319) and at least one 400-level course other than BIO 497. Corresponding lecture and lab courses should normally be taken simultaneously. In addition, two years of chemistry (CHM 144-145, 149, 234-235 or 203-204, and 209) and one year of physics (PHY 101-102, 158; or 151-152 and 158 depending on MTH option) are required. Mathematics is required through MTH 141 plus one of the following options: MTH 154 and 155; STA 226 and either 322, 323 or 324; and MTH 122 and either STA 225 or 226.

One semester of computer programming (CSE 130) is recommended as an elective. Finally, in addition to the formal course requirements, the student must complete a senior paper based either on research performed under BIO 490 or literature search of a research-oriented topic taken as BIO 405.

Requirements for departmental honors in biology

Departmental honors may be granted to students who have been nominated by a faculty member on the basis of high academic achievement and excellence in either independent research or teaching assistance.

The specific requirements are:

1. 3.20 grade point average (GPA) minimum overall and 3.50 GPA minimum in BIO courses
2. At least one 400-level BIO lecture course (BIO 405, 455, 490 and 497 do not qualify)
3. Excellence in one of the following two service roles:
   a. Assisting in teaching a laboratory course(s) — either for pay or credit
   b. Performing independent laboratory study or serving as a laboratory research assistant

Requirements for a modified major in biology (B.S.) with a specialization in anatomy

Adviser: *Asish C. Nag*

Students should elect this specialization in their sophomore year. Biology courses required for the anatomy specialization are: BIO 205, 206, 305, 306, 317, 323, 324, 429, 430, 445, 446 and 460. The selection of all courses should be planned by consultation with the adviser.

Requirements for a modified major in biology (B.S.) with a specialization in microbiology

Adviser: *Paul A. Ketchum*

Students may elect this specialization in their sophomore or junior year. Biology courses required for the microbiology specialization are: BIO 319, 320, 421, 422, 433 and 434. The selection of all courses should be planned in consultation with the adviser.

Requirements for the modified major in biology with a concentration in applied statistics

Adviser: *Keith A. Berven*

This concentration is open to students pursuing either a Bachelor of Arts or a Bachelor of Science degree in biology. Students should elect this concentration in their sophomore year. Required courses are STA 226, 322 and either 323 or 324, as well as BIO 490 (4 credits).

Concentration in preprofessional studies in medicine, dentistry and optometry

Adviser: *Egbert W. Henry*

The Bachelor of Science degree with a major in biology provides students with all the requirements for a concentration in preprofessional studies; however, refer to page 184 for suggestions regarding course selection. Students in the Bachelor of Arts degree program will need two semesters of organic chemistry and laboratory in addition to their other science requirements.

Biochemistry program

In cooperation with the Department of Chemistry, the Department of Biology offers a Bachelor of Science degree program with a major in biochemistry (see page 171).

Requirements for the liberal arts minor in biology

Students in other departments who wish to minor in biology must take a minimum of 20 credits in biology, including BIO 190, 195 and 200. At least 8 credits must be taken in courses numbered 301 or above. Students majoring in other life science areas should read the restrictions on dual use of courses to satisfy both major and minor requirements as noted on page 44.

Requirements for the secondary teaching minor in biology

Twenty credits in biology (from BIO 190 and above) are required for the secondary teaching minor in biology.

Course Offerings

The following courses are designed particularly for non-science majors and are not counted toward major or minor requirements.

BIO 104 Human Biology (4)
Introduction to human biology with emphasis on human anatomy and physiology. Topics include cell biology, skeletal, muscular, digestive, cardiovascular, neural, hormonal and reproductive systems. *Satisfies the university general education requirement in natural science and technology.*

BIO 110 Life on Earth (4)
A survey course on the history of nature. The evolutionary emergence of plant and animal life from unicellular to multicellular organisms and eventually to humans is presented through lectures, text readings and films. *Satisfies the university general education requirement in natural science and technology.*

BIO 300 Biology and Society (4)
The major concepts of modern biology which would serve as a foundation for the well-educated non-scientist, including evolutionary biology, molecular and cellular biology, genetic and medical interventions, the biological bases of behavior and social organization, and the effects of biological and chemical pollutants. *Satisfies the university general education requirement in natural science and technology.*

The following courses are designed particularly for the biology major and minor and for other majors in the sciences.

BIO 190 Biology (4)
Introduction to the structure and function of plants and animals; nutrient acquisition, gas exchange, internal transport, excretion, chemical and nervous control, reproduction, behavior, ecology, evolution, a synopsis of the major phyla.
Offered fall and winter semesters. *Satisfies the university general education requirement in natural science and technology.*

BIO 195 Biology Laboratory (1)
Laboratory and field experience emphasizing scientific method, scientific writing, Mendelian genetics, vertebrate anatomy and animal and plant diversity. To accompany BIO 190 or 200.

BIO 200 Biology (4)
Cell ultrastructure, enzymology, metabolism, genetics, cell division. A year of high school chemistry and/or CHM 140 is strongly recommended. May be taken before BIO 190. Offered fall and winter semesters. *Satisfies the university general education requirement in natural science and technology.*

BIO 205 Human Anatomy (4)
The integration of organs into systems and systems into the organism. Selected aspects of developmental, comparative and microanatomy also will be discussed. Relevant to students in health sciences, biological science and liberal arts studies.
Prerequisite: BIO 200.

BIO 207 Human Physiology (4)
A detailed study of general physiological principles and mechanisms with emphasis on systemic physiology. Normal physiology of individual organ systems will be explored, with stress on the role each plays in the human homeostatic balance.
Prerequisite: BIO 200.

BIO 208 Human Physiology Laboratory (1)
To accompany BIO 207.

BIO 250 Biology of Aging (4)
Introduction to the phenomenon of aging at both cellular and organ levels. Topics include roles of nutrition, exercise, drugs, diseases, hormones and theories of aging. Offered winter semester alternate years.
Prerequisite: One semester of introductory biology.

BIO 300 Biology and Society (4)
See description above under nonmajor courses.

BIO 301 Ecology (5)
Basic ecological concepts, energy and materials flow, growth and regulation of populations, community interactions, chemical ecology and environmental biology. Includes laboratory experience. Offered fall semester.
Prerequisite: BIO 190, 195, 200.

BIO 303 Field Biology (4)
An ecologic and taxonomic study of the flora and fauna of Oakland University's setting. Aims include competence in use of illustrated handbooks and keys, and skills in collecting, preserving and identifying.
Prerequisite: BIO 190, 195.

BIO 305 Histology (2 or 4)
The microscopic anatomy and histochemistry of vertebrate tissues and organs in relation to tissue function.
Prerequisite: For a 4-credit course BIO 190, 200. For 2-credit course BIO 190, 200 and major standing in physical therapy.

BIO 306 Histology Laboratory (2)
To accompany BIO 305.

BIO 307 Introduction to Medical Microbiology (4)
Introduction to the biology of microorganisms emphasizing the infectious diseases they cause and their control. Bacterial, mycotic, protozoan, viral infections; immunology; epidemiology; pathogenic mechanisms; chemotherapy; microbial genetics; microbial growth; microbial physiology. Required of students in the nursing program. Not open to students who have taken BIO 319.
Prerequisite: BIO 200.

BIO 311 Botany (4)
A course in plant biology including topics on gross and microscopic structure, physiological processes, reproduction and development. Diversity within the plant kingdom and evolutionary history are also discussed.
Prerequisite: BIO 190, 195, 200.

BIO 312 Botany Laboratory (1)
To accompany BIO 311.

BIO 313 Plant Morphology (4)
Structure, reproductive mechanisms and evolutionary relationships of the plant groups. Ultrastructure of cells and their walls. Preparation of plant materials for microscopic examination. Cytochemistry and histogenesis of selected specimens.
Prerequisite: BIO 190, 195, 200.

BIO 314 Plant Morphology Laboratory (1)
To accompany BIO 313.

BIO 317 Vertebrate Zoology (5)
A comparative study: gross and histological anatomy, taxonomy, unique physiological adaptations to habitats, evolution and paleontology. Includes laboratory experience.
Prerequisite: BIO 190, 200.

BIO 319 General Microbiology (4)
Microbial metabolism, growth, genetics, molecular biology, genetic engineering, classification, aseptic techniques, host-parasite relationships, a survey of human bacterial and viral pathogens. The impact of nonpathogenic microbes on natural processes is emphasized. Not open to students who have taken BIO 307.
Prerequisite: BIO 200, CHM 145.

BIO 320 General Microbiology Laboratory (1)
The techniques for growing, isolating, handling and identifying microbes.
To accompany BIO 319.

BIO 321 Physiology (4)
A detailed study of physiological principles; the internal environment, bioenergetics, transport, osmoregulation, respiration, conduction, contraction and circulation.
Prerequisite: BIO 190, 200.

BIO 322 Anatomy and Physiology Laboratory (1)
A detailed study of vertebrate anatomy and physiology. To accompany BIO 321.

BIO 323 Developmental Biology (4)
Topics include: gametogenesis, fertilization, morphogenesis, differentiation, organogenesis, regeneration. Each topic is examined from the morphological to the molecular level.
Prerequisite: BIO 190, 200. Highly recommended: BIO 324.

BIO 324 Developmental Biology Laboratory (1)
A series of observations and experimental exercises on a variety of organisms designed to expose the student to basic patterns of development, embryonic structures and techniques to analyze developmental processes.
Corequisite: BIO 323.

BIO 325 Introductory Biochemistry (4)
The principles and techniques of molecular biology which are basic to discussions in the intermediate and advanced courses. Topics include: structure and function of macromolecules, cellular organization, biological energy, molecular genetics.
Prerequisite: BIO 200 and one year of general chemistry. CHM 201 or 203 recommended.

BIO 326 Introductory Biochemistry Laboratory (1)
To accompany BIO 325. Enzyme purification and kinetics, qualitative and quantitative analysis of biomolecules. Extraction of DNA from E. coli.
Prerequisite: At least 2 BIO lab courses; organic chemistry highly recommended.

BIO 327 Woody Plants — Biology and Ecology (4)
The study of trees and shrubs; their identification, biology and ecology, the importance of woody plants to man.
Prerequisite: BIO 190 or 200. Corequisite: BIO 328.

BIO 328 Woody Plants Laboratory (1)
Laboratories stress local field experience in the ecology, natural history and identification of native woody plants.
Corequisite: BIO 327.

BIO 333 Plant Physiology (4)
Hormonal relationships, inorganic nutrition, water relations, metabolism, photosynthesis and tropisms.
Prerequisite: BIO 190, 200.

BIO 334 Plant Physiology Laboratory (1)
Corequisite: BIO 333.

BIO 341 Genetics (4)
The physical and chemical basis of inheritance. Selected topics in human genetics, microbial genetics, biochemical genetics and cytogenetics. Two lab options are available; see BIO 342 and 345. Offered winter semester.
Prerequisite: BIO 190, 200. BIO 325 recommended.

BIO 342 Genetics Laboratory (1)
A series of short experiments to demonstrate basic genetic principles; to be offered with BIO 341.

BIO 345 Experimental Genetics (2)
An innovative approach to learning genetics. The student working on an individual research project not only will learn some basic principles of genetics but also will obtain preliminary experience in biological research. To be offered with BIO 341.

BIO 351 Neurobiology (4)
Topics include nerve excitation, synaptic transmission, spinal cord functions, cerebral cortical activity, sleep and consciousness, biochemical and pharmacological properties of nerve cells.
Prerequisite: BIO 190, 200. CHM 145.

BIO 353 Animal Behavior (4)
The genetics, physiology, ecology and evolution of animal behavior. Emphasis is on social behavior, especially the behavior of social insects.
Prerequisite: Sophomore standing.

BIO 354 Animal Behavior Laboratory (1)
A field-oriented course to acquaint students with experimental design, quantitative data retrieval and data analysis. A large part of the course will consist of an independent behavioral field study supervised by the instructor.
Prerequisite: Sophomore standing. Corequisite: BIO 353.

BIO 365 Medical Parasitology and Mycology (4)
Animal and mycological parasites of man: clinical manifestations, laboratory methods for identification, life cycles, pathogenesis, epidemiology and control.
Prerequisite: BIO 190 or equivalent.

BIO 373 Field Botany (4)
A local flora course in identifying vascular plants occurring naturally in Michigan. Emphasis is on flowering plants, although ferns and coniferous species are also treated. Includes field trips to representative natural areas in southeast Michigan.
Prerequisite: BIO 190, 200.

BIO 375 Limnology (2)
An introduction to freshwater biology; lake classification, biogeochemical cycles, lake and stream ecology, seasons, flora and fauna, plankton and benthos, lake origins and evolution. Offered every other winter.
Prerequisite: BIO 190, 200.

BIO 377 Marine Biology (2)
Flora and fauna of the shore and open ocean, ocean seasons, tides, food webs, adaptations, feeding, locomotion, community interactions, fisheries biology and aquaculture. Offered every other winter.
Prerequisite: BIO 190, 200.

BIO 381 Gross Human Anatomy (4)
Combined lectures and laboratories primarily for upper-level health science majors. Study of human body systems with emphasis on the musculoskeletal system; morphological correlate of human physiological functions; dissection of cadaver.
Prerequisite: BIO 321 and permission of instructor.

BIO 387 Evolution and Systematics (4)
Exploration of the processes of evolution and their past and current influence on organisms of today. Topics include origin of variability, natural selection, differentiation of populations, speciation, phylogenetic concepts, evolutionary ecology and sociobiology.
Prerequisite: BIO 190, 200. BIO 341 recommended.

BIO 393 Endocrinology (4)
The interrelationship of various endocrine systems with vertebrate physiology; examination of control processes, the mechanism of hormone action, the role of hormones in cancer, reproduction, differentiation, growth.
Prerequisite: BIO 321, 325 or permission of instructor. Offered winter semester alternate years.

BIO 394 Endocrinology Laboratory (2)
To accompany BIO 393. Individual research projects.
Prerequisite: Permission of instructor.

BIO 399 Field Experience in Biology (4)
Field experience in biology with faculty supervision which incorporates student performance in an occupational setting.
Prerequisite: 16 credits in biology of which 8 must be at the 300-400 level.

BIO 401 Advanced Human Physiology (4)
Lectures and discussion emphasizing the human organism and the experimental basis for current concepts and techniques. Topics include: reproduction, circulation, respiration, electrophysiology, and cellular mechanisms in physiological processes.
Prerequisite: BIO 207 or 321.

BIO 405 Special Topics (2, 3 or 4)
Prerequisite: Permission of instructor.

BIO 407 Cellular Biochemistry (4)
Advanced discussion of cellular control mechanisms emphasizing recent developments in the biochemistry of proteins and nucleic acids.
Prerequisite: BIO 325, CHM 204 and PHY 102.

BIO 408 Cellular Biochemistry Laboratory (1)
To accompany BIO 407. Modern research techniques; chromatography (paper, column, thin layers, etc.), electrophoresis, immunoelectrophoresis, ultracentrifugation and cell fractionation, isolation and density gradient analysis of the nucleic acids, etc.

BIO 421 Medical Microbiology (4)
Bacterial and viral human pathogens, emphasizing their etiology, physiology, pathogenesis, epidemiology, control and diagnosis.
Prerequisite: BIO 200.

BIO 422 Medical Microbiology Laboratory (1)
Basic skills of handling pathogenic bacteria and their diagnosis.
Prerequisite: BIO 421 with a minimum grade of 2.0.

BIO 423 Immunology (3)
The human immune system. Topics include antigens, antibodies, immunophysiology, serology, immunochemistry, immunobiology, immunogenetics, hypersensitivity, immunities to infectious agents and disorders of the immune system.
Prerequisite: BIO 207 or BIO 321.

BIO 425 Biophysics (4)
The physical basis of biological phenomena, and the nature of biophysical theories. Biological structure and function are studied in the context of the hierarchical, cybernetic systems theory. Offered winter semester of alternate years.
Prerequisite: BIO 325 or equivalent, calculus and general physics.

BIO 426 Biophysics Laboratory (1)
Mathematical modeling of biological phenomena, using microcomputers.
Corequisite: BIO 425.

BIO 429 Cytochemistry (4)
A survey of techniques currently used in microscopy to analyze the distribution and quantity of specific chemicals within cells and their organelles. Techniques include: specific staining reactions, enzyme digestion, metabolic inhibition and autoradiography.
Prerequisite: BIO 305 and 306. Corequisite: BIO 430.

BIO 430 Cytochemistry Laboratory (2)
Individual research projects using cytochemical techniques to study and compare chemical compositions of several types of cells.
Corequisite: BIO 429.

BIO 433 Advanced Microbiology (3)
The application of biochemical principles to the study of bacterial physiology, structure and function. The diversity of bacterial species, their classification and microbial ecology are emphasized.
Prerequisite: BIO 319 and CHM 203.

BIO 434 Advanced Microbiology Laboratory (2)
Selective enrichment, isolation and characterization of microorganisms from natural sources.
Corequisite: BIO 433.

BIO 435 Developmental Genetics (4)
Modern aspects of genetics derived from molecular and microbial systems and their application to problems of development in multicellular organisms. Topics include gene structure, gene regulation, recombinant DNA and immunogenetics.
Prerequisite: BIO 341 and 325 or equivalent.

BIO 436 Developmental Genetics Laboratory (1)
To accompany BIO 435.

BIO 439 Biochemistry of the Gene (4)
Biochemistry and expression of the eukaryotic gene with emphasis on recent developments in gene cloning, expression of cloned genes, and applications of recombinant DNA technology in biology and medicine.
Prerequisite: BIO 407 or CHM 453.

BIO 440 Biochemistry of the Gene Laboratory (2)
Laboratory exercises and short projects involving nucleic acids and protein synthesis. Specific experiments include isolation and characterization of RNA and DNA, translation of mRNA and enzymology of nucleic acids.
Corequisite: BIO 439.

BIO 441 Microbial Genetics (4)
Microbial genetics, emphasizing the basic aspects of bacteriophage and plasmid genetics applied to biotechnology.
Prerequisite: BIO 341 or BIO 419 or permission of instructor.

BIO 445 Ultrastructure (4)
A consideration of the fine structure of cells and cell products as revealed by electron microscopy and other procedures. Offered winter semester.
Prerequisite: BIO 305 and permission of instructor.

BIO 446 Ultrastructure Laboratory (2)
To accompany BIO 445.

BIO 455 Seminar (1)
Discussion of recent publications in the biological sciences.

BIO 460 Neuroanatomy (4)
The brain, brain stem, spinal cord and associated structures with respect to their morphology, development, function and the integration of these functions in motor activity. Certain lesions and their clinical significance will be discussed.
Prerequisite: BIO 205 or 381 or permission of instructor.

BIO 463 Cell Biology (4)
Prerequisite: BIO 305 and permission of instructor.

BIO 464 Cell Biology Laboratory (1)
To accompany BIO 463.

BIO 481 Topics in Physiological Ecology (3)
Physiological responses of individual organisms and populations to their environment, including regulation of the internal environment, reproductive strategies, bioenergetics and chemical ecology.
Prerequisite: One course in physiology or ecology.

BIO 482 Topics in Evolutionary Biology (3)
Advanced topics in evolutionary biology including coevolution, life history strategies, rates of evolution, sexual selection and other current topics.
Prerequisite: One course in either ecology, behavior or evolution or permission of instructor.

BIO 483 Topics in Community and Population Biology (3)
Analytic and synthetic approaches to the biology of communities and populations utilizing both plant and animal studies. Topics will include experimental design, statistical methods, sampling techniques, dynamics, production, distribution and species interactions.
Prerequisite: One course in ecology, evolution or permission of instructor.

BIO 484 Topics in Biometry and Experimental Design (3)
Quantitative analysis of biological data using statistics and including the use of statistical packages for the computer.
Prerequisite: One course in ecology or permission of instructor.

BIO 490 Independent Research (2, 3 or 4)
Directed undergraduate research in laboratory, field or theoretical biology. May be taken more than once. Graded numerically or S/U by written arrangement with biology faculty supervisor. A maximum of 8 credits may be numerically graded.
Prerequisite: Written agreement with a biology faculty supervisor.

BIO 497 Apprentice College Teaching (2)
Assisting in presenting a course, usually a laboratory course, to undergraduates. May be taken more than once.
Prerequisite: Written agreement with a biology faculty supervisor.

DEPARTMENT OF CHEMISTRY

Chairperson: *Paul Tomboulian*

Professors: *Gottfried Brieger, Denis M. Callewaert, Isaac Eliezer, Kenneth M. Harmon, Lewis N. Pino, Joel W. Russell, Peter Schmidt, Michael D. Sevilla, R. Craig Taylor, Paul Tomboulian*

Associate professors: *Julien Gendell, Steven R. Miller, Robert L. Stern*

Assistant professors: *Bandana Chatterjee, Tadeusz Malinski, Kathleen Moore, Mark Severson*

Adjunct professor: *Philip Weiss*

Lecturers: *William Bradford, Gerald G. Compton, Edward Kerfoot, Daniel Steinmetz, Stephen Tackitt, Douglas Thiel, David Van Lewen*

Oakland University's chemistry programs offer students the laboratories and equipment typically found at larger universities while retaining strong emphasis on the undergraduate education and informal student-faculty relations characteristic of smaller liberal arts colleges. Additionally, research opportunities are available to qualified undergraduates.

The Department of Chemistry provides highly professional chemistry programs as well as the liberal arts dedication to developing the highest intellectual and creative potential of its students. The department offers programs of study leading to Bachelor of Arts, Bachelor of Science and Master of Science degrees.

Planning a program in chemistry

Curricula leading to a major in chemistry are quite structured, since knowledge is developed cumulatively in a four-year sequence. This leads to a fairly prescribed order of course presentation with a number of specific course requirements. Students interested in pursuing a program of study in chemistry should consult with a departmental adviser and file a program plan as early as possible in their college career.

Admission to major standing

To be eligible for a major in chemistry, students should be admitted to major standing by the department at least three semesters before graduation. Admission to major standing and the accompanying program certification guarantee that the student's program plan will meet the requirement for the Bachelor of Arts and Bachelor of Science degrees.

Students may apply through the department office or a faculty adviser. Students may be admitted to major standing after filing a satisfactory curriculum plan and completion of 30 total credits in chemistry, physics and mathematics, including CHM 234, 237, MTH 155 and PHY 151, with a grade point average of 2.00 or better.

Core curriculum

The core courses for the Bachelor of Arts and Bachelor of Science degrees consist of CHM 144-145, 149, 225, 234-235, 237, 238, 342-343, 348 and two semesters of CHM 400. Also included in the core are MTH 154-155, PHY 151-152 and CSE 130.

Requirements for the liberal arts major in chemistry, B.A. program

This curriculum is for students who wish to incorporate a science major into a broader liberal arts program, or who wish a foundation in chemistry as a basis for study in chemical physics, medicine and related fields, environmental studies and technical-legal or technical-business

careers. Students interested in sales or management careers in the chemical industry might consider taking the minor in management offered by the School of Business Administration.

Forty-one credits in chemistry and admission to major standing are required for the Bachelor of Arts degree, including the core curriculum plus 5 additional credits in CHM courses at the 400 level or above, at least 2 of which are laboratory credits. Students interested in a secondary teaching major in chemistry should consult the chairperson or the chief adviser of the department.

Requirements for the major in chemistry, B.S. program

The Bachelor of Science degree with a major in chemistry consists of the core curriculum plus a set of advanced courses. The program can provide the graduate with American Chemical Society certification (see requirements under "American Chemical Society certification" on page 64 of this catalog).

The requirements for the major in chemistry are admission to major standing and a minimum of 48 credits in chemistry, consisting of the core curriculum and an advanced course program.

In selecting advanced courses, students may tailor their programs to fit specific career objectives, such as industrial chemistry, biochemistry, graduate study, research, medicine or dentistry. Students should plan their programs in consultation with a faculty adviser; advanced course programs must be approved as part of the application for major standing. In addition to the core curriculum, the B.S. degree requires 12 additional credits in CHM courses at the 400 level or above, at least two of which are laboratory credits. Also, four or more credits of BCM, BIO, APM, MTH, STA or PHY courses numbered above 250 are required.

Research

The Department of Chemistry offers exceptional opportunities year-round for interested and qualified students to participate in faculty research. Course credit for research may be earned in CHM 290 and 490. In addition, employment opportunities or fellowships are often available. Such research experience is of particular value to students preparing for graduate study or industrial employment.

Students should feel free to discuss research opportunities with members of the chemistry faculty. Specific arrangements with an individual faculty member must be made before enrollment in CHM 290 or 490.

CHM 490 credits cannot be counted as elective credits toward a chemistry major except by petition in exceptional cases.

Departmental honors

Departmental honors may be awarded to graduating seniors in chemistry who have been recommended for honors by their research advisers and have completed all required science courses with high grades.

Advanced courses in chemistry

Chemistry majors take one or more advanced courses in areas of interest. In addition to the courses listed in this catalog, the following advanced courses are open to qualified undergraduates: CHM 521 and 522 ("Advanced Analytical Chemistry" and "Topics in Analytical Chemistry"), CHM 534 and 535 ("Advanced Organic Chemistry" and "Topics in Organic Chemistry"), CHM 540 ("Symmetry in Chemistry"), CHM 541 and 542 ("Advanced Physical Chemistry" and "Topics in Physical Chemistry"), CHM 553 and 554 ("Advanced Biochemistry" and "Topics in Biochemistry"), CHM 563 and 564 ("Advanced Inorganic Chemistry" and "Topics in Inorganic Chemistry"). (See the *Oakland University Graduate Catalog* for course descriptions.)

Biochemistry program

In cooperation with the Department of Biology, the Department of Chemistry offers a Bachelor of Science degree with a major in biochemistry (see page 171). Courses used to fulfill the requirements for a major in biochemistry may not be used simultaneously to fulfill the requirements for a major or minor in chemistry.

Requirements for the liberal arts minor in chemistry

Students in other departments who wish to minor in chemistry must take CHM 144-145, 149, 203-204 (or 234-235), 225 and 342. A minimum of 8 credits in chemistry must be earned at Oakland University.

Requirements for the secondary teaching minor in chemistry

Twenty credits in chemistry courses are required for the secondary teaching minor in chemistry. These must include CHM 144, 145 and 149, plus 10 credits of CHM courses numbered at the 200 level or above. A choice from CHM 203, 204, 209, 225, 234, 235, 237, 238, 342, 343 and 348 is recommended.

Concentration in preprofessional studies in medicine, dentistry and optometry

Students can take a concentration in preprofessional studies by adding the required biology courses to a regular chemistry major program. Students should consult a departmental adviser before planning this concentration.

Engineering chemistry program

Coordinator: *Mark Severson*

The program in engineering chemistry, which is offered by the Department of Chemistry in cooperation with the School of Engineering and Computer Science, leads to the Bachelor of Science degree with a major in engineering chemistry. It is intended for well-qualified students who seek a basic preparation in engineering along with a highly professional chemistry program.

Program requirements* for the Bachelor of Science in engineering chemistry include:

1. MTH 154-155, MTH 254, APM 257, PHY 151-152 and CSE 132
2. CHM 144-145, CHM 149, CHM 234-235, CHM 237, CHM 342-343, CHM 348, CHM 471 and ME 241; choice of six credits from CHM 462-463, CHM 470, CHM 472 or CHM 477
3. EGR 101, EGR 401, CSE 171, EE 222, ME 221, ME 331 and SYS 325; choice of eight credits from ME 438, ME 448, ME 449, ME 456, ME 482 and SYS 431.

In addition to the previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.00 in the courses taken to satisfy the engineering and chemistry requirements and in the courses prescribed for the mathematics, physics and computer science requirements.

American Chemical Society certification

The Department of Chemistry's faculty members, facilities and curriculum meet the criteria of the American Chemical Society. This allows the department to certify chemistry students as eligible for society membership. Certification is granted to students who have successfully completed the requirements for the Bachelor of Science degree with a major in chemistry, including CHM 426 and CHM 462-463.

*Students within this program are not required to complete the college distribution described on page 41.

Placement in introductory chemistry courses

The various introductory courses (CHM 104, 140, 144 and 164) are for students in different majors and with different levels of mathematical and physical sciences preparation. In order to assure the best choice of course, each student must take the Chemistry Placement Test before registering for any of these courses. Placement is based on the test results, student's declared major and high school science and mathematics experience. Students should consult the department office or the *Schedule of Classes* for additional details, test dates and times.

Course Offerings

Credit will not be allowed for more than one course from each of the following pairs: CHM 209 and 237, 203 and 234, 204 and 235. Credit will not be allowed in major and minor programs in chemistry, biology or physics for CHM 104, 110, 140, 201 and 497.

CHM 104 Introduction to Chemical Principles (4)
CHM 104-201 constitutes a complete two-semester sequence in general, organic and biological chemistry. Recommended preparation is two years of high school mathematics, including algebra and one year of high school science.
Prerequisite: Chemistry Placement Test. Corequisite: MTH 111* or placement in MTH 112* or higher. *Satisfies the university general education requirement in natural science and technology.*

CHM 110 Chemistry in the Modern World (4)
Designed for students without science background who seek an understanding of the chemical nature of our world. Both historical perspectives and current applications are considered. *Satisfies the university general education requirement in natural science and technology.*

CHM 140 Foundations for Chemistry (4)
Basic chemical facts and concepts providing background and problem-solving skills in general chemistry. Intended especially for students needing additional preparation before enrolling in CHM 144.
Prerequisite: Chemistry Placement Test; MTH 111* or placement in MTH 112* or higher MTH course.

CHM 144-145 General Chemistry (4 each)
Stoichiometry, states of matter, atomic and molecular structure, thermochemistry, equilibrium and kinetics. CHM 144-145 are prerequisite to all other chemistry courses except CHM 201. Recommended preparation is three years of high school mathematics and one year of high school chemistry. *Satisfies the university general education requirement in natural science and technology.*
Prerequisite: Chemistry Placement Test or CHM 140; MTH 112* or placement in MTH 141 or higher MTH course.

CHM 149 General Chemistry Laboratory (2)
Introduction to the basic techniques of chemistry experimentation.
Prerequisite: Grade of 2.0 or higher in CHM 144. Corequisite: CHM 145.

CHM 164-165 General Chemistry (Honors) (4 each)
Intensive introduction to general chemistry for the well-prepared student. Recommended preparation as for CHM 144-145, plus high school physics. May be used in place of CHM 144 or 145 to satisfy the general education requirement in natural science and technology.
Prerequisite: Chemistry Placement Test or by invitation. Corequisite: MTH 154-155.

CHM 201 Introduction to Organic and Biological Chemistry (4)
Brief study of organic chemistry, emphasizing biochemical applications. *Satisfies the university general education requirement in natural science and technology.*
Prerequisite: CHM 104.

CHM 203-204 Organic Chemistry (4 each)
Structure, properties and reactivity or organic compounds. Intended primarily for majors in biology, health sciences and pre-professional students. Pre-professional students with a strong record in chemistry should consider CHM 234-235 as an alternative.
Prerequisite: CHM 145.

*See the special information concerning these courses on page 97.

CHM 209 Organic Chemistry Laboratory (2)
Basic techniques of synthesis, degradation and identification of organic substances.
Prerequisite: CHM 149 and CHM 203. Corequisite: CHM 204.

CHM 225 Analytical Chemistry (4)
Theory and techniques of analytical chemistry, including gravimetric, titrimerntric, electrochemical and spectrophotometric methods. Two hours lecture and eight hours laboratory per week.
Prerequisite: CHM 149.

CHM 234-235 Organic Chemistry (4 each)
A comprehensive introduction to organic chemistry, with emphasis on modern theory and synthetic methods. Intended primarily for chemistry majors.
Prerequisite: CHM 145.

CHM 237-238 Organic Chemistry Laboratory (2 each)
Preparation, separation and identification of organic compounds. Corequisite: CHM 234-235.

CHM 290 Introduction to Research (1, 2, 3 or 4)
Introduction to laboratory research for students with no previous research experience. May be repeated for credit. Graded S/U.
Prerequisite: Permission of instructor.

CHM 342 Physical Chemistry I (4)
Applications of thermodynamics to chemical systems and equilibria.
Prerequisite: CHM 145 or 165 and MTH 154. Corequisite: MTH 155 and PHY 151.

CHM 343 Physical Chemistry II (4)
Macroscopic studies of kinetics, electrochemistry and transport phenomena as applied to chemical systems, and introduction to quantum mechanics.
Prerequisite: CHM 342. Corequisite: PHY 152.

CHM 348 Physical Chemistry Laboratory (2)
Experiments in thermodynamics, kinetics, phase equilibria and advanced spectroscopy with emphasis on mathematical treatment of experimental data.
Prerequisite: CHM 225 and 342. Corequisite: CSE 130 and CHM 343.

CHM 400 Seminar (0)
Discussions of recent advances and topics of current interest; reports. Graded S/U.
Prerequisite: Senior standing.

CHM 426 Instrumental Analysis (3)
Theory and application of modern instrumental techniques including spectroscopy, radiochemical methods, x-ray methods, surface analysis, NMR, mass spectrometry, electroanalytical methods, gas and liquid chromatography and hyphenated methods.
Prerequisite: CHM 225 and CHM 343.

CHM 427 Electrochemistry (3)
Survey of electroanalytical and spectroelectrochemical methods. Includes microelectrodes and selective electrodes in bioelectrochemistry as well as electrical phenomena of the biological membrane level.
Prerequisite: CHM 225.

CHM 444 Physical Chemistry III (3)
Introduction to statistical mechanics. Applications of quantum and statistical mechanics to chemical bonding, molecular structure and spectroscopy.
Prerequisite: CHM 343 and MTH 254.

CHM 453-454 Biochemistry (3 each)
A comprehensive introduction to molecular biology and biochemistry, including the structure and function of nucleic acids, proteins, enzymes, carbohydrates and lipids, enzyme kinetics, metabolism and metabolic controls. Identical with BCM 453-454.
Prerequisite: CHM 204 or 235.

CHM 457 Biochemistry Laboratory (2)
Techniques of extraction, separation, identification, and quantification of biomolecules, including electrophoresis, chromatography and radioisotope techniques, with emphasis on mathematical treatment of experimental data.
Prerequisite or corequisite: CHM 453.

CHM 458 Biochemistry Projects (2)
Advanced project-oriented instruction in biochemical laboratory techniques.
Prerequisite: CHM 457 and permission of instructor.

CHM 462-463 Inorganic Chemistry (2 each)
Structure, bonding and reactivity of inorganic compounds, with emphasis on transition metals and selected main group elements.
Prerequisite: CHM 342.

CHM 466 Inorganic Synthesis Laboratory (2)
Synthesis, analysis and characterization of inorganic and organometallic compounds.
Prerequisite: CHM 238. Corequisite: CHM 462.

CHM 470 Industrial Chemistry (3)
Survey of the major sources and uses of chemicals, industrial chemical processes and fundamental raw materials. Includes discussion of organization, economics, communication, patents and government regulation in the chemical industry.
Prerequisite: CHM 235.

CHM 471 Macromolecular Chemistry (3)
Preparation, properties and structure of selected inorganic and organic polymers. Both chemical theory and technological applications will be discussed.
Prerequisite: CHM 204 or 235.

CHM 472 Mechanical Properties of Polymers (3)
Relationship between structure and mechanical behavior for polymeric, polymer-reinforced and composite materials.
Prerequisites: CHM 204 or 235 and 471.

CHM 477 Macromolecular Laboratory (2)
Introduction to the synthesis and physical characterization of synthetic polymers.
Prerequisite: CHM 238.

CHM 480 Selected Topics (1, 2, 3 or 4)
Advanced study in selected areas; normally involves preparation of a term paper or presentation of a seminar. May be repeated for credit.
Prerequisite: Permission of instructor.

CHM 486 Physical-Analytical Projects (1 or 2)
Advanced experimentation in physical or analytical chemistry, with at least four hours per week per credit.
Prerequisite: Permission of instructor.

CHM 487 Synthesis Projects (1 or 2)
Advanced synthesis work emphasizing modern techniques, with at least four hours per week per credit.
Prerequisite: Permission of instructor.

CHM 490 Research (1, 2, 3, 4 or 6)
Laboratory practice in undergraduate research, with at least four hours per week per credit. May be repeated for credit. Graded S/U.
Prerequisite: Permission of instructor.

CHM 497 Apprentice College Teaching (2 or 4)
Directed teaching of selected undergraduate chemistry courses. May be repeated for credit. Graded S/U.
Prerequisite: Permission of instructor.

DEPARTMENT OF ECONOMICS

Chairperson: *Ronald L. Tracy*

Professors: *Eleftherios N. Botsas, Alice C. Gorlin, Karl D. Gregory, Miron Stano*

Associate professors: *David P. Doane, Augustin K. Fosu, Oded Izraeli, Kevin J. Murphy, Ronald L. Tracy*

Assistant professors: *J. David Diltz, Sherman Folland, Harold Hotelling, Scott A. Monroe, Gerald V. Post*

Visiting assistant professor: *Anandi P. Sahu*

Lecturers: *Jacquelynne K. Genova, Douglas R. Munro, Dennis M. Polak*

The curriculum for the major or minor in economics combines the concepts and tools of economic analysis, a broad general education and the freedom to take several courses in other areas of interest to the student. Students learn how economic analysis can be applied to major problems facing individuals, businesses, the nation and the world today.

Besides preparing a student for a career in economics, an education in economics is excellent preparation for entry into law school, a graduate school of public administration or management, or a Master of Business Administration (M.B.A.) program. Economics is a flexible choice for students seeking a rigorous, well-respected and relevant major without specializing in a narrowly defined area. To be employed as a professional economist or to teach economics, students normally will need to enroll in a graduate school and obtain at least a master's degree in economics, preferably a doctorate.

The Department of Economics offers three economics programs: Bachelor of Arts with a major in economics; Bachelor of Science with a major in economics (offered by the School of Business Administration); and a minor in economics. (See program descriptions under the School of Business Administration on pages 204-206.

The economics faculty and program are an integral part of the School of Business Administration, which is responsible for establishing the curriculum, for advising economics students and for related administrative matters.

Requirements for the liberal arts major in economics

The program leading to a Bachelor of Arts degree in economics consists of completing the university general education courses (described on pages 25-28); the college distribution requirements; cognate courses in mathematics, statistics and computers; required economics courses, and economics electives, as listed below. The economics major must complete each of the cognate courses with a grade of 2.0 or better:

Cognate courses		
MTH 111-112*	Elementary-Intermediate Algebra (if required by score on the math placement test)	0-8
MTH 121	Linear Programming, Elementary Functions	4
MTH 122	Calculus for the Social Sciences (or MTH 154)	4
CSE 125	Introduction to Computer Use (or CSE 130)	4
QMM 250	Statistical Methods	6
Required courses		
ECN 200	Principles of Macroeconomics	
and ECN 201	Principles of Microeconomics	

or ECN 210	Principles of Economics (combines ECN 200 and ECN 201)	6-8
ECN 301	Intermediate Microeconomics	4
ECN 302	Intermediate Macroeconomics	4

Economics electives

The economics elective requirement is 16 additional credits in courses numbered ECN 300 and above; 8 of these credits must be in courses numbered ECN 400 and higher; no more than 4 credits may be in ECN 490. 16

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*See information concerning these courses on page 97.

Requirements for major standing

Admission to major standing in economics requires:

1. Certification of writing proficiency.
2. Completion of the following courses, or their equivalents, with a grade of 2.0 or better in each course: MTH 121-122, CSE 125 (or CSE 130), ECN 210 (or ECN 200 and ECN 201) and QMM 250.
3. Completion of 56 credits or more with a cumulative overall grade point average of 2.00 or better.
4. Approval of an "Application for Major Standing in Economics."

Admission to major standing in economics is required before a student may graduate with a Bachelor of Arts or Bachelor of Science degree with a major in economics. Although ECN 301 and ECN 302 are not required for admission to major standing in economics, students must earn a grade of 2.0 or better in both ECN 301 and ECN 302 in order to graduate.

Departmental honors

Economics majors are eligible for departmental honors if their grade point average in all economics and other courses taken from the School of Business Administration is 3.33 or above. Promising economics students may be invited to join Omicron Delta Epsilon, a national economics honors society.

Minor in economics

The economics faculty believes strongly in its role as a provider of education in economics to a broad range of students in other majors. Even moderate contact with the concepts and applications of economics will be valuable to most students. The minor in economics provides recognition to the student who does not want a major in economics but who has taken several courses in the area.

The minor in economics consists of a minimum of 18 credits, described as follows, and any prerequisites for these courses: ECN 150 or ECN 210 or both ECN 200 and ECN 201, and 12 additional credits in economics (ECN) courses (16 credits if the student took ECN 150). The minor in economics is open to all students except those pursuing a major in economics. Each of these courses must be passed with a grade of 2.0 or better.

Course Offerings

A detailed description of the economics courses is provided in the School of Business Administration section of this catalog (see pages 209-211). Following is a general description of the economics courses offered.

ECN 150: An introductory economics course for students not majoring in economics or management. After ECN 150, students may take certain economics courses numbered less than 350. ECN 150 may be used to help meet the university general education requirement in the social sciences.

ECN 200 and 201: Introductory courses for students who intend to major in economics or business, or students who desire a more complete understanding of economics. The accelerated course, ECN 210, combines the material of ECN 200 and 201 into a single-semester, 6-credit course. Highly motivated and well-prepared students should consider taking ECN 210 instead of ECN 200 and 201.

ECN 301 and 302: These intermediate economic analysis courses are designed for students who intend to major in economics or an area of business. Students may be admitted to these courses if they are pursuing a minor in economics.

ECN 309-ECN 341: Economics electives numbered 309 through 341 are applications of economics that are open to students who have taken ECN 150, ECN 200 or ECN 210.

ECN 350-ECN 385: Economics electives numbered 350 through 385 are intermediate level courses in the applications of economics intended for majors or minors in economics and business. These courses are open to students who have taken ECN 201 or ECN 210.

ECN 405-ECN 490: Economics courses numbered 405 or higher are advanced courses. Enrollment in these courses is limited to students who have taken ECN 301.

A detailed description of the economics courses is given in the School of Business Administration section of this catalog (see pages 209-211). Following is a list of the economics courses offered:

ECN 150	Basic Economics (4)
ECN 200	Principles of Macroeconomics (4)
ECN 201	Principles of Microeconomics (4)
ECN 210	Principles of Economics (6)
ECN 301	Intermediate Microeconomics (4)
ECN 302	Intermediate Macroeconomics (4)
ECN 309	Urban Economic Problems (4)
ECN 310	Economics of the Environment (4)
ECN 321	Money, Credit and the Economy (4)
ECN 326	Economic Development (4)
ECN 328	American Economic Development (4)
ECN 338	Economics of Human Resources (4)
ECN 341	The Soviet Economy (4)
ECN 350	Comparative Economic Systems (4)
ECN 373	International Trade and Finance (4)
ECN 378	Economic Analysis of Law (4)
ECN 385	Industrial Organization (4)
ECN 405	Econometrics (4)
ECN 409	Urban Economics (4)
ECN 414	Engineering Economics (2)
ECN 418	Seminar in Economic Policy (4)
ECN 456	Public Finance (4)
ECN 467	Economics of Health Care (4)
ECN 468	Labor Economics (4)
ECN 473	Theory of International Trade and Finance (4)
ECN 480	Seminar in Economic Theory (4)
ECN 490	Independent Study (2 or 4)

DEPARTMENT OF ENGLISH

Chairperson: *Robert T. Eberwein*

Professor Emerita: *Gertrude M. White*

Professors: *John P. Cutts, Joseph W. DeMent, Jane D. Eberwein, Robert T. Eberwein, Peter G. Evarts (Rhetoric, Communications and Journalism, English), Thomas Fitzsimmons, James F. Hoyle, Helen J. Schwartz*

Associate professors: *Robert L. Donald, Nigel Hampton, David W. Mascitelli, Brian F. Murphy, Joan G. Rosen, Mark E. Workman*

Assistant professors: *Bruce J. Mann, Susan H. Miller, Melodie J. Monahan, Laurie E. Osborne*

Associated faculty: *Professor Donald E. Morse (Rhetoric, Communications and Journalism, English), Professor William Schwab (Linguistics and English), Associate Professor Daniel H. Fullmer (Linguistics and English)*

Lecturers: *Joanne V. Aronoff, Martha L. Hammel, Marilyn Krainen, Carole J. Terry*

Chief adviser: *David W. Mascitelli*

The Department of English offers courses in British and American literature, introducing students to literary history, genre studies, critical theory and intensive study of major authors. Courses in language, mythology, folklore and film broaden the field of literary inquiry in ways that associate imaginative writing with the other arts, with popular culture and with various academic disciplines. The department also provides frequent opportunities for training in writing: creative writing courses, writing tutorials, courses in advanced expository writing and persuasive writing, technical writing courses and written assignments for literature courses.

By majoring in English, a student can enhance appreciation of literary masterpieces, gain critical understanding of imaginative writing and develop sensitivity to the uses of language while developing skills in analysis, research and communication. Such knowledge enriches all aspects of life, while such skills prepare students for careers in law, business, publishing, medical professions, library science, journalism, government and education.

The English curriculum is flexible; by seeking regular departmental advice, the English student can plan a program leading to many different professional and academic goals. The department encourages its students to balance their programs with such concentrations as American studies, environmental studies, film aesthetics and history, women's studies and computer science, or minors in linguistics, journalism, theatre arts, management, modern languages and other related fields. Majors from other university programs are welcome in English courses, many of which have no prerequisites. Evening students can complete the English major entirely through night courses.

For a description of each semester's course offerings, students should consult the "Advising Memo," available in preregistration periods in the department office. Faculty advisers provide specific guidance and help students develop comprehensive educational plans; students should consult their advisers regularly. For information about the English major and associated programs, students should consult "English: The Undergraduate Major," available in the department office.

Listed below are undergraduate programs of study leading to the Bachelor of Arts degree with a major in English, major with a linguistics concentration, a liberal arts minor in English and a secondary teaching minor in English. The department offers programs leading to the Master of Arts degree in English and, in cooperation with the School of Human and Educational Services, the Master of Arts in Teaching in English. Programs and course offerings in these programs are described in the *Oakland University Graduate Catalog.*

Requirements for the liberal arts major in English

Forty credits in English, including ENG 140 (preferably taken in either semester of the first year), and five courses (20 credits) at the 300 level or above. Of these, two courses must be in British literary history, chosen from among ENG 354, ENG 355, ENG 356 and ENG 357; one course must be at the 400 level (excluding ENG 498 or ENG 499).

Only one course at the 100 level (in addition to ENG 140) will be accepted for credit toward the major. No more than 8 credits of ENG 499 will be accepted for credit toward the major. Normally, only 4 credits from study abroad programs will be accepted for credit toward an English major.

Students interested in a secondary teaching major in English should consult the chair of the department or the chief adviser.

Departmental honors

Departmental honors may be awarded to graduating English majors for outstanding achievement in English.

The department awards the Mr. and Mrs. Roger M. Keyes Scholarship to an outstanding English major. Information is available in the departmental office. The deadline for application is in early March.

Requirements for the modified major in English with a linguistics concentration

The modified English/linguistics major requires 24 credits in English and American literature, including ENG 140, two courses in British literary history chosen from among ENG 354, ENG 355, ENG 356 and ENG 357, and 20 credits in linguistics. At least 20 of the 44 combined credits must be taken at the 300 level or above, and at least 4 of these credits must be in a 400-level seminar in English. See the linguistics offerings of the catalog for specific requirements.

Requirements for the liberal arts minor in English

ENG 140, plus 16 additional credits in English courses (exclusive of composition courses used to satisfy the writing proficiency requirement) are required. At least two courses must be taken at the 300-400 level. Only one 100-level course will be accepted, in addition to ENG 140, as part of the minor. Only 4 credits of ENG 499 will be accepted as part of the minor. Normally, only 4 credits from study abroad programs will be accepted for an English minor.

Requirements for the secondary teaching minor in English

Required for a minor are 24 credits from offerings in English, including ENG 140, ENG 498, one course in British literature, one course in American literature and one course in writing, excluding ENG 213. At least two courses must be taken at the 300-400 level. All students planning on obtaining the minor should consult with a department adviser.

Course Offerings

Courses on the 100 level (except ENG 140) are directed to students seeking nontechnical liberally oriented courses to fulfill general education requirements or for use in minors and particular concentrations. Courses on the 200 level offer broad introductions to literary materials and approaches basic to the study of English. Reading is often extensive and the classes are conducted primarily through lecture. Courses on the 300 level offer more intensive investigations into particular areas of English studies. These courses, the core of the program for majors, are open to advanced students according to their special needs and their preparation in related disciplines. Courses on the 400 level apply theory and methods of literary history, criticism and research to problems presented by specific topics or to writers. They are designed for upperclass

majors. Graduate courses on the 500 level are open to senior majors by permission of the instructor and the departmental chairperson.

Course prerequisites

Except where noted, 100- and 200-level courses have no prerequisites. Advanced courses (numbered 300 to 499) have a general prerequisite of writing proficiency, plus any special requirements listed with the course descriptions.

ENG 100 Masterpieces of World Literature (4)
A survey acquainting the student with some of the great books of the world. Emphasis on the Western literary tradition. *For students seeking an English elective or a course to satisfy the university general education requirement in literature.*

ENG 105 Shakespeare (4)
A general introduction to representative dramatic works of Shakespeare. *For students seeking an English elective or a course to satisfy the university general education requirement in literature.*

ENG 111 Modern Literature (4)
A general introduction to some phase of modern literature. Sample offerings might be: modern drama, modern American fiction, or continental literature. *For students seeking an English elective or a course to satisfy the university general education requirement in literature.*

ENG 120 Literature of Fantasy and Science Fiction (4)
May emphasize either fantasy or science fiction in any given term, and may present a historical view or deal with current trends in the literature.

ENG 140 Introduction to Literary Studies (4)
Practice in the techniques of reading literature and introduction to important basic concepts of criticism and commentary. Required of majors and minors in English.

ENG 200 Topics in Literature and Language (4)
Topics or problems selected by the instructor.

ENG 211 The Bible as Literature (4)
Study of the types of literature found in the Old and New Testaments. Identical with REL 211.

ENG 213 Writing Laboratory (2)
Small group or individual instruction to improve writing skills and styles in ways applicable to college work as well as career goals. May be taken two semesters for credit. May be added through the seventh week of the semester. Graded S/U.
Prerequisite: RHT 101 or equivalent.

ENG 214 Introduction to Folklore (4)
The major forms of traditional artistic expression (folktale, myth, legend, proverb, ballad, ritual) studied in their literary and cultural contexts.

ENG 215 Fundamentals of Grammar and Rhetoric for Secondary Teachers (4)
A course treating the relationship of the study of language systems to composition and exploring various grammatical and rhetorical models useful in teaching writing. Required of all secondary education majors in English. Open to secondary education majors in other fields.
Prerequisite: RHT 101 or equivalent.

ENG 224 American Literature (4)
Introduction to literary analysis and appreciation through readings in the American literary tradition. Emphasis on such authors as Hawthorne, Melville, Dickinson and James. *For students seeking an English elective or a course to satisfy the university general education requirement in literature.*

ENG 241 British Literature (4)
Introduction to literary analysis and appreciation through readings in the British literary tradition. Emphasis on such authors as Chaucer, Shakespeare and Dickens. *For students seeking an English elective or a course to satisfy the university general education requirement in literature.*

ENG 250 Film: A Literary Approach (4)
Exploration of the dramatic and narrative content of classic and modern films, treating such elements as theme, motif, symbol, imagery, structure and characterization, as well as cultural and philosophical implications.

ENG 300 Special Topics in Literature and Language (4)
Special problems or topics selected by the instructor.

ENG 301 Poetry (4)
The major forms of poetic expression studied from generic and historical points of view.

ENG 302 Popular Culture (4)
The major forms of popular expression (mystery, western, science fiction, romance) in literature and related media (film, television, music) studied in their cultural contexts.

ENG 303 Fiction (4)
The major forms of narrative fiction (short story, novella, novel) studied from generic and historical points of view. *Meets the university general education requirement in literature.*

ENG 304 Studies in Literary Mode (4)
A major literary mode (such as tragedy, comedy, epic, romance, satire) studied from generic and historical points of view.

ENG 306 Drama (4)
The major forms of dramatic expression studied from generic and historical points of view. *Meets the university general education requirement in literature.*

ENG 307 Modern Drama (4)
Studies in English, American and Continental drama since Ibsen.

ENG 308 Playwriting (4)
A study of plays from various periods and theatrical styles and an exploration of principles and techniques of dramatic writing. The last half of the course will be devoted exclusively to student scripts. Enrollment limited to 20.
Prerequisite: Permission of instructor.

ENG 309 Scriptwriting (4)
A study of screen plays and films, exploring principles and techniques of dramatic writing, with emphasis on problems posed by a primarily visual medium. The last half of the course will be devoted to student scripts. Enrollment limited to 20.
Prerequisite: Permission of instructor.

ENG 310 Workshop in Writing (4)
Intermediate-level workshop for apprentice writers in poetry or fiction, the emphasis varying from semester to semester.

ENG 311 Chaucer (4)
The major works, with emphasis on *The Canterbury Tales* and *Troilus and Criseyde.*

ENG 312 Classical Mythology (4)
The principal Greek and Roman myths and their uses in classical and post-classical art and literature. *Meets the university general education requirement in literature.*

ENG 313 Myth in Literature (4)
Study of the mythic content and/or structure of literature.

ENG 314 Folklore in Literature (4)
Reflection of folk themes, images and structures in British and American literature by authors such as Twain, Faulkner, Hardy and Joyce.

ENG 315 Shakespeare (4)
Reading and discussion of representative plays and poetry.

ENG 316 Milton (4)
His major poetry, with emphasis on *Paradise Lost* and some attention to his prose.

ENG 317 Early American Literature (4)
Studies in colonial and early national American literature with emphasis on such writers as Bradstreet, Taylor, Edwards and Franklin.

ENG 320 American Poetry (4)
Studies in American poetry from its origins with emphasis on the major writers of the nineteenth and early twentieth centuries such as Poe, Whitman, Dickinson, Frost and Eliot.

ENG 322 Nineteenth Century American Fiction (4)
Readings in the novel, tale and sketch with emphasis on major writers such as Hawthorne, Melville, Twain and James.

ENG 324 Issues in American Literature (4)
Study of literary works ranging across period and/or genre in their relation to a central issue, theme, or problem in American literature. Representative topics are romanticism, the puritan tradition, American humor and the writer and American society.

ENG 332 Modern American Fiction (4)
Studies in American fiction since the turn of the century with emphasis on such figures as Faulkner, Hemingway, West, Dos Passos, Steinbeck and Fitzgerald.

ENG 333 Modern Poetry (4)
Studies in poetry since the turn of the century. The course may emphasize American or British in any given semester or discuss international currents in modern poetry.

ENG 340 Writing Now (4)
Verbal arts in contemporary contexts. Writing and related arts — any or all combinations.

ENG 341 Selected Ethnic Literature (4)
Reading and critical analysis of representative selections from American ethnic literature. Special attention to groupings such as American-Jewish and Native American at discretion of instructor.

ENG 342 Black American Writers (4)
A study of black literary figures and the black experience in literature, with emphasis on the works of Gwendolyn Brooks, Ralph Ellison, James Baldwin and other representative writers.

ENG 350 Topics in Film (4)
Topic or problem to be selected by the instructor.

ENG 354 British Medieval Literature (4)
Development of Old and Middle English literature to about 1500. Emphasis on the major works from *Beowulf* to Chaucer and Malory.

ENG 355 British Literature of the Renaissance (4)
Literature from about 1500 to 1660. Emphasis on the development of the sonnet and lyric, drama, prose and epic. Consideration of such major authors as Sidney, Donne, Shakespeare and Milton.

ENG 356 British Literature from the Restoration to Romanticism (4)
From 1660 to the Romantic revolution of the early nineteenth century. Consideration of such major authors as Dryden, Swift, Pope, Johnson, Burns, Blake and Wordsworth.

ENG 357 British Literature of the Victorian and Early Modern Periods (4)
From the Victorians to the 1920s. Among the major authors to be considered are Tennyson, Browning, Arnold, Carlyle, Rossetti, Hopkins, Shaw, Yeats and Owen.

ENG 369 The English Novel (4)
A study of the origin and development of the English novel from its beginnings to the early twentieth century. Among the novelists to be considered are Fielding, Richardson, Austen, Dickens, Conrad, Lawrence and Joyce.

ENG 375 Modern Literature (4)
Modern British, American and/or Continental literature, with concentration on the work of a small number of writers.

ENG 376 History of the English Language (4)
A detailed survey of the English language from its beginning to modern times.

ENG 377 Modern English Grammar (4)
A survey of English structure, especially of syntax, with descriptions based on the work of important contemporary scholars.

ENG 380 Analytical and Persuasive Writing (4)
A practical course in analytical writing designed for preprofessional students. Emphasis on persuasion, argumentation, organization, audience analysis and style.

ENG 382 Business and Technical Writing (4)
Instruction, practice and technique in writing business communications (letters, memoranda, reports and technical communications).

ENG 385 Interdisciplinary Issues (4)
The relationship of literature and literary study to one of the following disciplines: science, philosophy, psychology, religion, music or the visual arts. The second area will vary from semester to semester.

ENG 390 Literary Theory and Critical Methods (4)
Studies in modern critical methods, with emphasis on formal analysis, structuralism, and myth criticism. Application of critical approaches and techniques.

ENG 391 History of Literary Criticism (4)
The development of literary criticism, presented as a survey with emphasis on major theorists. Significant applications of theory examined.

ENG 392 Film Theory and Criticism (4)
Study of major critical approaches to film such as those of Eisenstein, Kracauer, Arnheim, Bazin, Sarris, Wollen and Metz.
Prerequisite: A course in film.

ENG 399 Field Experience in English (4)
Field experience in appropriate employment correlated with directed study assignments, planned by the student, in conjunction with the instructor and the cooperative education office in the semester prior to enrollment. May not be repeated for credit.
Prerequisite: 16 credits in English, of which at least 8 must be at the 300-400 level.

ENG 400 Advanced Topics in Literature and Language (4)
Advanced topics and problems selected by the instructor.
Prerequisite: Four courses in English.

ENG 401 Studies in Literary Kinds (4)
The study of a single literary kind, whether genre (such as novel, lyric or drama) or mode (such as tragedy or comedy).
Prerequisite: Four courses in English.

ENG 410 Imaginative Writing (4)
Designed for potential writers of fiction, poetry and/or drama. The course may focus on one kind of writing, and the approach may shift from semester to semester.
Prerequisite: Permission of instructor.

ENG 451 Major American Writers (4)
Studies in one or two American writers to be selected by the instructor.
Prerequisite: Four courses in English.

ENG 452 Major British Writers (4)
Studies in one or two British writers to be selected by the instructor.
Prerequisite: Four courses in English.

ENG 453 Studies in Major Authors (4)
Intensive study of a selected group of authors: British, American, or both.
Prerequisite: Four courses in English.

ENG 465 Shakespeare (4)
Analysis of four or five of the plays.
Prerequisite: Four courses in English.

ENG 490 Advanced Criticism (4)
Studies in criticism, often concentrating on a single school.
Prerequisite: Four courses in English.

ENG 498 The Theories of Teaching Literature, Language and Composition (4)
Designed for the future teacher of English, this course focuses on materials and methods for teaching English in junior and senior high schools. Offered only during winter semester. A cadetship in a secondary school is required.
Prerequisite: English and language arts secondary education majors and minors only.

ENG 499 Independent Study (2 or 4)
A proposed course of study must be submitted to the prospective instructor in the semester before the independent study is to be taken. Only 8 credits of 499 may apply toward the major, and only 4 credits may apply toward the minor. May be elected on an S/U basis.
Prerequisite: Four courses in English and permission of instructor.

DEPARTMENT OF HISTORY

Chairperson: *S. Bernard Thomas*

Professor Emeritus: *George T. Matthews*

Professors: *Charles W. Akers, John Barnard, Brian P. Copenhaver, W. Patrick Strauss, S. Bernard Thomas, Richard P. Tucker*

Associate professors: *De Witt S. Dykes, Jr., Leonardas V. Gerulaitis, James D. Graham, Gerald C. Heberle, Mary C. Karasch, Joseph A. Klaits, Roy A. Kotynek, Paul M. Michaud, Lawrence D. Orton, Carl R. Osthaus, Anne H. Tripp*

Assistant professor: *Whitney Walton*

Chief adviser: *Carl R. Osthaus*

The study of history at the undergraduate level has traditionally been considered one of the major paths to informed and effective citizenship. Its emphasis on broad knowledge, critical reading, careful judgment and precise writing offers excellent preprofessional preparation for many careers in business, government service, law, the ministry, journalism and library and museum service.

The Department of History guides students toward these careers and provides an opportunity to support academic preparation with field experience in the community (e.g., a historical society, museum or private or public agency). Oakland University's teacher training program draws on history in the elementary education major and minor concentrations in history/social science, in the secondary teaching major in social studies and in the secondary teaching minor in history.

Careers in college teaching and other forms of professional historical scholarship usually require post-graduate training, toward which solid work in the undergraduate major is extremely important. Students interested in achieving a Ph.D. in history should be aware that most graduate schools require demonstrated competence in one or two modern foreign languages.

The department's undergraduate program leads to the Bachelor of Arts degree. It also offers a Master of Arts program, which is described in the *Oakland University Graduate Catalog.* The department offers both undergraduate and graduate evening courses, and students can complete either the B.A. or M.A. entirely at night. Every history student should plan his or her course of study in close consultation with a department adviser.

Requirements for the liberal arts major in history

The major in history requires 40 credits in history courses. At least 20 of these credits must be in courses numbered 300 or above, and must include HST 300. No more than 16 credits in independent study (HST 391 and 491) may be counted toward the history major.

Departmental honors

Majors who wish to be considered for departmental honors must submit an application to the History Honors Committee with a paper prepared in connection with regular course work and significantly more ambitious in research and bibliographic scope than a book review. The committee will want the original of the paper, along with the instructor's comments and grade. There is no statutory grade point minimum for honors, but the award is seldom made to students with less than a 3.50 grade point average in history.

There are two scholarships specifically for students majoring in or intending to major in history. Information about the George T. Matthews Scholarship and the Oakland University Foundation Matthews Scholarship is available in the History Department office.

Requirements for the liberal arts minor in history

The liberal arts minor in history requires 20 credits in history courses, including 8 credits in courses numbered 300 or above.

Requirements for the secondary teaching minor in history

The secondary teaching minor in history requires 20 credits in history courses, including HST 114 and 115; at least 8 credits must be in courses numbered 300 or above. Students interested in a secondary teaching major in history should consult the chair of the department or the chief adviser.

Course prerequisites

Introductory and survey courses (HST 100-HST 299) have no prerequisites. More advanced courses (HST 300-HST 399) have a general prerequisite of writing proficiency certification plus any special requirements listed within the course descriptions. The most advanced research courses at the undergraduate level (HST 400-HST 499) have a general requirement of 20 credits in history plus any special requirements listed within the course descriptions.

Course Offerings

HST 100 Topics in History (4)
An introductory course to develop critical judgment regarding the nature and use of historical evidence. Recommended for students with little or no background in college-level history. May be repeated once for a total of 8 credits.

HST 101 Introduction to European History before 1715 (4)
Surveys the history of Europe from the ancient period through the Middle Ages, Renaissance, Reformation and the Early Modern periods. *Satisfies the university general education requirement in Western civilization.*

HST 102 Introduction to European History since 1715 (4)
Surveys the history of Europe from the Enlightenment to the present. *Satisfies the university general education requirement in Western civilization.*

HST 114 Introduction to American History before 1876 (4)
Surveys American history from colonial times through the Reconstruction era, focusing upon the formation of the United States and the forces promoting unity and division in the new nation. *Satisfies the university general education requirement in Western civilization.*

HST 115 Introduction to American History since 1876 (4)
Surveys American history from Reconstruction to the present, emphasizing the emergence of the United States as an industrial-urban nation with global interests. *Satisfies the university general education requirement in Western civilization.*

HST 210 Science and Technology in Western Culture (4)
A survey of the development of science from antiquity to the present with reference to its technological consequences and influence upon society. *Satisfies the university general education requirement in Western civilization.*

HST 218 History of Michigan (4)
A survey of the political, economic and social history of the state from the Indian and French settlement to the present. Offered in alternate years.

HST 219 United States since 1945 (4)
A survey of American political, economic and social history since World War II.

HST 221 American Diplomatic History (4)
The origin, formulation and development of American foreign policy from the Revolution to the present; topics include the Monroe Doctrine, manifest destiny and imperialism, the Civil War, World Wars I and II, the Cold War and nuclear diplomacy.

HST 222 American Sport History (4)
The place of sport in American society from the colonial period to the present. Several sports are selected to illustrate developments of major historical significance.

HST 223 History of American Cities (4)
History of American cities from pre-industrial America to the present emphasizing the effect of such forces as industrialization, immigration, migration, trade, economic patterns and transportation upon city organization and life.

HST 224 History of American Families (4)
History of American families as social institutions emphasizing the impact of historical events and trends upon family composition, family functions and family life. Includes research in the student's personal family history.

HST 225 Introduction to Ancient History (4)
Surveys the history of the Ancient Near East and the Mediterranean area, including the civilizations of Mesopotamia, Egypt, Persia, Greece and Rome up to the later Roman Empire.

HST 228 Introduction to Environmental History (4)
History of selected human societies' interaction with the natural environment, especially changing relations among population, food and natural resources. Includes the modern world-system and the acceleration of environmental decline.

HST 229 History of Women Since 1750 (4)
Topical study of American and European Women in social historical context from preindustrial times to the present.

HST 250 History of Russia (4)
An introduction to the political, social and intellectual history of Russia and the Soviet Union from the Kievan State to the present.

HST 254 Eastern European History (4)
The historical development of the peoples and states of East-Central Europe and the Balkans — Poland, Ukraine, Czechoslovakia, Hungary, Rumania, Yugoslavia and Bulgaria — from the Middle Ages to the present, with emphasis on the period since World War II.

HST 261 Introduction to Latin American History I (4)
HST 261 is a survey of pre-Columbian and colonial Latin America to 1825, stressing the Hispanization of the society, its socio!economic institutions, the influence of the Enlightenment and the achievement of political independence.

HST 262 Introduction to Latin American History II (4)
Surveys the national period of Latin America from 1825 to the present, emphasizing the problems of nation-building and modernization, the emergence of nationalism and militarism and the roots of social revolutionary ferment.

HST 270 History of Modern Japan (4)
History of Japan from the mid-nineteenth century to the post-World War II reform, recovery and emergence as an economic power.

HST 285 African History (4)
An introduction to the range of African history, from human evolution and Egyptian civilization through the development of divine kingships and international trade, to colonialism and African responses to European conquest.

HST 292 History of the Afro-American People (4)
Surveys the Afro-American experience from the African background through the Civil War and post-Civil War periods to the present.

HST 300 Seminar in Historical Research (4)
The development of critical judgment regarding the nature and use of historical evidence: historiographical readings, library investigation into specific topics within a general historical subject, a research paper and a presentation of the paper to the seminar.
Prerequisite: One history course.

HST 302 American Labor History (4)
The economic, social and political history of the American work force with emphasis on the history of organized labor.

HST 303 American Constitutional History (4)
Origins and development of American constitutional doctrine and interpretation from the colonial period to the present, emphasizing constitutional controversy and change.

HST 304 History of the American Industrial Economy and Society (4)
The development of the American industrial system and its impact on business organization, labor, government and the international economy.

HST 306 Colonial and Revolutionary America (4)
The transplantation of European society to continental North America; the subsequent development of political, economic and social institutions in the colonies; the Anglo-French struggle for the continent; and the American Revolution.

HST 307 American Religious History (4)
A study of American religious history, including religious elements in immigration, separation of church and state, denominationalism and sectarianism, religion and nationalism, religious leadership and religion as a social force. Identical with REL 307.

HST 310 The Young Republic and the Age of Jackson, 1787-1850 (4)
The making of the Constitution, the social, political and economic development of the new nation and the subsequent forces affecting expansion, social protest and sectionalism to 1850. Offered in alternate years.

HST 312 The Civil War and Reconstruction, 1850-1876 (4)
The origins of secession, the wartime problems of the Union and the Confederacy, the principal military campaigns, the Reconstruction era and the creation of a new union, and the significance of the Civil War and Reconstruction in American hsitory. Offered each year.

HST 313 American History, 1876-1900 (4)
The New South, industrial consolidation, the origins of the modern labor movement, the rise of the city, immigration, agrarian protest movements, the businessman's philosophy and the challenge to laissez-faire.

HST 314 American History, 1900-1928 (4)
Social, political and economic developments in the U.S. during the progressive era and the decade of the 1920s. Offered in alternate years.

HST 315 American History since 1928 (4)
The myth of the New Era, the social and political impact of the Great Depression, New Deal programs and radical alternatives, the isolationist-internationalist debate, modern Republicanism and the New Frontier. Offered in alternate years.

HST 316 The American Mind to 1860 (4)
The history of American thought from the colonial period to the Civil War, emphasizing New England Puritanism, the transition from colonies to provinces, the era of the American Revolution and the origins of modern America.

HST 317 The American Mind since 1860 (4)
Major intellectual trends in the United States from the Civil War to the present, including ideological conflict during the Civil War and Reconstruction, the impact of evolutionary thought and responses to industrialization and urbanization.

HST 318 Topics in American Social History (4)
Selected topics in the history of popular beliefs, social structure and organization and the process of social change, including movements of reform.

HST 319 History of the American South (4)
The South from colonial times to the 1960s, emphasizing the transition from the agrarian, slave South of the antebellum period to the modern South of the 20th century.

HST 321 American Diplomatic History in the Twentieth Century (4)
American foreign policy and diplomacy from the Spanish-American War to the present, including American imperialism, Caribbean and Far Eastern policies, involvement in the world wars and the Cold War, and nuclear diplomacy. Offered each year.

HST 323 Topics in Afro-American History (4)
The economic, social and political activities, status, organizations and institutions of Afro-American people, emphasizing the 20th century.

HST 325 Medieval Europe (4)
The European Middle Ages from about A.D. 400 to 1300, with special emphasis on intellectual developments. Offered in alternate years.

HST 326 The Italian Renaissance (4)
The European Renaissance period, with emphasis on the Italian experience. Offered in alternate years.

HST 327 The Northern Renaissance (4)
European humanism, with emphasis on the Lowlands, France and Germany. Offered in alternate years.

HST 329 Europe in the Seventeenth Century (4)
A comparative analysis of European societies: the articulation of absolutism and constitutionalism, the emergence of the European states system, the origins and impact of modern science, the culture of the baroque and the development of commercial capitalism.

HST 334 Victorian and Edwardian England (4)
The political, social, economic and intellectual life of England from 1837 to the outbreak of World War I.

HST 335 Twentieth Century Britain (4)
British adjustment to global wars, the loss of empire, economic weakness and social discord.

HST 338 The Origins of Modern Economics: Smith to Marx (4)
Ideas of the classical economists from Adam Smith to Karl Marx, and how they relate to social and political change in Britain's Industrial Revolution and to more recent economic issues. Offered in alternate years.

HST 341 Europe since 1914 (4)
An analysis of Europe in world perspective since World War I.

HST 343 Germany since 1848 (4)
The history of the German nation-state, concentrating on constitutional and political developments in their social context.

HST 345 France since 1789 (4)
The political development of modern France as a nation-state and the cultural and economic movements connected with French public life.

HST 346 European Witchcraft (4)
A scholarly investigation of witch beliefs and witch trials in Europe, England and New England. The social and intellectual foundations of witchcraft prosecutions from the Middle Ages to the end of the seventeenth century.

HST 348 Europe in the Eighteenth Century (4)
A comparative analysis of European societies: the old regime in Europe, beginnings of industrial development, the Enlightenment as a political and social movement, reform under the monarchy and the emergence of democratic ideologies, and the French Revolution.

HST 349 France in the Age of Absolutism and Enlightenment (4)
The *ancien regime* in France from the end of the wars of religion to the beginning of the Revolution (1589-1789).

HST 350 The European Mind to 1700 (4)
Major developments in European thought from the God-oriented world views of the Middle Ages to the development of scientific concepts in the seventeenth century. Emphasis is on reading original materials.

HST 351 The European Mind since 1700 (4)
European intellectual movements since the eighteenth-century Enlightenment, emphasizing the impact of evolutionary, utilitarian and existentialist theories and the criticism of traditional rationalist assumptions. Emphasis is on reading original materials.

HST 353 Imperial Russia (4)
Russian history from Peter the Great to the Bolshevik Revolution: the growth of Russian national power, westernization, serfdom and revolution.

HST 354 Soviet Russia (4)
Kussia and the Soviet Union from 1917 to the present: revolution and civil war, collectivization and industrialization, Stalinism, World War II, de-Stalinization, the Soviet Union and the world communist movement.

HST 359 Russian Intellectual History to Peter the Great (4)
Main intellectual and cultural developments in Russia before Peter the Great. The Russian Church and religious thought, literature and the development of political ideology will be emphasized.

HST 360 Russian Intellectual History since Peter the Great (4)
Main intellectual and cultural developments since Peter the Great, with emphasis on the nineteenth century. Particular attention is devoted to the slavophiles, the westernizers, the populists and socialists, and several of the great realistic writers.

HST 363 History of Southern South America (4)
The social, political and economic history of Argentina, Brazil and Chile in the nineteenth and twentieth centuries; expansion and Indian warfare; slavery and Empire in Brazil; regionalism and nationalism; industrialization and urbanization; and international relations.

HST 365 Colonialism and Nationalism in the Modern World (4)
A comparative survey of selected European colonial systems and the responses of colonized peoples in Latin America, Africa and Asia. Emphasis on themes such as economic expansion, acculturation, resistance movements and state formation.
Prerequisite: IS 210 or IS 230 or IS 240 or IS 250.

HST 366 Slavery and Race Relations in the New World (4)
A comparative approach to the study of slavery in North America, Latin America and the Caribbean, and to present race relations in these areas.

HST 367 History of Mexico (4)
The scope and achievements of pre-Columbian civilizations, the Spanish Conquest, the emergence of a multiracial society, the achievement of political independence and nation-building in the twentieth century.

HST 370 China: Beginnings through Han to A.D. 220 (4)
The history of China from most ancient times to the downfall of the Han Dynasty in 220 A.D.

HST 371 China: From the Three Kingdoms through Ming, 220-1644 (4)
The history of China to the eve of the Manchu conquest in 1644.

HST 373 China: The Final (Ch'ing) Imperial Phase, 1644-1912 (4)
China under Manchu rule, from the conquest to the collapse of the Confucian imperial order in the early twentieth century.

HST 374 China: The Nationalist Republican Period, 1912-1949 (4)
Revolutionary nationalism and political, social and cultural change under the Chinese Republic from the warlord era to the establishment of the Communist-led People's Republic in 1949, and post 1949 developments in Nationalist-ruled Taiwan.

HST 376 History of Chinese Communism: 1921 to the Present (4)
The revolutionary history of the Chinese Communist movement from its beginning in 1921 to its accession to power in 1949 and the major lines of development under the Chinese People's Republic since 1949.

HST 379 The Ancient Near East and Mediterranean I (4)
The history of the ancient peoples in Mesopotamia, Egypt, Persia, North Africa and the areas of Greek influence to the Hellenistic period of Alexander the Great.
Prerequisite: HST 225 recommended.

HST 380 The Ancient Near East and the Mediterranean II (4)
The history of the ancient peoples in South Western Asia, Northern Africa and Southern Europe from the Hellenistic Period to the age of Justinian (sixth century A.D.).
Prerequisite: HST 225 recommended.

HST 381 History of Early India (4)
The history of India from the most ancient times to the coming of the Mughals in the early 16th century. Offered winter semester in alternate years.

HST 386 Contemporary African History (4)
Colonial and postcolonial economic development, political ideologies and social problems of contemporary Africa. Resistance and revolutionary movements, styles of leadership and building of nations.

HST 391 Directed Readings in History (2, 4 or 8)
Independent but directed readings for junior and senior majors in fields of history in which advanced courses are not available. Offered each semester.
Prerequisite: Permission of instructor.

HST 399 Field Experience in History (4)
Field experience in history, with faculty supervision which incorporates student performance in an occupational setting. May not be repeated for credit.
Prerequisite: 24 credits in history, of which at least 8 must be at the 300-400 level.

HST 481 Seminar in Historiography (4)
Reading and research in topics analyzing the literature of historical inquiry and writing.

HST 491 Directed Research in History (4, 8 or 12)
Directed individual research for advanced history majors. Offered each semester.
Prerequisite: Permission of instructor and History 300.

CENTER FOR INTERNATIONAL PROGRAMS

Director: *Carlo Coppola (Modern Languages and Literatures)*

International Studies Executive Committee: *Richard B. Stamps (Sociology and Anthropology), Peter J. Bertocci (Sociology and Anthropology), Carlo Coppola (Modern Languages and Literatures), Lawrence D. Orton (History), Vincent B. Khapoya (Political Science), Kathryn M. McArdle-Pigott (Modern Languages and Literatures)*

Drawing on faculty from various disciplines, the College of Arts and Sciences sponsors a distinctive offering of international studies programs. International studies involves the examination of living world civilizations (with the exception of those of Western Europe and North America) from an interdisciplinary point of view. The various aspects of these civilizations — art, government, history, language, literature, music, religion and social organization — are studied in the traditional departments of the university.

A major in one of these areas might be considered by a student who, from intellectual curiosity or from career choice, seeks an integrated view of a civilization. Career opportunities in international studies include business and industries with international dimensions, international agencies and foundations, government service, translation, journalism, teaching and graduate study.

The college offers a major in African and Afro-American studies, East Asian studies (China and Japan), South Asian studies (India, Pakistan and Bangladesh), Slavic studies (Russia and Eastern Europe) and Latin American studies. A minor in international studies is also offered. Courses labeled IS are described in this section on pages 87-88. All other courses applicable to international studies programs are offered by individual college departments; descriptions of those courses can be found in respective departmental listings.

Requirements for the liberal arts major in international studies

The international studies major consists of 40 credits, of which 28 credits must be taken in the primary area (African and Afro-American studies, East Asian studies, South Asian studies, Slavic studies or Latin American studies); 12 credits in a complementary area of study; and language proficiency equivalent to 8 credits of work at the third year of study in an appropriate language. The complementary area of study ordinarily consists of the appropriate introductory course and two additional courses appropriate to the area, which may be either international studies courses or departmental courses.

Duplication of course credit in the primary and complementary areas is not permitted. However, majors may apply their introductory course to both their major and general education requirement in international studies.

Departmental honors

Honors are available to outstanding students in the major. For specific information, students should contact the department office.

Requirements for the liberal arts minor in international studies

The minor in international studies consists of 20 credits in a given area of study distributed as follows: appropriate introductory course, appropriate special topics course, appropriate seminar and 8 additional credits chosen from the appropriate program offerings.

African and Afro-American studies program

Coordinator: *Vincent B. Khapoya (Political Science)*

Faculty: *Johnetta Brazzell (Placement and Career Services), Robert L. Donald (English), De Witt S. Dykes, Jr. (History), James D. Graham (History), Karl D. Gregory (Economics), Marvin D. Holladay (Music, Theatre and Dance), James W. Hughes (School of Human and Educational Services), Mary C. Karasch (History), Charlotte V. Stokes (Art and Art History)*

Course requirements for the major in African and Afro-American studies are: IS 230, HST 292, IS 384 and 16 additional credits distributed as widely as possible from the following courses: AH 208, AH 305, AN 352, ENG 342, HST 285, HST 292, HST 323, HST 365, HST 366, HST 386, MUS 347-348, PS 203, PS 333, SOC 331, IS 230, IS 300, IS 384, IS 390 and IS 490. The complementary area of study may be either Latin America or Islamic Civilization. The appropriate language is French, although students whose complementary area is Latin America may elect Spanish. Students must demonstrate a language proficiency equivalent to 8 credits of work at the third year of study in French or Spanish.

East Asian studies program

Coordinator: *Richard B. Stamps (Sociology and Anthropology)*

Faculty: *Bonnie F. Abiko (Art and Art History), Sheldon L. Appleton (Political Science), Janet Krompart (Kresge Library: East Asian librarian), John Marney (Modern Languages and Literatures), Paul M. Michaud (History), Richard B. Stamps (Sociology and Anthropology), Amitendranath Tagore (Modern Languages and Literatures), S. Bernard Thomas (History)*

Course requirements for the major in Chinese studies are IS 210, IS 300, IS 381 and 16 additional credits distributed as widely as possible from the following courses: AH 300, AH 303, AN 362, HST 370, HST 371, HST 373, HST 374, HST 376, PHL 250, PS 318, PS 338, IS 210, IS 300, IS 381, IS 390 and IS 490. The complementary areas of study may be either Japanese or South Asian studies. The appropriate language is Chinese. The Center for International Programs periodically sponsors summer study tours to China.

Course requirements for the major in Japanese studies are IS 220, IS 300, IS 381 and 16 additional credits distributed as widely as possible from the following courses: AH 301, AH 303, HST 270, PHL 250, IS 220, IS 300, IS 361-362, IS 381, IS 390 and IS 490. The complementary area of study may be Chinese or South Asian studies. The appropriate language is Japanese. Students wishing to study in Japan may do so through an exchange program between Oakland University and Nanzan University, Nagoya, Japan.

South Asian studies programs

Coordinator: *Peter J. Bertocci (Sociology and Anthropology)*

Faculty: *Richard W. Brooks (Philosophy), Thomas W. Casstevens (Political Science), Carlo Coppola (Modern Languages and Literatures), Paul M. Michaud (History), Munibur Rahman (Modern Languages and Literatures), Amitendranath Tagore (Modern Languages and Literatures), Richard P. Tucker (History)*

Course requirements for the major in South Asian studies are IS 240, IS 300, IS 382 and 16 additional credits distributed as widely as possible from the following courses: AH 303, AH 320, AN 361, HST 381, PHL 250, PHL 352, PS 334, REL 304, SOC 301, IS 240, IS 270, IS 300, IS 382, IS 390 and IS 490. The complementary area of study may be Chinese studies, Japanese studies or Islamic civilization. The appropriate language is Hindi or Urdu.

Slavic studies program

Coordinator: *Lawrence D. Orton (History)*

Faculty: *Alice C. Gorlin (Economics), Helen Kovach-Tarakanov (Modern Languages and Literatures), James R. Ozinga (Political Science)*

Course requirements for the major in Slavic studies are IS 260, IS 300, IS 383 and 16 additional credits distributed as widely as possible from the following courses: ECN 341, HST 250, HST 254, HST 353, HST 354, HST 359, HST 360, PS 318, PS 337, PS 377, IS 260, IS 300, IS 383, IS 386, IS 390 and IS 490. The complementary area of study may be Chinese studies, Japanese studies or Islamic civilization. The appropriate language is Russian or Polish. The Center for International Programs periodically sponsors summer study tours to the Soviet Union.

Latin American studies

Coordinator: *Kathryn M. McArdle-Pigott (Modern Languages and Literatures)*

Faculty: *William C. Bryant (Modern Languages and Literatures), James W. Dow (Sociology and Anthropology), Lucinda Hart-Gonzalez (Linguistics, Sociology and Anthropology), Edward J. Heubel (Political Science), Mary C. Karasch (History), Charlotte V. Stokes (Art and Art History)*

Course requirements for the major in Latin American studies are IS 250, IS 300, IS 385 and 16 additional credits distributed as widely as possible from the following courses: AH 307, AN 370, AN 371, AN 372, HST 261, HST 262, HST 363, HST 365, HST 366, HST 367, PS 335, SPN 420, SPN 421, IS 250, IS 300, IS 368, IS 385, IS 390 and IS 490. The complementary area of study is African studies. The appropriate language is Spanish or Portuguese. The Center for International Programs periodically sponsors summer study programs in Mexico.

Course Offerings

IS 210-270 Introductory Courses (4 each)
An interdisciplinary study of the peoples of a specific area and their traditional and modern civilizations. Students should enroll in the course number corresponding to a specific area:

IS 210 Introduction to China
Satisfies the university general education requirement in international studies.

IS 220 Introduction to Japan
Satisfies the university general education requirement in international studies.

IS 230 Introduction to Africa
Satisfies the university general education requirement in international studies.

IS 240 Introduction to India
Satisfies the university general education requirement in international studies.

IS 250 Introduction to Latin America
Satisfies the university general education requirement in international studies.

IS 260 Introduction to Russia and Eastern Europe
Satisfies the university general education requirement in international studies.

IS 270 Introduction to the Middle East
Satisfies the university general education requirement in international studies.

IS 300 Special Topics in International Studies (4)
Interdisciplinary study of a foreign area for which no regular course offerings exist. May be repeated once for a total of 8 credits.
Prerequisite: Appropriate IS introductory course.

IS 361-362 Japan Exchange Program (16-18)
Course work is taken at Nanzan University in Nagoya, Japan; includes Japanese language study and additional appropriate courses with English as the language of instruction.

IS 368 Summer Program in Mexican Studies (8)
Oakland faculty and Mexican faculty present summer courses focusing on Mexican culture: history, art, political and social problems, folk arts, archaeology, Chicano studies, intensive language and Mexican literature. Courses conducted in both Spanish and English. May be repeated once for additional credits with consent of the Latin American studies coordinator.

IS 380-385 Seminars (4)
Selected topics dealing with a specified area, to supplement departmental area courses. Students enroll under the number corresponding to a specific area. May be repeated once for a total of 8 credits.
Prerequisite: Senior standing and permission of instructor.

IS 380 Seminar in Afro-American Studies

IS 381 Seminar in East Asian Studies

IS 382 Seminar in South Asian Studies

IS 383 Seminar in Russian and Eastern European Studies

IS 384 Seminar in African Studies

IS 385 Seminar in Latin American Studies

IS 386 Slavic Folk Studies (2)
An intensive survey of the traditional music, songs, dances, and costumes of selected Slavic cultures. Includes participation in the Slavic Folk Ensemble. May be repeated once for a total of 4 credits. Graded S/U.

IS 390 Directed Readings in International Studies (2, 4, 6 or 8)
Readings from diverse disciplines with focus on a student's area of specialization. Conducted as a tutorial by an instructor chosen by the student.
Prerequisite: Appropriate IS introductory course and permission of program chairperson and instructor.

IS 490 Directed Research in International Studies (2, 4, 6 or 8)
Research relating to area of specialization including a senior essay or research paper. Supervised by an international studies instructor.
Prerequisite: Senior standing and permission of program chairperson and instructor.

DEPARTMENT OF LINGUISTICS

Chairperson: *William Schwab*

Professors: *Peter J. Binkert (Linguistics, classics) and William Schwab (Linguistics, English)*

Associate professor: *Daniel H. Fullmer (Linguistics, English)*

Assistant professor: *Lucinda Hart-Gonzalez (Linguistics, Sociology and Anthropology)*

Associated faculty: *Professors Carlo Coppola (Modern Languages and Literatures, Linguistics) and Donald C. Hildum (Rhetoric, Communications and Journalism, Linguistics); Associate Professors John W. Barthel (Modern Languages and Literatures, Linguistics) and Don Iodice (Modern Languages and Literatures, Linguistics); and Assistant Professor Alice S. Horning (Rhetoric, Communications and Journalism, Linguistics)*

Linguistics is concerned with the objective study of language, language history, comparison of languages and with theories about human languages and their implications in language acquisition and learning theory. As recent research has indicated, linguistics plays a pivotal role in studies dealing with the nature of the mind. Rapid expansion of knowledge in linguistics has involved such fields as anthropology, computer and information science, language teaching, speech pathology, sociology, and dialectology, and has produced the new disciplines of biolinguistics, computational linguistics, psycholinguistics and sociolinguistics as exciting and viable fields.

The Department of Linguistics offers a cross-disciplinary liberal arts major in linguistics leading to the Bachelor of Arts degree, a modified liberal arts major in linguistics with a concentration in computer and information science, concentrations in linguistics with a modified major in departments of the College of Arts and Sciences, and a minor in linguistics.

The department also offers a graduate program with several specializations in linguistics. For more information, see the *Oakland University Graduate Catalog.* Students interested in a secondary teaching major in language arts should consult the chair or the chief academic adviser of the department.

Requirements for the liberal arts major in linguistics

To earn a liberal arts major in linguistics, students must complete:

1. 32 credits in linguistics courses to include LIN 301, LIN 403 and LIN 404. Only 12 of these credits may be in ALS courses.
2. 8 credits in a cognate area — anthropology, computer science and engineering, English, modern languages, philosophy, psychology, sociology or communication arts.
3. Either:
   a) one year of foreign language study or demonstrated first-year proficiency or one year of American Sign Language, or
   b) two semesters of LIN 410: "Studies in the Structure of a Language," one Indo-European and one non-Indo-European.

Requirements for the modified major in linguistics with a minor in computer science and engineering

To earn the minor, students must complete:

1. 24 credits in linguistics courses to include LIN 301, LIN 403 and LIN 404. Only 8 of these credits may be in ALS courses.
2. 16 credits in CSE, including CSE 125, CSE 220 and CSE 335, and one elective.
3. PHL 370.

Departmental honors

The Department of Linguistics offers departmental honors to students who achieve a grade point average of 3.60 or above in specified courses. In the case of the liberal arts major the courses include the eight required LIN and ALS courses and the two courses in the cognate area. In the case of the modified major with a concentration in computer science and engineering the courses include the six required LIN and ALS courses, the four required CSE courses and PHL 370.

The department also recommends honors for students who have modified majors in other departments with concentrations in linguistics.

Requirements for the liberal arts minor in linguistics

Twenty credits in linguistics courses, to include:

1. ALS 176 or one 200-level LIN course
2. LIN 301
3. At least 12 credits at the 300 or 400 levels
4. At least 4 credits at the 400 level

Requirements for a concentration in linguistics with modified majors in other departments

Students may elect a modified major in anthropology, communication arts, English, philosophy, psychology, or sociology, and may concentrate in linguistics at the same time. Requirements are:

1. 20 credits in LIN or ALS courses, including:
   a) LIN 301
   b) For a major in: anthropology, ALS 375; communication arts, LIN 401; English, LIN 303; philosophy, LIN 407; psychology, ALS 335; sociology, ALS 376
2. For requirements in the modified majors, consult the appropriate department.

Course Offerings

APPLIED LANGUAGE STUDIES

ALS 102 Studies in Vocabulary and Etymology (4)
A basic course in vocabulary building. The origin of scientific and literary terms; foreign phrases in current use; borrowing of words into English from other languages, the relationship between meaning and culture; and meaning and context. Course not applicable to LIN programs.

ALS 176 The Humanity of Language (4)
An introduction to the interrelationships of language and other cultural subsystems. Linguistic knowledge, the child's acquisition of language, sound and writing systems, meaning and communication, language and social groups are among the topics discussed. *Satisfies the university general education requirement in language.*

ALS 200 Techniques of Effective Reading (2)
A practical approach to techniques of critical reading for better comprehension through study of linguistic and other patterns, as well as meaning, in college-level assignments. Frequent exercises supplement the examination of reading techniques. Course not applicable to LIN programs.

ALS 334 Language Development in Children (4)
Language acquisition in normal and abnormal children: stages of the acquisition process; the role of the environment; the relationship between language and the development of other skills; language acquisition in children with sensory or psychological disorders.
Prerequisite: ALS 176 or one course in LIN.

ALS 335 Psycholinguistics (4)
The psychology of language, the accommodation between the cognitive and physical structure of humans and the structure of language, the nature of the language learning process, and the consequences of language use. Identical with PSY 335.
Prerequisite: One course in ALS or LIN and one course in PSY.

ALS 340 The Biology of Language (4)
Animal communication and the evolution of man's capacity for language; development of language in normal and abnormal children, disorders of speech, hearing and language, language and the brain, and genetic aspects of language.
Prerequisite: ALS 176 or one course in LIN.

ALS 360 Neurolinguistics (4)
The neurology of language: essentials of neuroanatomy; neurological mechanisms underlying language; aphasia and kindred disorders of speech; the relationship of language to memory, intelligence, and cognition; language and mental retardation and psychological disorders.
Prerequisite: ALS 176 or one course in LIN.

ALS 373 Ethnography of Communication (4)
The systematic description of the interaction of linguistic form, participants, setting and modes of interaction. Comparison of similar communicative events in simple and complex societies. Readings and guided student research. Identical with AN 373.
Prerequisite: One course in ALS or LIN or AN 102 or SOC 100.

ALS 374 Cross-Cultural Communication (4)
A theoretical and practical examination of the role of language and nonverbal modes in intercultural communication. Problems and strategies for developing awareness of and operational skills in intercultural processes. Identical with AN 374 and SCN 374.
Prerequisite: One course in ALS or LIN.

ALS 375 Language and Culture (4)
Language viewed as cultural behavior, its system, acquisition and use; its relation to history, attitudes and behavior; standard languages; social dialects; pidgins and creoles. Identical with AN 375.
Prerequisite: One course in ALS, LIN or AN 102.

ALS 376 Sociolinguistics (4)
Language in its social context; intrasocietal variation; social evaluation of language varieties (style, dialect) as an influence in language change; and the choice of a language variety as an index of group solidarity, social ideology and individual attitudes. Identical with SOC 376.
Prerequisite: One course in ALS or LIN or SOC.

ALS 420 Linguistics and Reading (4)
A study of the English writing system: a close examination of spelling and morphology, ambiguity, dialect interference and derivational vocabulary.
Prerequisite: LIN 301.

ALS 428 The Teaching of English as a Second Language (4)
Approaches, methods and techniques of teaching pronunciation; grammar and vocabulary. The use of language tests and laboratory techniques.
Prerequisite: LIN 301.

ALS 429 Practicum (2 or 4)
Supervised experience in some area of applied linguistics, such as working with nonnative speakers of English, tutoring, or other appropriate field work or internship, to be approved by the Department of Linguistics.
Prerequisite: ALS 428.

ENGLISH AS A SECOND LANGUAGE

ESL 100 Semi-Intensive English — Listening, Speaking and Writing (4)
Concentrates on aural comprehension of adapted and unadapted materials and practice in pronunciation and grammar for communicative competence. Daily practice in writing of acceptable English sentences and short discourse, up to the paragraph. Emphasis on basic grammar.
Prerequisite: English Language Proficiency Test.

ESL 101 Semi-Intensive English — Reading (4)
Practice in reading comprehension, including short sentences from college texts. Reading materials focus on cultural orientation, particularly to the American university and prevailing teaching, learning and testing styles.
Prerequisite: ESL 100 or English Language Proficiency Test.

LINGUISTICS

LIN 115 Natural and Artificial Languages (4)
A study of the similarities and differences among the languages of men, beasts and machines. Includes general characteristics of communication, human linguistic abilities, computer languages and human/computer interfaces. Identical with CSE 115. *Satisfies the university general education requirement in mathematics, logic and computer science.*

LIN 204 Syntax (4)
An introduction to the basic principles of morphological and syntactic structure with emphasis on modern American English.

LIN 207 Semantics (4)
The study of meaning, which involves the relation between speaker, the language and the real, or imagined, world. Attention is given to modern theories about the organization of thought. Identical with SCN 207. *Satisfies the general education requirement in language.*

LIN 300 Topics in Linguistics (4)
Topics and problems selected by the instructor.

LIN 301 Linguistic Structures (4)
An introduction to synchronic linguistic analysis, with structural problems in natural languages.
Prerequisite: ALS 176 or one 200-level LIN course.

LIN 302 Historical Linguistics (4)
Diachronic linguistic analysis: language change, dialect geography, establishment of genealogical relationships, the reconstruction of earlier stages of languages and the relationship of language change to synchronic analysis.
Prerequisite: LIN 301.

LIN 303 Sound Patterns of American English (4)
The fundamentals of articulatory phonetics with studies in American social and geographic dialects.
Prerequisite: ALS 176.

LIN 315 Computer Parsing of Natural Languages (4)
An examination of the syntactic and semantic properties of natural language and a survey of the techniques for computer parsing. Student projects in the computer analysis of language. Identical with CSE 315.
Prerequisite: LIN 115 or ALS 176 and CSE 130.

LIN 401 Phonetic Theory (4)
An introduction to articulatory and acoustic descriptions of spoken language and training in the recognition and production of sounds found in languages other than English. Identical with SCN 401.
Prerequisite: LIN 301.

LIN 403 Phonological Theory (4)
A presentation of theory and application of phonological analysis with emphasis on original work.
Prerequisite: LIN 301.

LIN 404 Syntactic Theory (4)
A presentation of theory and application of morphological and syntactic analysis, with emphasis on original work.
Prerequisite: LIN 301.

LIN 407 Semantic Theory (4)
An inquiry into comtemporary efforts to formulate and articulate a theory of meaning adequate for the analysis of natural language, with emphasis on the relation between syntactic and semantic analysis.
Prerequisite: LIN 301.

LIN 410 Studies in the Structure of a Language (4)
A study of the structural aspects of an individual language to be determined by the instructor. Among the languages for study are French, German, Hindi-Urdu and Sanskrit.
Prerequisite: LIN 301.

LIN 475 Philosophy of Language (4)
Identical with PHL 475.

LIN 480 Seminar in Linguistics (4)
Topics and problems selected by the instructor.
Prerequisite: LIN 301.

LIN 490 Independent Study (2 or 4)
Special research projects in linguistics.
Prerequisite: Permission of Department of Linguistics.

DEPARTMENT OF MATHEMATICAL SCIENCES

Chairperson: *Donald G. Malm*

Professors: *Harvey J. Arnold, Louis R. Bragg, John W. Dettman, George F. Feeman, G. Philip Johnson, Donald G. Malm, James H. McKay, Irwin E. Schochetman*

Associate professors: *Baruch Cahlon, Charles C. Cheng, J. Curtis Chipman, David J. Downing, Jon Froemke, Jerrold W. Grossman, Eli Maor, Louis J. Nachman, Subbaiah Perla, Darrell Schmidt, Sze-Kai Tsui, J. Barry Turett, Stuart S. Wang, Stephen J. Wright*

Assistant professors: *Asuman Aksoy, Kevin T. Andrews, Mary B. Coffey, Marcia Feingold, T. N. Subramaniam, Edward B. DeVol, Devadatta Kulkarni*

Visiting associate professor: *Daniel Grove*

Adjunct professors: *Joseph Assenzo, Seth Bonder, Gary C. McDonald, Edward F. Moylan, John A. Scott*

Visiting instructor: *David Cassell*

The Department of Mathematical Sciences offers programs of study leading to the Bachelor of Arts degree with a major in mathematics, Bachelor of Science degree with a major in mathematical sciences, Master of Science degree in applied mathematics, Master of Science degree in applied statistics and Master of Arts in Teaching in mathematics. In addition, the department offers courses that are required or recommended as electives in other academic programs. For further information on the graduate programs offered by the department, see the *Oakland University Graduate Catalog.*

Whether in the B.A. or B.S. program, students are encouraged to elect a variety of applied courses, both inside and outside of the department. The greater the familiarity with applications of mathematics, the greater the possibilities of employment in a world that is becoming more mathematics-oriented each year. Concentrations or minors, or even second majors, are available in computer science, the life sciences, the physical sciences, engineering, economics and management, the social sciences and linguistics. Mathematics majors are advised to consult department faculty before planning their programs.

The department recommends that all students majoring or minoring in mathematics, in either the B.A. or B.S. program, acquire in their first or second year a programming ability at the level of CSE 132. Additional programming requirements exist for B.S. degree candidates.

Prerequisites and placement examinations

Each student enrolling in a course offered by the Department of Mathematical Sciences must meet the prerequisites for that course. Students who do not meet the prerequisites will not be permitted to enroll or remain enrolled in the course.

The prerequisites may be met in a number of ways: by completing the stated prerequisite course(s) with a grade of 2.0 or better; by completing an equivalent course at another university, college or community college with a grade of 2.0 or better; or by placing sufficiently high on the placement test given by the department.

Grades below 2.0 in prerequisite courses are not acceptable, nor are high school courses. In rare cases, the department may grant permission to enroll in a course without the formal prerequisites; students with unusual circumstances should consult the instructor of the course or a department adviser.

The placement test covers the algebra and trigonometry that are normally taught in good high school college-preparatory programs. Successful performance on the placement test will enable a student to enter a regular college-level math course (MTH 121, MTH 122, MTH 154, MTH 185, STA 225, MTE 212 or MTE 213) without having to take MTH 111* ("Elementary Algebra"), MTH 112* ("Intermediate Algebra") or MTH 141 ("Precalculus").

Students who test deficient in these subjects must take the appropriate prerequisite course(s) — or their equivalent(s) at another university, college or community college — before attempting the regular courses. The levels of placement are as follows:

E: The student must start in MTH 111*

I: The student has demonstrated competence through MTH 111* and is ready for MTH 112* or MTH 185

R: The student has demonstrated competence through MTH 112* and is ready for MTH 121, MTH 141, MTH 185, MTE 212, MTE 213 or STA 225

C: The student has demonstrated competence through MTH 141 and is ready for MTH 121, MTH 122, MTH 154, MTH 185, MTE 212, MTE 213 or STA 225

Formal course competency credit is not available in MTH 111*, MTH 112* or MTH 141.

Skill development courses: MTH 111 and MTH 112

MTH 111 and MTH 112 are skill development courses specially designed to aid incoming students who have significant deficiencies in their mathematics background. Effective September 1988, these courses will be renumbered to MTH 011 and MTH 012 respectively. After this date, credits earned in these courses may no longer be used to satisfy minimal graduation requirements in any academic program.

Requirements for the liberal arts major in mathematics, B.A. program

To earn the Bachelor of Arts degree with a major in mathematics, students must:

1. Complete a minimum of 41 credits in mathematical sciences: MTH 154, MTH 155, MTH 254, MTH 256, MTH 351, MTH 475, STA 226, APM 257 or APM 263, and additional courses labeled APM, MOR, MTH or STA that are above the 300 level, including one course above the 400 level other than MTH 414 or MTH 497. (MTH 414, however, can count toward the major.)
2. Complete five courses outside the Department of Mathematics in areas related to mathematics. It is recommended that at least two of these courses be in science.
3. Earn a minimum grade of 2.0 in each mathematical science course used to satisfy the major requirements in mathematical sciences.

Students interested in a secondary teaching major in mathematical sciences should consult the chair or the chief academic adviser of the department.

Requirements for the major in mathematical sciences, B.S. program

To earn the Bachelor of Science degree with a major in mathematics, students must:

1. Complete a core of 26 credits in mathematical sciences: MTH 154, MTH 155, MTH 254, MTH 256, APM 257, APM 331, STA 226.
2. Complete an approved program of 20 additional credits in mathematical sciences courses from the areas below, including at least two courses from a single area, with at least two areas represented:
   a. Applicable analysis and mathematical modeling (APM 332, APM 357, APM 435, APM 455)
   b. Discrete mathematics (APM 263, APM 463)
   c. Numerical analysis (APM 335, APM 336)
   d. Operations research (MOR 342, MOR 346)

*See information concerning these courses on page 97.

e. Pure mathematics (MTH 351, MTH 352, MTH 361, MTH 372, MTH 415, MTH 453, MTH 461, MTH 465, MTH 475, MTH 476)
f. Statistics (STA 322, STA 323, STA 324, STA 425, STA 427, STA 428).

3. Complete 16 credits in an area related to the student's option outside the department.
4. Earn a minimum grade of 2.0 in each mathematical sciences course used to satisfy the major requirements in mathematical sciences.
5. Complete CSE 132 and CSE 262 with an average grade of at least 2.0 (or equivalent).

Departmental honors

Departmental honors may be awarded to graduating seniors in either the B.A. or the B.S. degree program who have demonstrated outstanding achievement in their mathematics course work, as evidenced by high grades, high level courses and/or more than a minimum number of courses. Further information is available from the department chairperson.

Requirements for the liberal arts minor in mathematics

To qualify for the liberal arts minor in mathematics, a student must take 20 credits of departmental course work beyond MTH 154. These credits must include MTH 155, MTH 254 and MTH 256. Two additional courses must be chosen from among STA 226, MTH 351, APM 257, APM 331, APM 263 or any 400-level course from the APM, MOR, MTH or STA listings except MTH 414 and MTH 497.

Students majoring in engineering or computer and information science should consult "Concentrations and minors" in the School of Engineering and Computer Science section of this catalog (page 224) for information on minors in applied mathematics and applied statistics.

Requirements for the secondary teaching minor in mathematics

To qualify for the secondary teaching minor in mathematics, a student must take 20 credits of departmental course work. Only MTH 154 and courses with at least MTH 154 as a prerequisite may be used to satisfy this requirement. It is recommended that the student select his or her courses from among MTH 154, MTH 155, MTH 254, MTH 256 and MTH 361; APM 257, APM 263, APM 331 and APM 332; STA 226 and STA 322; and MOR 342 and MOR 346.

In addition to the field experiences required for secondary education certification (tutoring in ED 428 and student teaching in ED 455), other field experiences are available in several areas of community service. Interested students should consult the department chairperson for detailed information.

Minor in computer science for mathematics majors

The requirements for a minor in computer science are determined by the School of Engineering and Computer Science. For this minor, students must complete 20 credits of CSE courses from the following:

1. A maximum of 8 credits from CSE 125, CSE 130 and CSE 132.
2. A maximum of 8 credits from CSE 220, CSE 248, CSE 280 and CSE 262.
3. A maximum of 4 credits from the "Programming Language Labs."
4. A minimum of 8 credits taken from CSE 335, CSE 340, CSE 343, CSE 345 or any other 400-level CSE course approved by your adviser.

Course Offerings

MATHEMATICS

MTH 100 Topics in Elementary Mathematics (2 or 4)
A selection of topics designed to develop the student's awareness and appreciation of mathematics with an emphasis on problem solving. Includes individualized reinforcement of basic arithmetic skills, as well as a laboratory and reading component.
Prerequisite: Placement in Summer Support Program.

MTH 111* Elementary Algebra (4)
Review of order of operations, integral exponents, square roots; linear equations in one variable, polynomial arithmetic, factoring, quadratic equations, points and lines in the coordinate plane, 2 by 2 and 3 by 3 systems of linear equations, story problems, absolute value linear inequalities in one variable intervals on the real line. *Effective September 1988, MTH 111* will be numbered MTH 011. Credits earned after this date may not be used to satisfy minimal graduation requirements in any academic program.*
Prerequisite: Some previous exposure to algebra recommended.

MTH 112* Intermediate Algebra (4)
Algebraic fractions, nonlinear inequalities, analytic geometry (distance, circles, parabolas, hyperbolas), the algebra of exponents, radicals and logarithms; problem solving. *Effective September 1988, MTH 112* will be renumbered MTH 012. Credits earned after this date may not be used to satisfy minimal graduation requirements in any academic program.*
Prerequisite: MTH 111* or placement.

MTH 121 Linear Programming, Elementary Functions (4)
Systems of equations, matrices, linear programming (simplex method); rational, exponential and logarithmic functions. *Satisfies the university general education requirement in mathematics, logic and computer science.*
Prerequisite: MTH 112* or placement.

MTH 122 Calculus for the Social Sciences (4)
The basic concepts, theorems and applications to the social sciences of the differential and integral calculus of one and several variables. *Satisfies the university general education requirement in mathematics, logic and computer science.*
Prerequisite: MTH 121 or MTH 141 or placement.

MTH 141 College Algebra and Trigonometry (4)
Functions, roots of polynomials, analytic geometry, rational, exponential and logarithmic functions, trigonometric functions (including graphs, identities, inverse functions, equations and applications), complex numbers, induction, series and sequences.
Prerequisite: MTH 112* or placement

MTH 154-155 Calculus (4 each)
A comprehensive study of analytic geometry, limits, differentiation and integration of functions of one real variable, including transcendental functions, infinite series, indeterminate forms, polar coordinates, numerical methods and applications. Each is offered fall and winter semester. *MTH 154 satisfies the university general education requirement in mathematics, logic and computer science.*
Prerequisite: MTH 141 or placement.

MTH 185 Mathematics — An Exploration into Undergraduate Topics (4)
Topics selected from probability, calculus, linear algebra, group theory, number theory, abstract algebra, topology, projective geometry, logic and foundations. *Satisfies the university general education requirement in mathematics, logic and computer science.*
Prerequisite: MTH 111* or placement.

MTH 254 Multivariable Calculus (4)
Study of vectors, polar coordinates, three-dimensional geometry, differential calculus of functions of several variables, exact differential equations, multiple integrals, line and surface integrals, and vector fields.
Prerequisite: MTH 155.

MTH 256 Introduction to Linear Algebra (3)
An introduction to systems of linear equations, vectors and matrices with emphasis on applications and computational techniques. Gaussian elimination, matrix algebra, determinants, eigenvalues and eigenvectors, linear transformations, vector spaces.
Prerequisite: MTH 155.

MTH 290 Independent Study (2 or 4)
Reading or research on some mathematical topic.
Prerequisite: Permission of department.

MTH 351 Introduction to Analysis (4)
A rigorous introduction to sets, sequences, series, topology of the real line, functions, continuity, uniform convergence, differentiation, Riemann integration and Fundamental Theorem of Calculus.
Prerequisite: MTH 254 and MTH 256.

MTH 352 Complex Variables (4)
A study of analytic functions of a complex variable including differentiation and integration, series representations, the theory of residues and applications.
Prerequisite: MTH 254.

MTH 361 Geometric Structures (4)
A study of topics from Euclidean geometry, projective geometry, non-Euclidean geometry and transformation geometry.
Prerequisite: MTH 256 or permission of instructor.

MTH 372 Number Theory (4)
Number-theoretic functions, diophantine equations, congruences and quadratic residues.
Prerequisite: MTH 155.

MTH 405 Special Topics (2 or 4)
Advanced study of some topic in mathematics. May be taken more than once.
Prerequisite: Permission of department.

MTH 414 History of Mathematics (4)
Mathematics from ancient to modern times, its growth, development and place in human culture.
Prerequisite: MTH 351 or APM 331.

MTH 415 Foundations of Mathematics (4)
An examination of the logical foundations of mathematics including analysis of the axiomatic method, basic set theory, cardinal and ordinal numbers, and the axiom of choice.
Prerequisite: MTH 351 or APM 331.

MTH 453 Multivariable Analysis (4)
The topology of R_n, curves in R_n, derivatives and differentials, Lagrange multipliers, Taylor's formula, inverse and implicit function theorems, manifolds, multiple integrals, multilinear forms, differential forms and closed and exact forms.
Prerequisite: MTH 351 or APM 331.

MTH 461 General Topology (4)
A study of topological spaces and continuous functions. Separation and countability properties, connectedness, compactness and local properties.
Prerequisite: MTH 351 or APM 331.

MTH 465 Differential Geometry (4)
Theory of curves and surfaces in Euclidean space with an introduction to the theory of matrix Lie groups.
Prerequisite: MTH 351 or APM 331.

MTH 475-476 Abstract Algebra (4 each)
Algebra of sets and mappings, groups and homomorphisms, rings and ideals, factorization and divisibility, vector spaces, linear transformations, fields and field extensions.
Prerequisite: MTH 256.

MTH 490 Independent Study (2 or 4)
Research on some mathematical topic.
Prerequisite: Permission of department.

MTH 497 Apprentice College Teaching (2 or 4)
Open to any well-qualified upperclassperson who obtains consent of a faculty member to assist in presenting a regular college course. The apprentice should be capable of assuming limited classroom teaching duties.
Prerequisite: Permission of department.

APPLICABLE ANALYSIS AND MATHEMATICAL MODELING

APM 257 Introduction to Differential Equations (3)
An introduction to the basic methods of solving ordinary differential equations, including the methods of undetermined coefficients, variation of parameters, series, Laplace transforms and numerical methods. Separable, exact and linear equations. Applications.
Prerequisite: MTH 155.

APM 263 Discrete Mathematics (4)
An introduction to discrete mathematical structures with emphasis on their application to computer and information science. Topics drawn from the areas of set theory and relations, Boolean algebras, strings and graphs. Some programming experience is recommended.
Prerequisite: MTH 155.

APM 331 Applied Analysis (4)
Infinite series. Uniform and absolute convergence, differentiation and integration of series. Taylor's formula and series. Advanced calculus — the derivative as a linear transformation, multiple integration.
Prerequisite: MTH 254 and MTH 256.

APM 332 Applied Matrix Theory (4)
Eigenvalues, eigenvectors and their applications, matrix calculus, linear differential equations, Jordan canonical forms, quadratic forms. Time will also be spent on various computational techniques.
Prerequisite: MTH 256 and APM 257.

APM 335-336 Introduction to Numerical Analysis (4 each)
An introduction to mathematical methods appropriate to computer work. Topics include interpolation, approximation, quadrature, solution of differential equations and matrix computation.
Prerequisite: MTH 254 and MTH 256.

APM 357 Elements of Partial Differential Equations (4)
Partial differential equations of physics, Fourier methods, Laplace transforms, orthogonal functions, initial and boundary value problems and numerical methods.
Prerequisite: APM 257.

APM 405 Special Topics (2 or 4)
Advanced study of a selected topic in applied mathematics. May be taken more than once.
Prerequisite: Permission of department.

APM 435 Introduction to Mathematical Science (4)
The algebraic structures of scientific phenomena. Differential equations and dynamical systems. Partial differential equations of the physical and life sciences. Introduction to mathematical modeling.
Prerequisite: APM 257 and MTH 257.

APM 455 Intermediate Ordinary Differential Equations (4)
Review of elementary techniques, existence and uniqueness theory, series methods, systems of equations, oscillation and comparison theorems, Sturm-Liouville Theory, stability theory and applications.
Prerequisite: APM 257 and APM 331 or MTH 351.

APM 463 Graph Theory and Combinatorial Mathematics (4)
Introduction to combinatorics. Topics include techniques of enumeration, fundamental concepts of graph theory, applications to transport networks, matching theory, and block design.
Prerequisite: MTH 256 and APM 263.

APM 490 Independent Study (2 or 4)
Reading or research on some topic in applied mathematics.
Prerequisite: Permission of department.

STATISTICS

STA 225 Probability and Statistics (4)
Descriptive statistics, probability, binomial and normal distributions, sampling methods, confidence intervals, hypothesis testing, regression and correlation, chi-square tests. *Satisfies the university general education requirement in mathematics, logic and computer science.*
Prerequisite: MTH 112* or placement.

STA 226 Applied Statistics (4)
Introduction to statistics as applied to the physical, biological and social sciences and to engineerin
tions of special distributions and nonparametric techniques. Regression analysis and analysis
Prerequisite: MTH 122 or MTH 154.

STA 322 Regression Analysis (4)
Basic results from probability and statistics, linear regression, model testing and transformations, mat
in multiple regression, polynomial regression, indicator variables, stepwise and other search p
Prerequisite: STA 226 or permission of instructor.

STA 323 Design of Experiments (4)
Planning of experiments, completely randomized, randomized block and Latin square designs, i
blocks, factorial and fractional factorial designs, confounding, response surface methodology.
Prerequisite: STA 226 or permission of instructor.

STA 324 Data Analysis (4)
Selected topics in statistical methodology with major emphasis on analysis of categorical dat
parametric methods for location and scale.
Prerequisite: STA 226 or permission of instructor.

STA 405 Special Topics (2 or 4)
Advanced study of a selected topic in statistics. May be taken more than once.
Prerequisite: Permission of department.

STA 425 Elements of Stochastic Processes (4)
Random walk models, Markov chains and processes, birth and death processes, queuing proc
sion processes and non-Markov processes.
Prerequisite: STA 226 and APM 331.

STA 427-428 Introduction to Mathematical Statistics (4 each)
The distribution of random variables, conditional probability and stochastic independence, spec
tions, functions of random variables, interval estimation, sufficient statistics and completeness, po
tion, tests of hypothesis and analysis of variance.
Prerequisite: MTH 254, MTH 256 and STA 226; or permission of instructor.

STA 490 Independent Study (2 or 4)
Reading or research on some statistical topic.
Prerequisite: Permission of department.

OPERATIONS RESEARCH

MOR 342 Introduction to Operations Research (4)
Topics will be drawn from deterministic models of operations research, such as linear program
work analysis, dynamic programming, inventory control and integer programming.
Prerequisite: MTH 256 or MTH 121 and MTH 122 with 3.0 or better.

MOR 346 Stochastic Models in Operations Research (4)
Stochastic processes including Markov chains with applications to the development and analys
ing models. Further topics drawn from such areas as reliability, decision analysis, stochastic inve
trol and simulation.
Prerequisite: MTH 254 and STA 226 or MTH 122 and QMM 250 with 3.0 or better.

MATHEMATICS FOR ELEMENTARY EDUCATION MAJORS

MTE 212 Mathematics for Elementary Teachers I (3)
Elementary set theory, historical numeration systems. Various representations of rational numbers. A
for addition, subtraction, multiplication and division of rational numbers. Problem solving. Enrollme
to elementary education majors.
Prerequisite: MTH 112* or placement.

MTE 213 Mathematics for Elementary Teachers II (3)
Fundamental concepts of Euclidean and transformational geometry, measurement, counting principles, probability and descriptive statistics. Problem solving. Enrollment is limited to elementary education majors.
Prerequisite: MTH 112* or placement.

MTE 317 Vector Geometry (4)
Geometry of the plane and space studied by means of vectorial ideas, independence of a set of vectors, and linear transformations. Mathematics laboratory project. Enrollment is limited to elementary education majors.
Prerequisite: MTE 213.

MTE 410 Elementary School Mathematics and the Computer (4)
Selected topics in mathematics useful to elementary school teachers in line with current curriculum developments. Computer-assisted programs will be emphasized. Enrollment is limited to elementary education majors.
Prerequisite: MTE 212.

MTE 418 Theory of Equations (4)
Solution of equations in one unknown. Descartes' rule of signs, intermediate value theorem, Euclidean algorithm for polynomials, basic numerical methods for finding roots and systems of equations. Enrollment is limited to elementary education majors.
Prerequisite: MTE 212.

*See information concerning this course on page 97.

DEPARTMENT OF MODERN LANGUAGES AND LITERATURES

Chair: *David Jaymes*

Professors: *Carlo Coppola (Hindi-Urdu), Alfred J. DuBruck (French), Jack R. Moeller (German), Norman Susskind (French), Amitendranath Tagore (Chinese)*

Associate professors: *John W. Barthel (German), William C. Bryant (Spanish), Dolores M. Burdick (French), Renate Gerulaitis (German), Don R. Iodice (French), David Jaymes (French), John Marney (Chinese), Kathryn M. McArdle-Pigott (Spanish), Munibur Rahman (Hindi-Urdu)*

Chief adviser: *Jack R. Moeller*

The Department of Modern Languages and Literatures offers programs leading to the Bachelor of Arts degree. The aim of the modern language curriculum is to help students acquire competence in the language of a given country or countries and, through the study of literature and civilization, to acquaint them with the cultural background of the country or countries. It also prepares students for graduate work, teaching, and careers in business or government service.

Students may wish to investigate the advantages of combining a knowledge of foreign languages and cultures with competence in other fields. There are standard concentrations, for example, in linguistics. Other majors such as political science, English, art and music are enriched by the knowledge of a foreign language and culture. Students interested in study or work abroad, graduate study or non-academic careers should get help from special advisers in the department familiar with the possibilities in these areas.

The selection of a foreign language should be a reasoned one. It is usually best to continue with a language begun in high school. However, students who wish to learn a language not widely taught at the secondary level should not hesitate to change. Those who need advice about these choices should consult with a department faculty member.

Placement examinations

A modern language placement test is administered by the Special Advising Office. Students who enter Oakland University with previous work in French, German or Spanish and wish to continue to study one of these languages should take the appropriate placement test during summer orientation. Students are urged to consult with the department's advising office about the proper level of placement.

Admission to major standing

To be eligible for a major in one or more foreign languages, a student must be admitted to major standing by the Department of Modern Languages and Literatures. Normally, a student should apply for major standing at the department office after having attained 56 credits and no later than three semesters before graduation. A student planning to graduate with a Bachelor of Arts degree will be admitted to major standing after successful completion of 8 credits at the 300 level.

Requirements for the liberal arts major in a modern language and literature

The requirement is 32 credits at the 300 and 400 levels in the chosen language, culture and literature. In German, courses numbered 316, 317 318, 370, 380, 408 and two 400-level literature

courses must be included. French, Spanish and Russian require courses numbered 314, 316, 318, 370, 380 and 408, plus two 400-level literature courses. In all languages, two collateral courses are required: one in history or civilization and one numbered LIT 181 or 182. Students planning graduate work are strongly urged to study a second foreign language recommended by the department.

Requirements for the liberal arts major in two modern languages

The requirement is 18 credits at the 300 and 400 levels in each of two languages. In French, Russian and Spanish, courses numbered 314, 316, 318, 355, 455 and 408 are required. German must include courses numbered 316, 317, 318, 355, 455 and 408. Chinese requires 18 credits at the 300-400 level.

Three collateral courses are required: LIN 301 and two courses in history or civilization, one in each language area, to be approved by the student's department adviser. LIT 181 and LIT 182 are recommended. Students are strongly advised to complete a minor in a complementary field such as economics and management. Most traditional graduate programs in language and literature will require students in this major to make up courses in literature.

Requirements for the liberal arts major in a modern language with minors in economics, management or international economics

Modified majors are available in French, German, Russian, Spanish and Chinese with minors in economics, management or international economics. The requirement in French, German, Russian or Spanish is 24 credits at the 300-400 level. In Chinese, the requirement is 16 credits at the 300-400 level, plus 12 credits in Chinese international studies including IS 210 and IS 490. Students should note the credit hour restriction for the minors in economics or management. (For those interested in a complete program in management, a Master of Business Administration degree program is offered. Consult the School of Business Administration section of this catalog.)

Departmental honors

Departmental honors in a foreign language may be awarded to graduating seniors who maintain a minimum grade point average set by the department and who complete projects of high quality. Students who wish to be nominated for honors should consult a departmental adviser one year before graduation.

Requirements for the liberal arts major in Chinese language and civilization

The requirement in Chinese language and civilization is 16 credits at the 300-400 level, selected from departmental offerings in consultation with an adviser. Twenty credits in East Asian studies, including IS 490, are also required. For further information, see the East Asian studies program, described on page 86.

Requirements for the liberal arts major in Latin American language and civilization

The requirement in Spanish is 24 credits at the 300-400 level. An alternative is 16 credits in Spanish at the 300-400 level plus course work in French through FRH 214. Twenty credits are required in Latin American studies courses, including IS 490. For further information, see the Latin American studies program, described on page 87.

Requirements for the liberal arts major in Russian language and civilization

The requirements are 16 credits in Russian language and civilization at the 300-400 level and 20 credits in Slavic studies courses, including IS 490. For further information, see the Slavic studies program, described on page 87.

Translation program

Students may qualify for a translation certificate by completing language courses numbered 355, 455 and 491, and may then become candidates for the American Translators Association Accreditation Test. The 491 course does not apply toward the major.

Requirements for the liberal arts minor in a modern language and literature

Minors are available in French, German, Russian or Spanish language and literature. The requirement is 20 credits beyond the 115 level, including 370 and 380.

Requirements for the liberal arts minor in a modern language

Minors are available in French, German, Russian or Spanish language. The requirement is 20 credits beyond 114-115. French, Russian and Spanish must include courses numbered 214, 215, 314, 316 and 318, and 4 credits from courses numbered 355, 408, 455 and 457. German requires courses numbered 214, 215, 316, 317 and 318, and 4 credits from courses numbered 355, 408, 455 or 457.

Requirements for the secondary teaching minor in a modern language

The requirement for a secondary teaching minor in a modern language is 20 credits in one language. Of these, 16 credits must be at the 300-400 level, including 314, 316 and 370 in French, Russian and Spanish and 316, 317, 318 and 370 in German.

Requirements for an elementary teaching concentration in a modern language

For students who wish to teach a foreign language at the elementary or junior high school level, the requirement is 36 credits in one language, including elementary and intermediate courses. For complete details on other requirements, including courses in education, consult the School of Human and Educational Services section of this catalog.

Course Offerings

CHINESE LANGUAGE AND LITERATURE

CHE 114-115 Introduction to Chinese and Chinese Culture (4 each)
A two-semester sequence in the fundamentals of modern Mandarin Chinese (kuo-yu) and Chinese culture. A beginning course for students who have had no more than one year of secondary-school-level preparation. CHE 114 must be taken first. *CHE 114 satisfies the university general education requirement in language.*

CHE 214-215 Second Year Chinese (4 each)
A two-semester sequence continuing the work of CHE 114-115, with the addition of cultural and literary readings. CHE 214 must be taken first.
Prerequisite: One year of college Chinese or equivalent.

CHE 310 Literary Chinese (4)
Studies based upon literary texts of Confucius, Mo Tzu, etc.
Prerequisite: CHE 215.

CHE 330 Readings in Chinese Political Essays (4)
Studies in the documentary style of Chinese, selected mainly from writings of twentieth century political leaders of China.
Prerequisite: CHE 215.

CHE 340 Twentieth Century Chinese Literature (4)
Studies in modern pai-hua literature, including short stories, poems, essays, and pamphlets.
Prerequisite: CHE 215.

CHE 410 Chinese Fiction and Drama (4)
Studies in texts and criticism of fiction and drama, modern or classical.
Prerequisite: CHE 310.

CHE 440 Chinese Poetry (4)
Selections from either classical T'ang and Sung Dynasty poems or from the post-May-fourth movement of poetry.
Prerequisite: CHE 310.

CHE 457 Business Chinese (4)
Introduction to the essential vocabulary and style specific to Chinese business as well as to the basic workings of the Chinese economy.
Prerequisite: CHE 215.

CHE 490 Directed Readings and Research in Chinese (2, 4 or 8)
For students with a high degree of competence in the language. May be conducted either in literary or modern Chinese. May be repeated for a total of 8 credits.
Prerequisite: Permission of instructor.

FRENCH LANGUAGE AND LITERATURE

FRH 114-115 Introduction to French and French Culture (4 each)
A two-semester sequence in the fundamentals of French and French culture. A beginning course for students who have had no more than one year of secondary-school-level preparation. FRH 114 must be taken first.
FRH 114 satisfies the university general education requirement in language.

FRH 214-215 Second Year French (4 each)
A two-semester sequence continuing the work of FRH 114-115, with the addition of cultural and literary readings. FRH 214 must be taken first.
Prerequisite: FRH 114-115.

FRH 216 Basic French Conversation (2)
Designed to develop the student's ability to organize and express ideas in French with a minimum of inhibition.
Prerequisite: FRH 115.

FRH 290 Directed Readings in French (2 or 4)
A reading course for nonmajors in research in a particular area. Approximately 50 hours of reading per credit; one conference weekly with the instructor.
Prerequisite: FRH 215.

FRH 313 French Phonetics (2)
Group and individual practice in the sound system of French, with specific reference to interference from English. Both written and laboratory work required.
Prerequisite: FRH 215.

FRH 314 Grammar Review Through Translation (4)
Review of French grammar through translation of a variety of materials from English to French and French to English. Offered fall semester.
Prerequisite: FRH 215.

FRH 316 Intermediate French Conversation (2)
Provides a transition between the carefully structured drills of other intermediate courses and free manipulation of the spoken language. Offered winter semester.
Prerequisite: FRH 215.

FRH 318 French Composition (2)
Practice in written composition. Techniques of textual analysis and exposition are introduced. Offered winter semester.
Prerequisite: FRH 314.

FRH 351 French Civilization (4)
An overview of contemporary life, education, and socio-economic conditions in France and other French-speaking countries. Conducted in French. Offered in alternate years.
Prerequisite: FRH 215.

FRH 355 Translation: French (2)
Translation from French to English of a range of materials from commercial and technical to literary, with an emphasis on idiomatic English. Offered winter semester.
Prerequisite: FRH 314.

FRH 369 Field Experience in Teaching French in the Lower Grades (2or 4)
Provides supervised experience in teaching French in the elementary school. Graded S/U. May be repeated for credit once. Does not carry credit toward departmental major.
Prerequisite: FRH 215.

FRH 370 Introduction to French Literature (4)
A sampling of critical approaches to the study of selected masterpieces of French literature. Conducted in French. Offered fall semester.
Prerequisite: FRH 215.

FRH 380 Survey of French Literature (4)
A survey of the highlights of French literature. Intended to supplement the work of FRH 370. Conducted in French. Offered winter semester.
Prerequisite: FRH 370.

FRH 408 Advanced Oral Practice in French (2)
Practice in speaking at an advanced level, which may include style and delivery appropriate to formal and informal speaking situations. May include oral presentations, self-recording and critique.
Prerequisite: FRH 316.

FRH 413 From the Middle Ages through the Sixteenth Century (4)
A study of works in various genres of several periods. Works and authors may include epics, bawdy tales, courtly romances, Villon, Rabelais and Montaigne. Conducted in French.
Prerequisite: FRH 370.

FRH 415 The Seventeenth and Eighteenth Centuries (4)
A study of works in various genres by leading French authors such as Pascal, Corneille, Racine, Moliere, La Fontaine, Montesquieu, Diderot, Rousseau and Voltaire. Conducted in French.
Prerequisite: FRH 370.

FRH 417 The Nineteenth Century (4)
A study of works in various genres by leading French authors such as Stendhal, Balzac, Hugo, Nerval, Flaubert, Zola, Baudelaire and Mallarme. Conducted in French.
Prerequisite: FRH 370.

FRH 418 The Twentieth Century (4)
A study of works in various genres by leading French authors such as Camus, Satre, Anouilh, Malraux and Gide. Conducted in French.
Prerequisite: FRH 370.

FRH 455 Translation into French (4)
Translation from English into French into a wide variety of materials ranging from commercial and technical to literary. Individual students may emphasize areas of interest. Offered fall semester in alternate years.
Prerequisite: FRH 314, 318 and 355.

FRH 457 Business French (4)
Introduction to the essential vocabulary and style specific to French business as well as to the basic workings of the French economy. All language skills receive equal stress.
Prerequisite: FRH 314, 316 and 318.

FRH 490 Independent Reading and Research (2, 4 or 8)
Directed individual research and reading for advanced French majors. May be repeated for a total of 8 credits.
Prerequisite: Two 400-level French literature courses and permission of department.

FRH 491 Independent Translation Project (4or 8)
Directed annotated translation from French into English of a major work in the student's field. May not be counted toward the major.
Prerequisite: FRH 355 and 455 and permission of department.

GERMAN LANGUAGE AND LITERATURE

GRM 111, 112 Supplementary Oral Practice in German (1 each)
A two-semester sequence of practice in listening to and speaking German, including supervised laboratory work and drill sessions. To be taken only in conjunction with GRM 114-115.

GRM 114-115 Introduction to German and German Culture (4 each)
A two-semester sequence in the fundamentals of German and German culture. A beginning course for students who have had no more than one year of secondary-school-level preparation. GRM 114 must be taken first.
GRM 114 satisfies the university general education requirement in language.

GRM 214-215 Second Year German (4 each)
A two-semester sequence continuing the work of GRM 114-115, with the addition of cultural and literary readings. GRM 214 must be taken first.
Prerequisite: GRM 114-115.

GRM 290 Directed Readings in German (2 or 4)
A reading course for nonmajors interested in research in a particular area. Approximately 50 hours of reading per credit; one conference weekly with the instructor.
Prerequisite: GRM 215.

GRM 316 Intermediate German Conversation I (2)
Provides a transition between the carefully structured drills of other intermediate courses and free manipulation of the spoken language. Should be taken concurrently with GRM 318. Offered winter semester.
Prerequisite: GRM 215.

GRM 317 Intermediate German II (2)
Provides practice in the free manipulation of the language. Offered winter semester.
Prerequisite: GRM 316 or permission of instructor.

GRM 318 German Composition (2)
Practice in written composition. Techniques of textual analysis and exposition are introduced. Should be taken concurrently with GRM 316. Offered fall semester.
Prerequisite: GRM 215.

GRM 355 Translation: German (4)
Translation from German to English of a range of materials from commercial and technical to literary, with an emphasis on idiomatic English. Offered winter semester.
Prerequisite: GRM 316 and GRM 318.

GRM 369 Field Experience in Teaching German in the Lower Grades (2or 4)
Provides supervised experience in teaching German in the elementary school. Graded S/U. May be repeated for credit once. Does not carry credit toward departmental major.
Prerequisite: GRM 215.

GRM 370 Introduction to German Literature (4)
A sampling of critical approaches to the study of selected masterpieces of German literature. Conducted in German. Offered fall semester.
Prerequisite: GRM 215.

GRM 380 Survey of German Literature (4)
Masterpieces of German literature. Offered winter semester. Conducted in German.
Prerequisite: GRM 370.

GRM 408 Advanced Oral Practice in German (2)
Practice in speaking at an advanced level, which may include style and delivery appropriate to formal and informal speaking situations. May include oral presentations, self-recording and critique.
Prerequisite: GRM 316, 317 or permission of instructor..

GRM 413 From the Middle Ages through the Seventeenth Century (4)
A study of works in all genres by leading authors of the period including Walter von der Vogelweide, Wolfram von Eschenbach, Gottfried von Strassburg and Grimmelshausen. Conducted in German.
Prerequisite: GRM 370 and 380.

GRM 415 The Eighteenth Century (4)
A study of representative works of Lessing, Goethe and Schiller, which exemplify the intellectual and artistic currents of this period. Conducted in German.
Prerequisite: GRM 370 and 380.

GRM 417 The Nineteenth Century (4)
A study of works in all genres by leading authors of the period with emphasis on the lyric poetry of Romanticism, the dramas of Kleist, Grillparzer and Hebbel, and the Novelle of Poetic Realism. Conducted in German.
Prerequisite: GRM 370 and 380.

GRM 418 The Twentieth Century (4)
A study of modern German drama, poetry and prose. Conducted in German.
Prerequisite: GRM 370 and 380.

GRM 455 Translation into German (4)
Translation from English into German of a wide variety of materials ranging from commercial and technical to literary. Individual students may emphasize areas of interest. Offered fall semester in alternate years.
Prerequisite: GRM 318 and 355.

GRM 457 Business German (4)
Introduction to the essential vocabulary and style specific to German business as well as to the basic workings of the German economy. All language skills receive equal stress.
Prerequisite: GRM 316 and 318.

GRM 490 Independent Reading and Research (2, 4 or 8)
Directed individual research and reading for advanced German majors. May be repeated for a total of 8 credits.
Prerequisite: Two 400-level German literature courses and permission of department.

GRM 491 Independent Translation Project (4 or 8)
Directed annotated translation from German into English of a major work in the student's field. May not be counted toward the major.
Prerequisite: GRM 355 and 455 and permission of department.

HINDI-URDU LANGUAGE

HIUR 114-115 Introduction to Hindi and Urdu Languages and Cultures (4 each)
A two-semester sequence of the fundamentals of both Hindi and Urdu languages and cultures. HIUR 114 must be taken first. *HIUR 114 satisfies the university general education requirement in language.*

HIN 214-215 Second Year Hindi (4 each)
A two-semester sequence continuing the work of HIUR 114-115, with the addition of cultural and literary readings in Hindi. HIN 214 must be taken first.
Prerequisite: HIUR 114-115.

URD 214-215 Second Year Urdu (4 each)
A two-semester sequence continuing the work of HIUR 114-115, with the addition of cultural and literary readings in Urdu. URD 214 must be taken first.
Prerequisite: HIUR 114-115.

HIUR 390 Directed Readings in Hindi-Urdu (2 or 4)
Directed readings for individual Hindi-Urdu students. May be repeated for a total of 8 credits.
Prerequisite: Permission of instructor.

ITALIAN LANGUAGE AND LITERATURE

IT 114-115 Introduction to Italian and Italian Culture (4 each)
A two-semester sequence of the fundamentals of Italian and Italian culture. A beginning course for students who have had no more than one year of secondary-school-level preparation. IT 114 must be taken first. *IT 114 satisfies the university general education requirement in language.*

IT 214-215 Second Year Italian (4 each)
A two-semester sequence continuing the work of IT 114-115 with the addition of cultural and literary readings. IT 214 must be taken first.
Prerequisite: IT 114-115.

IT 390 Directed Readings in Italian (2 or 4)
Directed individual readings in Italian. May be repeated for a total of 8 credits.
Prerequisite: Permission of instructor.

JAPANESE LANGUAGE AND LITERATURE

JPN 114-115 Introduction to Japanese Culture (4 each)
A two-semester sequence in the fundamentals of Japanese and Japanese culture. A beginning course, intended for students who have had no more than one year of secondary-school preparation. JPN 114 must be taken first. *JPN 114 satisfies the university general education requirement in language.*

JPN 214-215 Second Year Japanese (4 each)
A two-semester sequence continuing the work of JPN 114-115, with the addition of cultural and literary readings. JPN 214 must be taken first.
Prerequisite: JPN 114-115.

JPN 390 Directed Readings in Japanese (2 or 4)
Directed individual readings in Japanese. May be repeated for a total of 8 credits.
Prerequisite: Permission of instructor.

RUSSIAN LANGUAGE AND LITERATURE

RUS 111, 112 Supplemental Oral Practice in Russian (1 each)
A two-semester sequence of practice in listening to and speaking Russian, including supervised laboratory work and drill sessions. To be taken only in conjunction with RUS 114-115.

RUS 114-115 Introduction to Russian and Russian Culture (4 ech)
A two-semester sequence in the fundamentals of Russian and Russian culture. A beginning course for students who have had no more than one year of secondary-school preparation. RUS 114 must be taken first. *RUS 114 satisfies the university general education requirement in language.*

RUS 211, 212 Second Year Supplemental Oral Practice in Russian (1 each)
A two-semester sequence of practice in listening to and speaking Russian, including supervised laboratory work and drill sessions. To be taken in conjunction with 214-215 only.

RUS 214-215 Second Year Russian (4 each)
A two-semester sequence continuing the work of RUS 114-115, with the addition of cultural and literary readings. RUS 214 must be taken first.
Prerequisite: RUS 114-115.

RUS 290 Directed Readings in Russian (2 or 4)
A reading course for nonmajors interested in research in a particular area. Approximately 50 hours of reading per credit; one conference weekly with the instructor.
Prerequisite: RUS 215.

RUS 314 Grammar Review Through Translation (4)
Review of Russian grammar through translation of a variety of materials from English to Russian and Russian to English. Offered fall semester.
Prerequisite: RUS 215.

RUS 316 Intermediate Russian Conversation (2)
Provides a transition between the carefully structured drills of other intermediate courses and free manipulation of the spoken language. Should be taken concurrently with RUS 318. Offered winter semester.
Prerequisite: RUS 215.

RUS 318 Russian Composition (2)
Practice in written composition. Techniques of textual analysis and exposition are introduced. Should be taken concurrently with RUS 316. Offered winter semester.
Prerequisite: RUS 314.

RUS 355 Translation: Russian (4)
Translation from Russian to English of a range of materials from commercial and technical to literary, with an emphasis on idiomatic English. Offered winter semester.
Prerequisite: RUS 314.

RUS 370 Introduction to Russian Literature (4)
A sampling of critical approaches to the study of some masterpieces of Russian literature. Conducted in Russian. Offered fall semester.
Prerequisite: RUS 215.

RUS 380 Survey of Russian Literature (4)
Masterpiece of Russian literature. Conducted in Russian.
Prerequisite: RUS 370.

RUS 400 Special Topics in Language (2 or 4)
Special problems or topics selected by the instructor. May be repeated for a total of 4 credits.
Prerequisite: RUS 314, 316 and 318.

RUS 408 Advanced Oral Practice in Russian (2)
Practice in speaking at an advanced level, which may include style and delivery appropriate to formal and informal speaking situations. May include oral presentations, self-recording and critique.
Prerequisite: RUS 316.

RUS 418 The Twentieth Century (4)
A study of works in all genres by Russian authors of the period, including Bunin, Lamiatin and Solzhenitsin. Conducted in Russian.
Prerequisite: RUS 370 and 380.

RUS 455 Translation into Russian (4)
Translation from English into Russian of a wide variety of materials ranging from commercial and technical to literary. Individual students may emphasize area of interest. Offered fall semester in alternate years.
Prerequisite: RUS 318 and 355.

RUS 480 Undergraduate Seminar (2 or 4)
Study of individual authors, selected themes, or critical problems.
Prerequisite: Permission of department.

RUS 490 Independent Reading and Research (2, 4 or 8)
Directed individual research and reading for advanced Russian majors. May be repeated for a total of 8 credits.
Prerequisite: Two 400-level Russian literature courses and permission of department.

RUS 491 Independent Translation Project (4 or 8)
Directed annotated translation from Russian into English of a major work in the student's field. May not be counted toward the major.
Prerequisite: RUS 355 and 455 and permission of department.

SPANISH LANGUAGE AND LITERATURE

SPN 111, 112 Supplementary Oral Practice in Spanish (1 each)
A two-semester sequence in practice in listening to and speaking Spanish, including supervised laboratory work and drill sessions. To be taken only in conjunction with SPN 114-115.

SPN 114-115 Introduction to Spanish and Spanish Culture (4 each)
A two-semester sequence in the fundamentals of Spanish and Spanish culture. A beginning course for students who have had no more than one year of secondary-school preparation. SPN 114 must be taken first. *SPN 114 satisfies the university general education requirement in language.*

SPN 211, 212 Second Year Oral Spanish (1 each)
A two-semester sequence of practice in listening to and speaking Spanish, including supervised laboratory work and drill sessions. To be taken in conjunction with 214-215 only.

SPN 214-215 Second Year Spanish (4 each)
A two-semester sequence continuing the work of SPN 114-115, with the addition of cultural and literary readings. SPN 214 must be taken first.
Prerequisite: SPN 114-115.

SPN 290 Directed Readings in Spanish (2 or 4)
A reading course for nonmajors interested in research in a particular area. Approximately 50 hours of reading per credit; one conference weekly with the instructor.
Prerequisite: SPN 215.

SPN 300 Composition and Conversation (3)
Part of overseas study program only. Third- or fourth-year level, depending on student preparation.
Prerequisite: SPN 215.

SPN 313 Spanish Phonetics (2)
Group and individual practice in the sound system of Spanish, with specific reference to interference from English. Both written and laboratory work required.
Prerequisite: SPN 215.

SPN 314 Grammar Review Through Translation (4)
Review of Spanish grammar through translation of a variety of materials from English to Spanish and Spanish to English. Offered fall semester.
Prerequisite: SPN 215.

SPN 316 Intermediate Spanish Conversation (2)
Provides a transition between the carefully structured drills of other intermediate courses and free manipulation of the spoken language. Offered winter semester.
Prerequisite: SPN 215.

SPN 318 Spanish Composition (2)
Practice in written composition. Techniques of textual analysis and exposition are introduced. Offered winter semester.
Prerequisite: SPN 314.

SPN 351 Spanish Civilization (3)
Historical approach to Spanish culture and civilization, with emphasis on geography, social structure, philosophical thought, music, art and architecture. Part of overseas study program only.
Prerequisite: Sophomore standing.

SPN 355 Translation: Spanish (4)
Translation from Spanish to English of a range of materials from commercial and technical to literary, with an emphasis on idiomatic English. Offered winter semester.
Prerequisite: SPN 314.

SPN 369 Field Experience in Teaching Spanish in the Lower Grades (2 or 4)
Provides supervised experience in teaching Spanish in the elementary school. Graded S/U. May be repeated for credit once. Does not carry credit toward departmental major.
Prerequisite: SPN 215.

SPN 370 Introduction to Spanish Literature (4)
A sampling of critical approaches to the study of some masterpieces of Spanish literature. Conducted in Spanish. Offered fall semester.
Prerequisite: SPN 215.

SPN 380 Survey of Spanish Literature (4)
Masterpieces of Spanish literature. Conducted in Spanish. Offered winter semester.
Prerequisite: SPN 370.

SPN 408 Advanced Oral Practice in Spanish (2)
Practice in speaking at an advanced level, which may include style and delivery appropriate to formal and informal speaking situations. May include oral presentations, self-recording and critique.
Prerequisite: SPN 316.

SPN 411 Golden Age Poetry and Drama (4)
Reading and critical consideration of selected poetic and dramatic works of the period. Conducted in Spanish.
Prerequisite: SPN 370 and 380.

SPN 412 Golden Age Prose (4)
Reading and critical consideration of selected prose works of the period. Conducted in Spanish.
Prerequisite: SPN 370 and 380.

SPN 417 The Nineteenth Century (4)
A study of works in all genres by leading Spanish authors, including Galdos, Zorrilla, Becquer. Conducted in Spanish.
Prerequisite: SPN 370 and 380.

SPN 418 The Twentieth Century (4)
A study of works in all genres by leading Spanish authors, including Unamuno, Machado, Lorca, Cela. Conducted in Spanish.
Prerequisite: SPN 370 and 380.

SPN 420 Spanish-American Literature before 1888 (4)
A study of principal literary figures from the Colonial Period to Modernism. Conducted in Spanish.
Prerequisite: SPN 370 and 380.

SPN 421 Spanish-American Literature since 1888 (4)
Masterworks of twentieth-century Spanish-American literature, including Fuentes, Asturias, Neruda, Borges. Conducted in Spanish.
Prerequisite: SPN 370 adn 380.

SPN 455 Translation into Spanish (4)
Translation from English into Spanish of a wide variety of materials ranging from commercial and technical to literary. Individual students may emphasize areas of interest. Offered fall semester in alternate years.
Prerequisite: SPN 314, 318 and 355.

SPN 457 Business Spanish (4)
Introduction to the essential vocabulary and style specific to Spanish business as well as to the basic workings of the Hispanic economy. All language skills receive equal stress.
Prerequisite: SPN 314, 316 and 318.

SPN 480 Undergraduate Seminar (2 or 4)
Study of individual authors, selected themes, or critical problems. Conducted in Spanish.
Prerequisite: SPN 370 and 380.

SPN 490 Independent Reading and Research (2, 4 or 8)
Directed individual research and reading for advanced Spanish majors. May be repeated for a total of 8 credits.
Prerequisite: Two 400-level Spanish literature courses and permission of department.

SPN 491 Independent Translation Project (4 or 8)
Directed annotated translation from Spanish into English of a major work in the student's field. May not be counted toward the major.
Prerequisite: SPN 355 and 455 and permission of department.

LITERATURES IN TRANSLATION

LIT 100 Introduction to Asian Literature (4)
A survey of the four great Asian literary traditions: China, Japan, India and Middle East. *Satisfies the university general education in literature.*

LIT 181 European Literature I (4)
A study of the main literary currents as reflected in continental European masterpieces up to 1850. All works read in English translations. *Satisfies the university general education requirement in literature.*

LIT 182 European Literature II (4)
A study of the main literary currents as reflected in continental European masterpieces from 1850 to the present. All works read in English translations. *Satisfies the university general education requirement in literature.*

LIT 251 Studies in Foreign Film (4)
A study of film as a mirror of the cultures and aesthetics of various societies. Topics to be selected by the instructor.

LIT 346 Non-Western Theatre and Dramatic Literature (4)
A study of classical and modern theatre and dramatic literature from one or more areas: China, India, Japan. Identical with THA 346.

MODERN LANGUAGE

ML 191-192 Tutorial in Foreign Language (4 each)
Instruction in the elements of a spoken or written foreign language such as Arabic, Bengali, Czech, Sanskrit, Catalan, etc. for which no regular course sequence exists here. May be repeated for credit in a different language each time.
Prerequisite: Permission of instructor.

ML 211 Diction for Singers, First Semster (4)
A basic course to instruct voice students in the techniques for pronouncing foreign languages. Extensive work with the International Phonetic Alphabet, tapes, and native speakers. Italian and Latin will be stressed. Offered fall semester in alternate years.

ML 212 Diction for Singers, Second Semester (4)
A continuation of ML 211 with emphasis on German and French. Extensive work with transcription techniques, tapes and native speakers. Offered winter semester in alternate years.
Prerequisite: ML 211.

ML 290 Topics Related to Foreign Language Study (2 or 4)
Topics explored in areas not normally a part of regular offerings in language or literature. May be repeated for a total of 8 credits.
Prerequisite: Permission of instructor.

ML 291-292 Intermediate Tutorial in Foreign Language (4 each)
Intermediate work in a language and literature not normally taught at Oakland University. May be repeated for credit.
Prerequisite: Permission of instructor.

ML 391-392 Advanced Tutorial in Foreign Language (4 each)
Advanced work in a language not normally taught at Oakland University. May be repeated for credit.

ML 399 Field Experience in a Modern Language (4)
Field experience in an appropriate employment setting correlated with directed study assignments relating the experience to the knowledge and skills developed by the foreign language student. May not be repeated for credit.
Prerequisite: FRH or SPN 314, 316 and 318; GRM 316, 317 and 318.

DEPARTMENT OF MUSIC, THEATRE AND DANCE

Chairperson: *David Daniels*

Professors: *David Daniels, Stanley Hollingsworth, Lyle Nordstrom*

Associate professors: *Raynold Allvin, James Dawson, John Dovaras, Robert Facko, Carol Halsted, Marvin Holladay, Flavio Varani*

Assistant professors: *Michael Naylor, John Paul White*

Instructor: *Karen Hubbard*

Visiting assistant professors: *Yolanda Fleischer, William Ward*

Visiting instructor: *Susan Wheatley*

Adjunct professors: *David Di Chiera, Terence E. Kilburn*

Adjunct assistant professors: *Joyce Adelson, Janice Albright, Thomas A. Aston*

Lecturers: *Jacqueline Ammond, Frederic DeHaven, Phil Fox, Danielle Guest, John Smith, Walter Szymanski, Carolyn Tower*

Applied music instructors: *Joyce Adelson (piano), Janice Albright (voice), Mary Bartlett (harp), Clarence Beasley (jazz piano), Steven Carryer (jazz guitar), Douglas Cornelsen (clarinet), Penny Crawford (harpsichord), James Dawson (saxophone), Frederic DeHaven (organ), Mario DiFiore (violoncello), Edith Diggory (voice), John Dion (horn), Pamela Dion (bassoon), Ann Elliott (violin), Derek Francis (violin), Robert Gladstone (string bass), John Hall (classical guitar), Pamela Highbaugh (cello), Joanna Hood (viola), Elizabeth Ilku (harp), Wesley Jacobs (tuba), Kenneth Kellett (jazz string bass), Ervin Monroe (flute), Lyle Nordstrom (recorder/lute), Patricia Adams Nordstrom (recorder/viola de gamba), Lawrence Nozero (jazz saxophone), Robert Pangborn (percussion), Joseph Skrzynski (trombone), Daniel Spencer (jazz percussion), Sharon Stanis (violin), Walter Szymanski (jazz trumpet), James Underwood (trumpet), Flavio Varani (piano), John Paul White (voice), Ara Zerounian (viola)*

String quartet in residence: *Lafayette String Quartet*

The Department of Music, Theatre and Dance offers major programs leading to the Bachelor of Arts degree with a music major, Bachelor of Music degree, Bachelor of Science degree with a music education major and Master of Music degree. Minors are offered in theatre, dance and music, and a secondary teaching minor is available in music.

In conjunction with the Center for the Arts, the department offers student performance opportunities in dramatic productions, dance recitals, music ensembles and recitals, and music theatre.

Core requirements for all degree programs in music:

Prospective music majors should read the "Music Handbook," which is available in the department office, and consult with a department adviser before beginning a music degree program. In addition, new students are expected to audition during the first week of classes in order to qualify for their chosen performing medium.

All music majors must meet the following requirements:

1. MUT 211-212, plus 8 credits from MUT 311, MUT 312, MUT 314, MUT 410, MUT 411, MUT 412 and MUT 414.
2. Successful completion of the departmental ear training examination.

3. MUS 320 and two of the following: MUS 328, MUS 329, MUS 330, MUS 334, MUS 345 and MUS 347.
4. Concert attendance requirement and solo performance requirement as described in the "Music Handbook."

Requirements for the liberal arts major in music, B.A. program

Forty-eight credits in music, with corequisites in art, theatre and/or dance, are required for a Bachelor of Arts degree with a music major. This degree is for students who wish a broad general education without a high degree of specialization in music. Students pursuing this degree specialization must satisfy the College of Arts and Sciences general education requirement and the distribution requirement specified for the Bachelor of Arts degree and the specific corequisites for this specialization. Students in this degree program may not use a music course to satisfy the university general education requirement in the arts.

Specific music requirements are: ensembles — four semesters, two must use applied major (4 credits); applied music — may include conducting and up to 4 credits in keyboard techniques (16 credits); orchestration — MUT 411 (4 credits); language — 16 credits or equivalent proficiency in a modern language (German, French or Italian recommended).

Requirements for the major in music education, B.S. program

The Bachelor of Science degree with a music education major is designed for students who wish to teach in the public schools; the Bachelor of Science degree in music education carries Michigan teaching certification. Specializations are possible in instrumental music education or vocal music education. Each specialization requires a secondary teaching minor in music, and the vocal specialization recommends 8 credits of *Singers' Diction* (ML 211-212). For general education requirements for this degree, consult the Department of Music, Theatre and Dance. For specific requirements, see the "Music Handbook."

Requirements for the Bachelor of Music degree

The Bachelor of Music degree is intended for students who wish preprofessional and professional preparation in performance, early music, theory, composition, jazz or commercial music. Candidates for the Bachelor of Music degree must meet the general education requirements of the university and should meet the same distribution requirements as candidates for the Bachelor of Science in music degree: 4 credits in each of three different distribution areas. With the approval of the Department of Music, Theatre and Dance, however, these students may substitute a non-music course from the university general education arts category for a course in one of the other areas comprising the college distribution requirement.

Specialization requirements:	Credits
1. **Performance: Piano or organ**	
Ensembles (8 semesters; must include 4 semesters of accompanying)	8
Applied Major	32
Applied Minor	8
Pedagogy (MUS 441)	4
Repertoire (MUS 440 for pianists; organists should consult an adviser)	4
Language	0-16
Senior Recital	
Recommended: Conducting (MUS 395)	
2. **Performance: Voice**	
Ensembles (8 semesters; 4 must use applied major, one must be accompanying for voice majors)	8
Applied Major	32
Applied Minor (must be keyboard unless proficiency equivalent to MUA 471)	8

Repertoire	4
Language (16 credits or equivalent proficiency in a modern language, Italian, French or German recommended; or Singer's Diction (ML 211-212, offered only in alternate years, plus 8 credits in modern language numbered 115 or higher)	
Senior Recital	
Recommended: Conducting (MUS 395)	

3. **Performance: Orchestral instruments or guitar**

Ensembles (2 ensembles each semester for 8 semesters, for orchestral instruments, 8 ensembles must use applied major; for guitar, 4 must use applied major)	8-16
Applied Major	32
Applied Minor (must be keyboard unless proficiency equivalent to MUA 471)	8
Repertoire (via independent study) 2 credits for orchestral instruments, 4 credits for guitar	
Language (8 credits or equivalent proficiency in a modern language numbered 115 or higher, German, French or Italian recommended)	
Senior Recital	
Recommended: Conducting (MUS 395)	

4. **Early Music**

Ensembles (6 credits must use applied major)	12
Applied Major	24
Applied Minor	8
Keyboard (MUA 271 or equivalent proficiency)	4
Performance Practice (MUS 423)	2
Bibliography (MUS 490)	2
Language (16 credits or equivalent proficiency in a modern language numbered 215 or higher, German, French or Italian recommended)	
Recommended: Additional credits in music history and Senior Recital	

5. **Theory**

Additional theory courses beyond core requirement, chosen from MUT 311, 312, 410, 412	8
Composition	4
Ensembles (6 semesters, 3 must use applied major)	6
Applied Major	12
Keyboard (MUA 471 or equivalent proficiency)	0-8
Orchestration (MUT 411)	4
Bibliography (MUS 490)	2
World Music (MUS 250 or MUS 350)	4
Apprentice College Teaching (MUS 497)	2
Conducting (MUS 395)	4
Language (16 credits or equivalent proficiency in a modern language numbered 215 or higher, German recommended)	
Recommended: Additional credits in music theory	

6. **Composition**

Composition	8
Additional theory courses beyond core requirement, chosen from MUT 311, 312, 410, 412	16
Orchestration (MUT 411)	4
Ensembles (6 semester, 3 must use applied major)	6
Applied Major	8
Keyboard (MUA 471 or equivalent proficiency)	0-8
Conducting (MUS 395)	4

Language (16 credits or equivalent proficiency in a modern language numbered 215 or higher, German recommended, or Singer's Diction (ML 211-212), offered only in alternate years, plus 8 credits in a modern language numbered 115 or higher) 8-16
Senior Recital

7. **Jazz**
Ensembles (8 semesters, 4 must use applied major) 8
Applied Major 16
Keyboard (proficiency equivalent to MUA 477) 0-8
Jazz Improvisation Workshop (MUE 341) 8
World Music (MUS 250 or MUS 350) 4
Language (8 credits or equivalent proficiency in a modern language numbered 115 or higher, German, French or Italian recommended)
Recommended: Senior Recital

8. **Commercial Music**
Ensembles (8 semesters) 16
Applied Major 16
Keyboard (MUA 471 or equivalent proficiency) 8
Language (8 credits or equivalent proficiency in a modern language numbered 115 or higher, French recommended, or Singer's Diction (ML 211-212), offered only in alternate years)
Corequisites: Theatre (Technical Laboratory, Fundamentals of Acting, Dance and Movement, Costuming and Makeup) 16

Note: Students who choose to meet the departmental language requirement with ML 211-212 will need to take additional courses to meet the university general education requirement in language (see page 26) and the college distribution requirement (see page 41).

Ensemble requirements

The ensemble requirements vary from one degree program to another. The requirements are given in terms of minimum number of semesters and minimum number of credits; at least half of these ensembles must use the applied major. A student may, of course, exceed these minima; in fact, the department recommends ensemble participation every semester, if possible.

Major standing

Prospective music majors must apply to the Department of Music, Theatre and Dance for major standing after completing 48 credits at Oakland University or elsewhere. Normally, transfer students should apply during their first semester at Oakland.

To apply for major standing:

1. Meet with the departmental adviser and prepare a program plan.
2. Complete an application for major standing and submit it with the completed program plan to the department office.
3. Perform a major standing jury in the applied specialization at the end of the semester in which the student has applied for major standing.

Auditions

New music majors must audition in their performing medium for a faculty committee within the first week of classes. Students should be prepared to demonstrate proficiency in an applied specialty and may be asked to do some sight reading.

Applied music juries

Music majors must play for a jury in their major performing medium at the end of each fall and each winter semester of applied study; in some cases a jury in a performance minor may also be required. Failure to complete this requirement will result in an "I" (Incomplete) grade. For specific jury requirements, students should consult the head of their division.

Requirements for the secondary teaching minor in music

To earn the secondary teaching minor in music, students must complete 28 credits in music distributed as follows: 8 credits in music theory (MUT); 8 credits in applied music (MUA); four semesters (at least 4 credits) in music ensembles (MUE); and a planned program of 8 credits (to be approved by a music adviser) selected from MUS 149, MUS 250, MUS 320, MUS 350, MUS 395, MUS 401, MUS 402, MUS 441, MUS 491, MUS 494, MUS 495 and MUS 496. At least 14 of the 28 credits must be in courses numbered 300 or above.

Requirements for the liberal arts minor in music

To earn a minor in music, students must complete 24 credits in music chosen in consultation with a department adviser as follows: 8 credits of music theory (MUT), 6 credits of music history (MUS 320, MUS 328, MUS 329, MUS 330, MUS 334, MUS 345 and MUS 347); 6 credits of applied music (MUA); and 4 credits of music ensemble (MUE).

Offerings in Theatre and Dance

The Department of Music, Theatre and Dance offers liberal arts minors in theatre and dance.

To earn a minor in theatre, students must complete 20 credits distributed as follows: 12 credits from THA 261, THA 267 and THA 363; 4 credits from THA 268 or THA 269; and 4 credits from THA 450 and THA 462.

To earn a minor in dance, students must complete 20 credits distributed as follows: 12 credits from DAN 173, DAN 376 and DAN 372 or DAN 373; and 8 credits from all other dance courses.

Course Offerings

MUSIC ENSEMBLES

Ensembles are open to all students by audition. May be repeated for credit.

MUE 301 University Chorus (1 or 2)
Performance of the large choral masterpieces from all music periods.

MUE 302 University Community Chorus (1 or 2)
Festival-type mixed chorus for citizens of the surrounding communities who possess vocal experience. Performance of varied choral literature. Meets in the evening.

MUE 304 Oakland Chorale (1 or 2)
Performance of a wide range of choral chamber repertoire from Renaissance to the present.
Prerequisite: Permission of instructor.

MUE 305 Opera Chorus (1 or 2)
An ensemble which performs with the Michigan Opera Theatre.
Prerequisite: Permission of instructor.

MUE 306 Starshine (1, 2)
An introduction to show choir performance of staged and choreographed shows.
Prerequisite: Permission of instructor.

MUE 307 University Drive (1, 2)
A show choir presenting staged and choreographed shows. Emphasis on skill development in singing, style, stage presence, stage movement and microphone technique.
Prerequisite: Permission of instructor.

MUE 308 Meadow Brook Estate (1, 2, 3)
A show choir presenting fully staged, costumed and choreographed shows. Rigorous performance schedule in professional situations.
Prerequisite: Permission of instructor.

MUE 309 Meadow Brook Festival Chorus (1)
Performance of major choral masterpieces from all music periods under world-famous conductors at Meadow Brook Music Festival. May be repeated for a total of 8 credits.
Prerequisite: Permission of instructor.

MUE 310 Vocal Improvisation Workshop (2)
A laboratory in vocal improvisation designed to increase skills in performing commercial and popular music.
Prerequisite: Permission of instructor.

MUE 315 Vocal Jazz Ensemble (1, 2)
Ensemble performance of complex vocal jazz works. Development of jazz style and blend, scat-singing, solo production and microphone technique.
Prerequisite: Permission of instructor.

MUE 320 Pontiac-Oakland Symphony (1 or 2)
Orchestral performance of repertoire from the eighteenth, nineteenth and twentieth centuries. Several concerts per year, on- and off-campus. Accompaniments for solo concertos and university choral groups. Membership by audition. Graded S/U.

MUE 331 Concert Band (1 or 2)
An ensemble of wind instruments performing standard concert band literature.
Prerequisite: Permission of instructor.

MUE 340 Afram Jazz Ensemble (1 or 2)
A study of traditional and contemporary literature for large jazz ensembles within the Afro-American cultural context. Both conceptualization of the material and improvisational techniques will be explored and defined.

MUE 341 Jazz Improvisation Workshop (2)
A performance practice laboratory designed to increase improvisational skills indigenous to jazz performance and to identify systematically and use stylistic characteristics of various jazz subcategories.

MUE 350 Opera Workshop (1, 2 or 3)
Study and experience in various forms of musical theatre.
Prerequisite: Permission of instructor.

MUE 351 Musical Theatre Workshop (1 or 2)
Performance and study of repertory of the musical theatre.
Prerequisite: Permission of instructor.

MUE 360 Collegium Musicum (1 or 2)
Performance of Medieval, Renaissance and Baroque music in various vocal and instrumental combinations. Period instruments and performance practices are emphasized. Graded S/U.
Prerequisite: Permission of instructor.

MUE 370 Guitar Ensemble (1 or 2)
Performance practice and techniques of guitar literature involving two or more players.

MUE 371 Woodwind Ensemble (1 or 2)
Ensembles of three or more saxophones performing appropriate literature.
Prerequisite: Permission of instructor.

MUE 373 Percussion Ensemble (1)
Performance of music for various combinations of percussion instruments.
Prerequisite: Permission of instructor.

MUE 375 Keyboard Ensemble Technique (2)
Class instruction in performance and repertory of multiple keyboard literature.
Prerequisite: Permission of instructor.

MUE 380 Chamber Music (1 or 2)
Performing ensemble of various instrumentations. A spectrum of appropriate music literature, medieval through contemporary.

MUE 390 Accompaniment Practicum (1 or 2)
Experience in piano accompaniment of solo and/or ensembles, vocal and instrumental. May be repeated once for credit.
Prerequisite: MUA 370.

APPLIED MUSIC

The following courses each have four course number designations. Music majors are to enroll using the number which corresponds to the year in school — freshmen, 100 level; sophomores, 200 level; juniors, 300 level; seniors, 400 level.

Music faculty may adjust course numbers at the time of the entering audition, or after the first lesson.

Beginners must use the 100-level designation regardless of year in school. Students who have previously studied, either privately or in a college or university, should consult the departmental adviser to determine an appropriate course number if an exception to the above listings exists. May be repeated for credit except where indicated.

The following courses are individual lessons and involve an applied music fee.

MUA 100, 200, 300, 400	Voice (2 or 4)
MUA 101, 201, 301, 401	Piano (2 or 4)
MUA 102, 202, 302, 402	Organ (2 or 4)
MUA 103, 203, 303, 403	Harpsichord (2 or 4)
MUA 104, 204, 304, 404	Violin (2 or 4)
MUA 105, 205, 305, 405	Viola (2 or 4)
MUA 106, 206, 306, 406	Violoncello (2 or 4)
MUA 107, 207, 307, 407	Double Bass (2 or 4)
MUA 108, 208, 308, 408	Flute (2 or 4)
MUA 109, 209, 309, 409	Oboe (2 or 4)
MUA 110, 210, 310, 410	Clarinet (2 or 4)
MUA 111, 211, 311, 411	Bassoon (2 or 4)
MUA 112, 212, 312, 412	French Horn (2 or 4)
MUA 113, 213, 313, 413	Trumpet (2 or 4)
MUA 114, 214, 314, 414	Trombone (2 or 4)
MUA 115, 215, 315, 415	Tuba (2 or 4)
MUA 116, 216, 316, 416	Timpani (2 or 4)
MUA 117, 217, 317, 417	Percussion (2 or 4)
MUA 118, 218, 318, 418	Harp (2 or 4)
MUA 119, 219, 319, 419	Guitar (classical) (2 or 4)
MUA 120, 220, 320, 420	Renaissance Winds (2 or 4)
MUA 121, 221, 321, 421	Viola da Gamba (2 or 4)
MUA 122, 222, 322, 422	Lute (2 or 4)
MUA 123, 223, 323, 423	Recorder (2 or 4)
MUA 124, 224, 324, 424	Saxophone (2 or 4)
MUA 130, 230, 330, 430	Piano (jazz) (2 or 4)
MUA 131, 231, 331, 431	Guitar (jazz) (2 or 4)
MUA 132, 232, 332, 432	Trumpet (jazz) (2 or 4)
MUA 133, 233, 333, 433	Saxophone (jazz) (2 or 4)
MUA 134, 234, 334, 434	Percussion (jazz) (2 or 4)
MUA 135, 235, 335, 435	Double Bass (jazz) (2 or 4)
MUA 149, 249, 349, 449	Applied Music (2 or 4)

May be used to increase the number of private lessons in the student's major or minor performing medium. Must be taken with one of the applied music courses.

The following music courses are group lessons and involve an applied music fee.

MUA 171, 271, 371, 471 Keyboard Technique (2 each)
Development of the basic keyboard facility essential to any musician and some acquaintance with keyboard literature. May not be repeated for credit.
Prerequisite: Permission of instructor.

MUA 251 Beginning Violin Class (1)
MUA 252 Beginning Violoncello Class (1)
MUA 253 Beginning Flute Class (1)
MUA 254 Beginning Clarinet Class (1)
MUA 255 Beginning Double Reed Class (1)
MUA 256 Beginning Trumpet Class (1)
MUA 257 Beginning Trombone Class (1)
MUA 258 Beginning Percussion Class (1)
MUA 259 Beginning Guitar Class (1)
MUA 251 through 259 may be repeated for a total of 2 credits.

MUA 260 Class Voice (2)
Elementary aspects of singing, including diction, breath control, projection and repertoire.

MUA 361-362 Vocal Literature I and II (2 each)
A survey of literature for the voice with emphasis on historical style. MUA 361 covers the Middle Ages through the nineteenth century, with emphasis on German song. MUA 362 continues through the nineteenth and twentieth centuries, emphasizing French, British and American.
Prerequisite: ML 212 (may be taken concurrently) and permission of instructor.

MUA 370 Accompanying (1 or 2)
To help the pianist acquire knowledge of the basic skills required in the ensemble. Representative vocal and instrumental compositions are studied; emphasis is on rehearsal techniques and performance.

MUA 373 Piano Tuning and Technology (2 credits)
Basic skills in tuning and regulating a piano. Ability to set equal temperament as well as some discussion of historic temperaments.
Prerequisite: MUT 212.

MUA 376, 377, 476, 477 Jazz Keyboard Practices (2)
Development of basic jazz keyboard techniques and skill including jazz chord and rhythm reading, melodic development and voice leading. May not be repeated for credit.
Prerequisite: Keyboard proficiency demonstrated by audition.

MUSIC THEORY AND COMPOSITION

MUT 111 Beginning Musicianship (4)
Introduction to the techniques of reading and writing music, notation, pitch and rhythmic organization, elementary sight singing, dictation and keyboard familiarity. An elective for nonmusic majors.

MUT 205 Ear Training Preparation (1)
A required course for all full-time music majors who have not satisfied the ear training preparation. See "Music Handbook." May be repeated for a maximum of 4 credits. Graded S/U.
Prerequisite: MUT 212.

MUT 211 Harmony and Ear Training I (4)
Beginning ear training and rudiments of tonal harmony. The harmonic practice of late eighteenth and early nineteenth centuries; composition and analysis in this style.

MUT 212 Harmony and Ear Training II (4)
Harmonic practice of the late nineteenth and early twentieth centuries; composition and analysis in this style.
Prerequisite: MUT 211 or equivalent.

MUT 311 Techniques of Musical Analysis (4)
Techniques of analyzing works of various styles and periods, with emphasis on tonal music.
Prerequisite: MUT 212.

MUT 312 Tonal Counterpoint (4)
The contrapuntal style of the eighteenth century; composition and analysis.
Prerequisite: MUT 212.

MUT 314 Jazz Theory (4)
Jazz notation, arranging and composition.
Prerequisite: MUT 212.

MUT 315 Composition (4)
Private lessons in composition and composition laboratory. Studies, exercises and projects concerning creativity and craft in music composition. For freshmen and sophomores. May be repeated for credit.
Prerequisite: MUT 312 and permission of instructor.

MUT 410 Twentieth Century Techniques (4)
Compositional practices in the 20th century; composition and analysis.
Prerequisite: MUT 212.

MUT 411 Orchestration (4)
A study of the orchestral instruments and their use in various combinations, including full orchestra and band. MUS 400, 404, 395 and MUT 410 are related courses.
Prerequisite: MUT 212.

MUT 412 Modal Counterpoint (4)
The contrapuntal style of the sixteenth century. Analysis and composition in this style. Offered in alternate years.
Prerequisite: MUT 212.

MUT 414 Jazz Composition and Arranging (4)
Composition and arranging technique for jazz ensembles. Includes study of jazz notational systems, idiomatic jazz practice, standard jazz forms and orchestration for instruments and voice as used in jazz ensembles.
Prerequisite: Permission of instructor.

MUT 415 Advanced Theory/Composition (4)
Private lessons in composition and composition laboratory: studies, exercises and projects concerning creativity and craft in composing music. For juniors and seniors. May be repeated for credit.
Prerequisite: MUT 312 and permission of instructor.

MUSIC HISTORY, LITERATURE AND APPRECIATION

MUS 100 An Introduction to Music (4)
An introduction to the techniques of listening to great music, and a study of its elements, forms and styles. Begins at the level of the student lacking previous musical experience. An elective for nonmusic majors. *Satisfies the general education requirement in arts.*

MUS 215 West African Drumming (2)
Study of drum ensemble traditions and practice as related to West African oral culture. Includes performance experience with authentic Ewe and Akan drums. Comparison with other musical traditions of indigenous African cultures.

MUS 250 World Music Survey I (4)
Introduction to selected music cultures to acquaint the student with a variety of musical functions and styles at various places and times. Emphasis is on demonstrations via live performances by visiting lecturers and guest artists. May be taken twice for a total of 8 credits. *Satisfies the university general education requirement in arts.*

MUS 320 Survey of Music History and Literature (4)
A survey of music from medieval through modern contemporary, primarily for music majors.
Prerequisite: MUT 212 is recommended. *Satisfies the general education requirement in arts.*

MUS 328 Music of the Baroque Period (2)
Music history and literature of the Baroque period.
Prerequisite: MUS 320.

MUS 329 Music of the Classical Period (2)
Music history and literature of the Classical period.
Prerequisite: MUS 320.

MUS 330 Music of the Renaissance (2)
Music history and literature of the Renaissance period.
Prerequisite: MUS 320.

MUS 331 Opera and Music Drama (4)
A study of music drama from the lyric drama of the ancient Greeks to the present. Suggested as an elective for nonmusic majors.
Prerequisite: MUT 211.

MUS 334 Music of the Romantic Period (2)
Music history and literature of the Romantic period.
Prerequisite: MUS 320.

MUS 345 Twentieth Century Music (2)
A study of significant styles and composers from Debussy to the present.
Prerequisite: MUS 320.

MUS 347-348 History of Jazz (2 each)
A survey and historical study of the development of jazz, including significant periods and trends, stylistic analysis and aesthetic foundations.
Prerequisite: MUS 320.

MUS 350 World Music Survey II (4)
Continuation of MUS 250. A study of selected cultures designed to find relationships between musical styles and functions in the society. Emphasis is on demonstrations through live performances of visiting lecturers and guest artists.

MUS 355 Piano Literature (2)
Historical development of music written for the pianoforte. Includes some study of harpsichord and clavichord music.
Prerequisite: MUS 320.

MUS 360-361 Church Music I and II (2 each)
Study of liturgy and hymnology. Development of skill in service playing at the organ, chant accompaniment, modulation and improvisation. Combination or organ and choral repertoire for church service. Offered in alternate years.
Prerequisites for 360: MUT 312 and MUS 320.
Prerequisite for 361: MUS 360.

MUS 423 Performance Practices (2)
A study of the performing practices of music of earlier times. Content varies each semester. May be repeated a total of three times for credit with permission of instructor.
Prerequisite: Permission of instructor.

MUS 440 Piano Master Class (2)
Class study of piano literature for stylistic characteristics and technical considerations for proper performance.
Prerequisite: Permission of instructor.

MUS 490 Introduction to Music Bibliography (2)
An introduction to basic research materials and methods in musicology primarily for the music history and literature major.
Prerequisite: MUS 320 and a 400-level theory course.

MUS 491 Directed Research in Music History (4)
Directed individual reading and research for advanced music history majors.
Prerequisite: MUS 320, a 400-level theory course and 2 of the following: MUS 328, 329, 330, 334, 345.

MUSIC EDUCATION

MUS 149 Music as an Art and as an Elementary School Subject (5)
Introduction to the techniques of listening to music and of teaching music in the elementary school. Begins at a level for the student lacking previous musical experience.

MUS 230 Studies in Choral Music (1, 2 or 3)
Seminar, independent study and performance of choral music including vocal production techniques, performance practices and historical foundations. Offered summer session.

MUS 231 Studies in Orchestral Music (1 or 2)
Seminars, independent study and performance of orchestral music, including study of performance practices, theory, history and chamber music of various periods. Offered summer session.

MUS 232 Studies in Piano Performance and Literature (2 or 3)
Master class in performance of selected piano works including historical performance practices and technical considerations. Offered summer session.

MUS 233 Studies in Musical Expression through Movement (2 or 3)
Seminars in music theory and composition and in various forms of movement which express sound. Eurythmics and chironomy are studied as well as standard dance forms. Offered summer session.

MUS 318 Business of Music (4)
A survey of business techniques and procedures, laws, licensing and accounting practices in the music industry, and a study of career opportunities related to music.

MUS 395 Conducting (4)
Basic techniques of conducting, including instrumental and choral. Participants elect to emphasize either instrumental or choral technique and will be assigned at least one hour per week as assistants in university performing groups or public school ensembles.
Prerequisite: MUT 212.

MUS 400 Elementary Instrumental Methods (4)
Provides the teacher with basic facilities and pedagogical techniques for the string, woodwind, brass and percussion families. Offered in alternate years.

MUS 401 Teaching Music in Elementary Schools (4)
Organization and content of the general vocal music class in kindergarten through sixth grade. The development of musicality in the child. Emphasis on teaching music reading and ear training to young children.
Prerequisite: MUT 211 and a 300-level theory course.

MUS 402 Teaching Music in Secondary Schools (2)
The content and organization of the complete secondary school curriculum and the role music assumes in it. Selection of appropriate repertoire and development of the school music library.
Prerequisite: MUT 211 and a 300-level theory course.

MUS 403 Secondary Choral Methods (2)
The organization and conducting of choral music in junior and senior high schools. Repertoire, materials and techniques.
Prerequisite: MUT 211.

MUS 404 Secondary Instrumental Methods (2)
The organization and conducting of instrumental music in junior and senior high schools. Repertoire, materials and techniques.
Prerequisite: MUT 211.

MUS 441-442 Music Pedagogy (4 each)
Principles of music instruction for the studio teacher. The first semester will be devoted to a survey of the field and to observation. The second semester will be devoted to supervised teaching.

MUS 445 Music Criticism (4)
A study of the techniques of evaluating musical performances and making appropriate verbal and written comments. Includes techniques of writing program notes.

MUS 480 Advanced Studies in Choral Conducting and Literature (1, 2, 3 or 4)
Independent and seminar work in advanced choral conducting. Emphasis is on interpretation of choral literature through research. Opportunities are provided for conducting experience in choral lab groups. Offered summer session.
Prerequisite: Choral conducting experience and one music history class.

MUS 481 Advanced Studies in Orchestral Conducting and Literature (1, 3 or 3)
Independent and seminar work in advanced orchestral conducting. Emphasis is on interpretation of orchestral literature through research. Opportunities are provided for conducting experience in a laboratory orchestra. Offered summer session.
Prerequisite: Conducting experience, music theory.

MUS 494 Directed Research in Music Education (2 or 4)
Directed individual reading and research in technology of, innovation in, and psychology of music instruction.
Prerequisite: Two courses from MUS 401, 402, 403 and 404.

MUS 496 Innovations in Music Instruction (2, 3 or 4)
Innovative patterns of music instruction. Materials, methods and curricula appropriate to changing demands made on the public school music teachers. Offered summer session.
Prerequisite: Permission of instructor.

MUS 499 Special Topics in Music (1, 2, 3 or 4)
Current topics and issues in music performance and literature.
Prerequisite: Permission of instructor.

INDEPENDENT STUDY

MUS 295 Independent Study (1, 2 or 4)
Normally for freshmen and sophomores.
Prerequisite: Permission of department.

MUS 296 Problems in Applied Music (2)
Independent study in technique and literature of the student's major performing area. Graded S/U.
Prerequisite: Permission of department chairperson.

MUS 495 Independent Study (1, 2 or 4)
Normally for juniors and seniors.
Prerequisite: Permission of department.

MUS 497 Apprentice College Teaching (2)
Supervised participation in teaching an undergraduate course in music, together with discussion of teaching methods and objectives.
Prerequisite: Permission of department.

THEATRE

THA 100 Introduction to Theatre (4)
Theatre as an art form. Topics include acting, directing, design, dramatic literature, theatre history, theory and critcism. Students will view selected plays. *Satisfies university general education requirement in arts.*

THA 200 Topics in Theatre Arts (4)
Topics and problems, selected by the instructor, as temporary or experimental additions to the curriculum.

THA 213 Mime (4)
Introduction to the art of gesture and movement. Classical and traditional forms are explored, emphasizing active involvement in mime.

THA 230 Voice and Articulation (4)
Theory and application in voice, articulation and pronunciation.

THA 261 Technical Laboratory (4)
Survey of techniques of scenery and costume construction and lighting, including proper use of tools and hardware in these three areas. Sixty hours of work on a major production are required.

THA 267 Fundamentals of Acting (4)
An introduction to the basic skills and knowledge required to perform a role in a stage production.

THA 268 Theatre History I (4)
History of the Western theatre from its primitive origins through the Renaissance, including dramatists, stages, productions and acting. A few representative plays will be read. *Satisfies the university general education requirement in arts.*

THA 269 Theatre History II (4)
Continuation of THA 268 to the present. Includes a brief look at the theatre of the Orient. A few representative plays will be read. *Satisfies the university general education requirement in arts.*

THA 346 Non-Western Theatre and Dramatic Literature (4)
Identical with LIT 346.

THA 350 Oral Interpretation (4)
Oral expression of literature — prose, poetry and drama — based on intellectual, emotional, and aesthetic analysis.

THA 362 Technical Design Laboratory (4)
Basic drafting and rendering for stage and costume will be covered as well as development of lighting plots. Twenty hours of work on a major production are required.
Prerequisite: THA 261 or permission of instructor.

THA 363 Practicum in Rehearsal and Performance (2 or 4)
Participation in a student production supervised by a faculty member. Students will maintain a running lot, keeping track of their time and continuously evaluating their experiences. Credit is available for on-stage and backstage work. May be repeated for a total of 12 credits.

THA 365 Introduction to Makeup (4)
Theory and practice in theatre makeup.

THA 366 Introduction to Costuming (4)
Theory and practice in theatre costuming.

THA 368 Characterization (4)
Continuation of work on voice, body and concentration. Scene study focusing on the requirements of realistic acting.
Prerequisite: THA 230, THA 267.

THA 420 Improvisation and Theatre Games (4)
Group interaction such as improvisation, simulation, role-playing, sociodrama, creative dramatics, story and readers theatre, and educational games. Includes application of these techniques for group leadership, teaching and theatre performance.
Prerequisite: THA 267.

THA 430 Advanced Voice and Articulation (4)
Advanced work on voice and articulation with emphasis on vocal requirements of the stage, film and broadcasting performer. Some work on dialects and accents.
Prerequisite: THA 230 or permission of instructor.

THA 450 Directing Mini-Theatre Forms (4)
Direction and performance in theatre styles requiring minimal sets and appropriate for dinner theatre, touring shows, special occasions, etc. Includes forms such as: story theatre, chamber theatre, readers theatre, documentary theatre and media theatre.
Prerequisite: THA 267, 350 or equivalent.

THA 460 Theatre Management for School and Community (4)
Theory and practice in theatre organization and management. Includes publicity and promotion, box office procedures, production budgeting and auditing, house management, play selection and production organization.
Prerequisite: Junior standing and two THA courses.

THA 462 Directing (4)
Theory and practice in play directing. Includes intensive work on interpretation of the playscript, casting, staging, rehearsal techniques, supervision of technical staff and directing experience.
Prerequisite: THA 261, 267 and 363.

THA 464 Costume Design (4)
Introduction to costume history, drafting, cutting and construction, as well as the technique of rendering.
Prerequisite: THA 261, 363 and 366.

THA 466 Advanced Stage Design (4)
The concepts of stage design, rendering and drafting.
Prerequisite: THA 261, 362 and 363.

THA 467 Advanced Acting (4)
Continuation of work on body, voice and concentration. Focuses on the requirements of various acting and period styles.
Prerequisite: THA 267 and THA 368 or equivalent.

THA 480 Special Topics Seminar (4)
Group study of topics of special interest chosen by department faculty and students.
Prerequisite: Three theatre courses.

THA 490 Independent Study (2, 4 or 8)
Special research projects in theatre.
Prerequisite: Three theatre courses and permission of instructor.

THA 491 Internship (2, 4, 8 or 12)
Experience working with professionals in a variety of performing arts settings.
Prerequisite: Three theatre courses and permission of supervising faculty.

THA 497 Apprentice College Teaching (2 or 4)
Assisting in teaching an undergraduate course in theatre, and discussions with the supervising faculty member on the principles, methods and problems of such teaching.
Prerequisite: Junior standing and permission of instructor.

DANCE

DAN 100 Ballet I (2)
DAN 101 Ballet II (2)
DAN 200 Ballet III (2)
DAN 201 Ballet IV (2)
DAN 300 Ballet V (2)
DAN 301 Ballet VI (2)
DAN 400 Ballet VII (2)
DAN 401 Ballet VIII (2)
Covers the technique of classical ballet in an eight-semester progression. The technique, style, aesthetic interpretation and historical significance are presented in theory and practice.

DAN 402 Advanced Ballet: Partnering (2)
DAN 403 Advanced Ballet: Pointe and Variation (2)
Taken by ballet majors in conjunction with DAN 400 and 401.

DAN 110 Modern Dance I (2)
DAN 111 Modern Dance II (2)
DAN 210 Modern Dance III (2)
DAN 211 Modern Dance IV (2)
DAN 310 Modern Dance V (2)
DAN 311 Modern Dance VI (2)
DAN 410 Modern Dance VII (2)
DAN 411 Modern Dance VIII (2)
Covers the technique of modern dance in an eight-semester progression. The technique, style and aesthetic interpretation are presented in theory and practice.

DAN 120 Jazz Dance I (2)
DAN 121 Jazz Dance II (2)
DAN 220 Jazz Dance III (2)
DAN 320 Jazz Dance IV (2)
DAN 420 Jazz Studies: Tap I (2)
DAN 421 Jazz Studies: Tap II (2)
Covers the technique of jazz dance in a six-semester progression. The technique, style and musical relationships are presented in theory and practice.

DAN 150 Ballroom Dance (2)
Theory and technique of ballroom dance from 1900 to the present.

DAN 151 Folk and Square Dance (2)
Theory and technique of folk and square dance.

DAN 173 Dance History and Appreciation (4)
A historical survey of the development of theatre dance in Western culture. Course materials presented through lecture, discussion, films, slides and viewing of live dance performances. *Satisfies the university general education requirement in arts.*

DAN 250 Primitive Dance I (2)
The study of primitive technique as devised by Katherine Dunham. Integration of African rhythmic dance and Afro-American dance style defines this popular dance form.

DAN 299 Dance Workshop (1 to 4)
A workshop designed to give students opportunities for participation in a variety of dance experiences led by performing artists. Normally offered in the spring and summer. Graded S/U.

DAN 330 Kinesiology for the Dancer (4)
Analysis of movement from an anatomical and mechanical point of view with emphasis on problems of dance technique. Also includes prevention and treatment of dance-related injuries.
Prerequisite: Three dance courses.

DAN 350 Creative Dance for Children (4)
Methods and styles of teaching dance to children within schools, community centers and private studios.
Prerequisite: None.

DAN 351 Children's Dance Theatre: Rehearsal and Performance (4)
Choreography, rehearsal and performance of a dance program for children that tours local elementary schools.
Prerequisite: Permission of instructor.

DAN 372 Choreography I (4)
Theory of dance composition through reading, discussion, observation and experimentation.
Prerequisite: One full year of dance.

DAN 373 Dance for the Musical Theatre (4)
A practical and theoretical survey of dance within musical theatre from 1900 to the present. Class material presented through actual participation with some discussion of the period and style of dance.
Prerequisite: One dance course.

DAN 376 Practicum: Dance Rehearsal and Performance (2 or 4)
A technique- and performance-based laboratory course. Each student will participate in a dance performance during the semester, either as a performer or choreographer. Four credits are given for performance and choreography and 2 credits for performance only. May be repeated for a maximum of 8 credits.
Prerequisite: Permission of instructor.

DAN 390 Historical Dance (2)
The study of Baroque, Renaissance and nineteenth century social dance styles. Course includes practical, theoretical and historical background.

DAN 470 Elementary Labanotation (4)
An introduction to Laban's system of movement notation.
Prerequisite: 12 credits in dance, including DAN 173.

DAN 472 Choreography II (4)
Continuation of DAN 372 at a more advanced level.
Prerequisite: DAN 372.

DAN 480 Senior Recital (2)
A dance program choreographed and performed by a student in the final year of dance study.
Prerequisites: Senior standing, 24 credits in dance including DAN 173, 372, 376 and permission of instructor.

DAN 490 Independent Study (1, 2 or 4)
Permission of instructor. Graded S/U.

DAN 497 Apprentice College Teaching (2 or 4)
Supervised participation in teaching an undergraduate course in dance, together with discussion of teaching methods and objectives.
Prerequisite: Permission of instructor.

DEPARTMENT OF PHILOSOPHY

Chairperson: *Richard J. Burke*

Professor: *Richard J. Burke*

Associate professors: *David C. Bricker, Richard W. Brooks, J. Christopher Maloney*

Assistant professor: *John F. Halpin*

Adjunct professor and lecturer: *Charles E. Morton*

Visiting assistant professor: *Michael J. Morden*

Chief adviser: *Richard J. Burke*

Philosophy is one of the oldest yet often least understood of the liberal arts. The philosopher is interested in all aspects of human life, searching for the greatest possible clarity concerning the most fundamental questions. There is no one kind of philosophy; rather, there are many kinds, each with its own value.

Philosophy has always served two functions. The first is speculative, the attempt to formulate illuminating generalizations about science, art, religion, nature, society and any other important topic. The second is critical, the unsparing examination of its own generalizations and those of others to uncover unfounded assumptions, faulty thinking, hidden implications and inconsistencies. The study of philosophy is designed to encourage a spirit of curiosity, a sensitivity toward the uses of words, a sense of objective assessment toward oneself as well as others. Competence in philosophy is solid training for advanced study in such fields as law, government and public administration, as well as the ministry and teaching.

The Department of Philosophy offers programs of study leading to the Bachelor of Arts degree with a major in philosophy; modified major in philosophy with an international studies minor (South Asian studies program) or a concentration in linguistics or religious studies; and a minor in philosophy.

Requirements for the liberal arts major in philosophy

To earn the Bachelor of Arts degree with a major in philosophy, a student must complete 40 credits in philosophy, including:

1. One semester of logic (PHL 102, 202 or 370)
2. One semester of ethics (PHL 103, 316 or 318)
3. Two semesters in history of Western philosophy (PHL 204-206 or 307-308; PHL 204 and 206 are recommended)
4. At least 20 credits in PHL courses numbered 300 or above

A student may substitute other courses for any of the above with the permission of the department chairperson. Students planning to apply for graduate work in philosophy should meet with a faculty member to discuss which courses to take in addition to the above.

Departmental honors

Departmental honors in philosophy require at least a 3.50 G.P.A. in philosophy courses. Students who think they might qualify for departmental honors should submit an example of their philosophical writing to the department chairperson early in the semester in which they expect to graduate. This should normally be a substantial paper written in PHL 395, but two or three papers written in other courses will be acceptable. If this work is judged to be of sufficiently high quality, it will be read by the rest of the department, and a conference with the

student will be arranged. Departmental honors are thus based upon written and oral achievement in philosophy, as well as general performance in philosophy courses.

Requirements for a modified major in philosophy with an international studies minor (South Asian studies program), linguistics or religious studies concentration

Students with modified majors in philosophy must meet the same requirements as a liberal arts minor in philosophy (see below), except 24 credits in philosophy are required (instead of 20) and 12 credits in courses numbered 300 or above (instead of 8). In addition, they must meet one of the following sets of requirements:

1. Major in philosophy with a minor in international studies (South Asian studies program): 24 credits in philosophy, including PHL 352. For requirements in international studies, see page 85.
2. Major in philosophy with a concentration in linguistics: 24 credits in philosophy, including PHL 475. For requirements in linguistics, see page 90.
3. Major in philosophy with a concentration in religious studies: 24 credits in philosophy, including PHL 225. For requirements in religious studies, see page 185.

Requirements for the liberal arts minor in philosophy

To earn a minor in philosophy, students must complete 20 credits in philosophy, including:

1. One semester of logic (PHL 102, 202 or 370)
2. One semester of ethics (PHL 103, 316 or 318)
3. One semester of metaphysics/epistemology (PHL 204, 205, 206, 308, 329, 333, 340, 401, 437 or 475)
4. At least 8 credits in courses numbered 300 or above

Departmental course prerequisites

In general, 100-level courses presuppose no prior college experience, 200-level courses presuppose some, 300-level courses require at least one prior philosophy course or junior standing, and 400-level courses are primarily for students majoring in philosophy. However, strict prerequisites have been kept to a minimum to encourage non-majors to take philosophy courses as electives.

Course Offerings

PHL 100 Topics in Philosophy (4)
A study of one philosophical topic or problem, to be announced in the schedule of classes each semester.

PHL 101 Introduction to Philosophical Thinking (4)
Study of the main types and problems of Western philosophy. Readings are chosen to illustrate the development of Western thought from the ancient Greeks to the present. Offered every semester. *Satisfies the university general education requirement in Western civilization.*

PHL 102 Introduction to Logic (4)
The relationship between conclusions and statements given in support of them. In addition to elementary deductive and inductive logic, topics may include analysis of ordinary arguments, argument by analogy and informal fallacies. Offered every semester. *Satisfies the university general education requirement in mathematics, logic and computer science.*

PHL 103 Introduction to Ethics (4)
Major ethical analyses of right and wrong, good and evil, from the ancient Greeks to the present. Appeals to custom, theology, happiness, reason and human nature will be examined as offering viable criteria for judgments on contemporary issues of moral concern. Offered every semester. *Satisfies the university general education requirement in Western civilization.*

PHL 202 Introduction to Symbolic Logic (4)
Formal or symbolic logic is a study of what makes deductive arguments valid, employing symbols to represent sentences, words, phrases, etc. in order to reveal the formal structure of the arguments. Offered every year. *Satisfies the university general education requirement in mathematics, logic and computer science.*

PHL 204, 205, 206 History of Western Philosophy (4 each)
The development of systematic philosophical thought in the Western world from its beginning in the Mediterranean region to 1800 A.D. The three courses are PHL 204, Classical Greek Philosophy, PHL 205, Hellenistic and Medieval Philosophy, and PHL 206, Early Modern Philosophy. Each course may be taken separately, although together they present a continuous development. *Satisfies the university general education requirement in Western civilization.*

PHL 221 Political Philosophy (4)
The meanings of central concepts in political philosophy, such as justice, freedom and authority are examined through readings in classical political philosophers and crucial problems. Offered every other year.

PHL 225 Philosophy of Religion (4)
Examination of arguments for and against the existence of God, the nature of religious language, relations between religion and philosophy. Offered every other year. Identical with REL 225.

PHL 250 Philosophies and Religions of Asia (4)
The major religions of India, China and Japan with emphasis on their philosophical significance. The course will cover Hinduism, Jainism, Confucianism, Taoism and Buddhism, both the ancient traditions and some modern developments. Offered ever year. Identical with REL 250.

PHL 260 American Philosophy (4)
A historical survey of American philosophy, from its beginnings in New England puritanism to the present day. Emphasis on Peirce, James and Dewey.

PHL 300 Topics in Philosophy (4)
One philosophical topic or problem at an intermediate level of difficulty. Topic to be announced in the schedule of classes for each semester.
Prerequisite: One philosophy course.

PHL 301 Human Nature (4)
Identical with HRD 301.

PHL 302 Ethics and Personal Crises (4)
Identical with HRD 302.

PHL 307 European Philosophy since Kant (4)
Among the major philosophers included are Hegel, Marx, Nietzsche and Sartre. Several types of Marxism and existentialism will be distinguished, and their influence in this country will be discussed. Offered every two years.
Prerequisite: One philosophy course.

PHL 308 Twentieth Century British and American Philosophy (4)
The issues that have dominated Anglo-American philosophy in the twentieth century. The course will trace the history that has led Americans and Britons to look at philosophy in a new way, appropriate to our scientific world-view.
Prerequisite: One philosophy course; PHL 206 recommended.

PHL 310 Philosophy of Rhetoric (4)
The problem of "objectivity," the distinction between persuasion and proof, and the consequences of denying such a distinction. Readings include Plato's *Gorgias*, Aristotle's *Rhetoric*, and modern discussions of rhetoric and society. Offered every other year. Identical with SCN 310.
Prerequisite: Junior standing.

PHL 312 Aesthetics (4)
The nature of aesthetic experience and aesthetic judgment in the appreciation of nature and art. Major theories of the creation and structure of works of art, and the logic and semantics of aesthetic judgment. Offered every other year.
Prerequisite: One philosophy course, or a course in art, music or literature.

PHL 316 Ethics in Business (4)
Review of basic ethical theory, and application to typical moral problems in business practices and institutions. Offered every year.
Prerequisite: Junior standing.

PHL 318 Ethics and the Health Sciences (4)
Central ethical issues in modern health care and research. Included are the distribution and allocation of health resources, the right to life and death, "informed consent," and eugenics. Offered every year.
Prerequisite: Junior standing.

PHL 319 Philosophy of Law (4)
The nature of law and legal obligation, with emphasis on the relation of law, coercion and morality. Attention is also given to such issues as the nature of legal reasoning, the justifiability of civil disobedience and the justification of punishment. Offered every other year.
Prerequisite: Junior standing; PHL 103 or PS 241 recommended.

PHL 329 Philosophy of Science (4)
Philosophical problems arising from critical reflection on the sciences. Typical topics: the structure of scientific explanation, the nature of scientific laws and theories, causality and confirmation. Offered every other year.
Prerequisite: At least one course in philosophy and one in natural science, either in high school or college.

PHL 333 Theories of Knowledge (4)
Critical examination of knowledge claims and of the types of justification given in their support. Typical topics: skepticism; empiricism; rationalism; believing and knowing; intuition; limits of knowledge. Offered every other year.
Prerequisite: One philosophy course; PHL 206 recommended.

PHL 340 Metaphysics (4)
Study of selected influential attempts to characterize the basic features of the world. Emphasis on reformulations of metaphysical problems in the light of modern advances in scientific knowledge. Offered every other year.
Prerequisite: One philosophy course; PHL 204 recommended.

PHL 352 Indian Philosophy (4)
The presuppositions and doctrines of India's major philosophic systems. Realistic, idealistic, pluralistic, dualistic and monistic systems will be considered, with some reference to contemporary developments. Offered every other year.
Prerequisite: PHL 250 or IS 240.

PHL 370 Advanced Symbolic Logic (4)
Standard first-order symbolic logic, emphasizing quantification theory and including identity theory and logical semantics. The logical system is approached both as a formal system and as a theoretical analysis of human reasoning. Offered every other year.
Prerequisite: PHL 102 or 202, or CSE 130, or MTH 112 or equivalent.

PHL 390 Directed Readings in Philosophy (2)
Tutorial on a topic not included in regular courses, primarily (but not exclusively) for majors. Students should consult with the department chairperson before approaching a faculty member with a topic. Graded S/U.
Prerequisite: One philosophy course at Oakland and permission of instructor; junior standing.

PHL 395 Independent Study in Philosophy (4)
Tutorial on a topic not included in regular courses, primarily (but not exclusively) for majors. Students should consult with the department chairperson before approaching a faculty member with a topic. In addition to reading and consultation, the student will write a substantial term paper.
Prerequisite: One philosophy course at Oakland and permission of instructor; junior standing.

PHL 401 Study of a Major Philosopher (4)
A study of the works of one major philosopher. The specific philosopher will vary, but courses on Plato, Aristotle and Kant will be offered every few years. May be repeated for credit.
Prerequisite: One philosophy course; PHL 204, 205, 206, 307 or 308 recommended, whichever is relevant.

PHL 437 Philosophy of Mind (4)
Selected topics or works in the philosophical literature about mind. Some topics are: the nature of psychological explanation, the relation of mind and body, thinking, emotions, concepts, consciousness and remembering. Offered every other year.
Prerequisite: PSY 100 and one philosophy course; junior standing.

PHL 465 Seminar on a Philosophical Topic (4)
One philosophical topic or problem at an advanced level of difficulty, normally requiring considerable background in philosophy. Topic and prerequisites to be announced in the schedule of classes for each semester.

PHL 475 Philosophy of Language (4)
Philosophical theories of natural language structure. Emphasis on views about what meaning is and how we are to explain our ability to communicate with one another. Offered every year. Identical with LIN 475.
Prerequisite: PHL 102 or 202, or LIN 207; junior standing.

PHL 497 Apprentice College Teaching (4)
Open to a well-qualified philosophy student who is invited by a faculty member to assist in a regular college course, usually as preparation for a career as a professor of philosophy.

DEPARTMENT OF PHYSICS

Chairperson: *Norman Tepley*

Professors: *Abraham R. Liboff, John M. McKinley, Ralph C. Mobley, Norman Tepley, Robert M. Williamson*

Associate professors: *Beverly Berger, Michael Chopp, Paul Doherty, Fredrick W. Hetzel, W. D. Wallace*

Assistant professor: *Hai-Woong Lee*

Adjunct professors: *Adrian Kantrowitz, Paul D. Stein*

Clinical professors of medical physics: *Howard J. Dworkin, Harold Portnoy, Gerald C. Timmis*

Clinical associate professors of medical physics: *Taljit S. Sandhu, Donovan M. Bakalyar*

Clinical assistant professors of medical physics: *Morris I. Bank, Michael B. Smith*

Clinical instructors of medical physics: *James R. Ewing, Ray A. Carlson*

Courses within the Department of Physics are grouped into two categories — preprofessional career programs and experiences in science for students with broad interests in contemporary human culture. The latter are strongly recommended for students planning any of a wide range of careers, including law, business, criminology, art history, music, government, education and journalism.

Programs of study lead to the Bachelor of Science degree with majors in physics, medical physics and engineering physics, Bachelor of Arts degree with a major in physics and Master of Science degree.

The Bachelor of Science in physics is intended for students who plan to become professional scientists. It qualifies students for graduate studies in physical sciences or research positions in government and industry. Students pursuing this degree should consult with faculty members on different available specialties.

The Bachelor of Arts in physics is primarily designed for students who desire a broader, less professionally specialized background in physics. The minor in physics is available for students who want to supplement their work in other fields with an introduction to physics. A secondary teaching minor in physics is available.

The Bachelor of Science in medical physics, offered jointly with the School of Health Sciences, is based on a group of physics courses plus relevant biology, chemistry and mathematics courses. In their senior year, these students take *Physics of Diagnostic Radiology* and *Physics of Nuclear Medicine.* In addition, these students are placed in hospitals as medical physics interns, where they assist the resident medical physicist in providing clinical medical physics support and thereby gain direct experience in the clinical environment. (Interested students should consult with the medical physics adviser for specific information and counseling.)

The Bachelor of Science in engineering physics, which is offered jointly with the School of Engineering and Computer Science, is intended for well-qualified students who seek a broad education in physics and mathematics along with basic preparation in engineering.

Advisers in the various physics fields are professors Beverly Berger (astronomy), Michael Chopp (medical physics), Paul Doherty (geophysics), Abraham R. Liboff (biophysics), John M. McKinley (engineering physics), Ralph C. Mobley (industrial physics, electronics), and Robert Williamson (teaching minor). Independent research projects are available in each area.

A limited number of upper-level internships are available in medical physics. Students wishing to take a hospital internship (medical physics) or an internship in Washington or Lansing (physics and public policy) are urged to declare their intentions as early as possible.

Requirements for the liberal arts major in physics, B.A. program

To earn the Bachelor of Arts degree with a major in physics, students must complete:

1. 32 credits in physics, with at least 22 credits in courses numbered above 200
2. 20 additional credits in chemistry, mathematics and physics

Students interested in a secondary teaching major in physics should consult the chair or the chief academic adviser of the department.

Requirements for the major in physics, B.S. program

To earn the Bachelor of Science degree with a major in physics, students must complete:

1. 20 required credits in physics (PHY 151, 152, 158 or 317, 351, 371).
2. 22 elective credits in physics at or above the 200 level, including at least 2 credits of laboratory course work. PHY 361 and PHY 381 are strongly recommended for students planning graduate work in physics.
3. MTH 154, MTH 155, MTH 254 and either MTH 256 or APM 257.
4. 10 credits of chemistry at a level not below CHM 144.

Requirements for the major in medical physics, B.S. program

To earn the Bachelor of Science degree with a major in medical physics*, students must complete:

1. PHY 151, 152, 158 or 317, 318, 341, 347, 351, 371, 372, 381, 441, 442, 443 and 444.
2. MTH 154, 155, 254, STA 226 and APM 257.
3. CHM 144, 145, 149 plus 4 additional credits at a level not below CHM 144 (CHM 201 may be taken for credit).
4. BIO 200, 205 and 207.

*For more information about this program, see the School of Health Sciences section of this catalog.

Requirements for the major in engineering physics, B.S. program

Coordinator: *John M. McKinley*

To earn the Bachelor of Science degree with a major in engineering physics*, students must complete:

1. MTH 154, 155, 254 and APM 257.
2. CHM 144 and 145 (or CHM 164 and 165).
3. PHY 151, 152, 158, 341 (or EE 326), 351, 361 and 371 plus PHY 331, 381 or 472. (Students planning to take advanced EE courses should also take PHY 347.)
4. EGR 101, CSE 171, EE 222, EE 326 (or PHY 341), ME 241, SYS 317, SYS 325, EGR 401 and three 4-credit 400-level engineering electives of the same designations, at least two of which must be chosen from the list of approved designated electives.
5. At least 7 to 8 credits from the following list: APM 263, MTH 256, PHY 318, PHY 331, PHY 372, PHY 381, PHY 418, PHY 472, PHY 482, ME 331, ME 361, EE 351, EE 384 or any EGR, EE, ME or SYS 400-level courses.
6. Free electives (5-6 credits) may be used to satisfy writing proficiency. For limitations on free electives see page 224.

*Students in this program are not required to complete the college distribution requirement, detailed on page 41. For further information about this program, see the School of Engineering and Computer Science section of this catalog.

In addition to the previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.00 in mathematics, science, engineering and computer science courses taken to meet program requirements.

Approved design electives for engineering physics (two courses are required as part of the engineering core of the degree program):

EE 426	Advanced Electronics (4)
EE 437	Introduction to Communication Electronics (4)
EE 470	Microprocessors and Microcomputers (4)
EE 472	Microprocessor-based Control Systems (4)
ME 454	Solar and Alternate Energy Systems (4)
ME 461	Analysis and Design of Mechanical Structures (4)
ME 482	Fluid and Thermal Energy Systems (4)
ME 486	Machine Design (4)
ME 487	Mechanical Engineering CAD/CAM Systems (4)
SYS 410	Systems Optimization and Design (4)
SYS 483	Production Systems (4)

An approved EGR 490 or PHY 490 course may count for one of the design electives.

Students should note that some approved design electives have prerequisites that are not automatically met by completion of the required courses in engineering. Thus, careful selection of technical electives is essential to preserve choice in later selection of design electives.

Departmental honors

Departmental honors may be awarded to students on the basis of high academic achievement and either independent research or meritorious service to the Department of Physics.

Requirements for the liberal arts minor in physics

To earn a minor in physics, students must complete 20 credits in physics, including PHY 101-102 or 151-152, 158 and at least 8 credits in physics courses numbered 300 or above.

Requirements for the secondary teaching minor in physics

To earn a secondary teaching minor in physics, students must complete PHY 101-102 or 151-152, 158 and 10 credits in physics approved by the teaching minor adviser by the end of their sophomore year.

Course Offerings

PHY 100 Physics Problem Lab (0)
Techniques for solving problems in PHY 101, 102, 151, 152. Offered fall and winter.
Corequisite: Concurrent enrollment in any of PHY 101, 102, 151, 152.

PHY 101 General Physics I (4)
Mechanics, fluids, thermodynamics. Calculus is not required. Offered fall and winter.
Prerequisite: High school algebra and trigonometry or equivalent. Concurrent enrollment in PHY 100 is required. *Satisfies university general education requirement in natural science and technology.*

PHY 102 General Physics II (4)
Sound, light, electricity and magnetism, atomic and nuclear physics. Offered fall and winter.
Prerequisite: PHY 101. Concurrent enrollment in PHY 100 is required.

Each of the following courses is designed for nonscience majors.

PHY 104 Astronomy: The Solar System (4)
The sun, planets, space travel, the search for extraterrestrial life. Offered fall only. *Satisfies university general education requirement in natural science and technology.*

PHY 105 Astronomy: Stars and Galaxies (4)
Nature and evolution of stars, the Milky Way and other galaxies, cosmology. Offered winter only. *Satisfies university general education requirement in natural science and technology.*

PHY 106 Earth Sciences I (4)
The earth as a planet. Topics include: origin, history, orbit, gravity, rocks and minerals, earthquakes, the interior and the theory of continental drift. Offered fall only. *Satisfies university general education requirement in natural science and technology.*

PHY 107 Earth Sciences II (4)
The surfaces of the earth, including the atmosphere and oceans. Topics include: climate, meteorology, continental evolution, weathering, glaciers, wind and the energy resources of the earth. Offered winter only. *Satisfies university general education requirement in natural science and technology.*

PHY 115 Energy (4)
Basic physical principles of energy, sources, transmission and distribution. Political, economic and ecological considerations. *Satisfies university general education requirement in natural science and technology.*
Prerequisite: High school algebra.

PHY 125 The Physics of Music (4)
Lectures and experiments on the nature of vibrations, waves and sound as applied to musical instruments and scales, voice, hearing, room acoustics and electronic music. Offered fall only. *Satisfies university general education requirement in natural science and technology.*
Prerequisite: High school algebra.

PHY 127 Human Aspects of Physical Science (4)
Primarily for the student wishing to explore the interaction of the physical and social sciences. Format varies to reflect the impact of physics on contemporary life, particularly on politics, economics and behavior, as well as environment and well-being. Offered winter only. *Satisfies university general education requirement in natural science and technology.*
Prerequisite: High school algebra.

PHY 141 The Physics of Health Care (4)
Introduction to the physical principles of health-care delivery. Scientific systems and method. Data-collecting measurements, problem-solving, applications, physical hazards, radiation dosimetry and electrical safety. Offered fall and winter.
Prerequisite: High school algebra.

The following courses are designed primarily for the physics major and for majors in the other sciences and engineering.

PHY 150 Perspective and Method in Contemporary Physics (4)
A survey of contemporary physics; e.g., black holes, quarks, nuclear energy and fusion. Methods in physics and techniques of problem solving. Offered fall only.
Prerequisite: High school algebra.

PHY 151 Introductory Physics I (4)
Classical mechanics and thermodynamics. For science, mathematics and engineering students. Offered fall and winter. *May be used in place of PHY 101 to satisfy the general education requirement in natural science and technology.*
Prerequisite: Physics placement test and MTH 154. Concurrent enrollment in PHY 100 is required.

PHY 152 Introductory Physics II (4)
Sound, light, electricity and magnetism. Offered fall and winter.
Prerequisite: PHY 151. Corequisite: MTH 155. Concurrent enrollment in PHY 100 is required.

PHY 158 General Physics Laboratory (2)
Elementary experiments in mechanics, heat, sound, electricity and optics for students with little high school physics laboratory experience. Offered fall and winter.
Prerequisite: PHY 101 or 151. Corequisite: PHY 102 or 152.

PHY 241 Introductory Electronics for Scientists I (2)
D.C. circuits, voltage and current generation and measurement.
Prerequisite: High school algebra.

PHY 242 Introductory Electronics for Scientists II (2)
Digital circuits. (PHY 241 is not a prerequisite.)
Prerequisite: High school algebra.

PHY 243 Introductory Electronics for Scientists III (2)
A.C. circuits.
Prerequisite: PHY 241 or equivalent.

PHY 290 Introduction to Research (2 or 4)
Independent study and/or research in physics for students with no research experience.
Prerequisite: Written agreement of a physics faculty supervisor.

PHY 304 Astrophysics I (4)
Application of elementary physics to the study of planets, stars, galaxies and cosmology. Offered every other year in fall only.
Prerequisite: PHY 152 or PHY 102, and MTH 155.

PHY 305 Astrophysics II (4)
Continuation of PHY 304. Offered every other year in winter only.
Prerequisite: PHY 304.

PHY 306 Observational Astronomy (2)
A lecture/laboratory course using the Oakland University Observatory and providing basic training in astronomical techniques.
Prerequisite: PHY 158; or PHY 104 or 105 and permission of instructor.

PHY 307 Geophysics (4)
The application of physics concepts to the study of the earth, gravity and its anomalies, geomagnetism, earth-sun energy, geochronology and seismic wave propagation. Offered every other year in fall only.
Prerequisite: PHY 152 or PHY 102, and MTH 155. PHY highly recommended.

PHY 308 Physical Oceanography (4)
Physical oceanography and meteorology; composition and structure of the atmosphere and oceans. Interactions of sea water with the atmosphere, the continents and man. Offered every year in winter only.
Prerequisite: PHY 152 or PHY 102, and MTH 155. PHY 107 highly recommended.

PHY 317 Modern Physics Laboratory (2)
Optics and atomic physics experiments. Offered fall only.
Prerequisite: PHY 158. Corequisite: PHY 371.

PHY 318 Nuclear Physics Laboratory (2)
Nuclear physics experiments. Offered winter only.
Prerequisite: PHY 158. Corequisite: PHY 372.

PHY 325 Biophysical Science I (4)
Lecture course emphasizing the physics of living systems: thermodynamics in biology, information theory, theories of aging, biomolecular structure, nerve conduction, radiation biology. Offered fall only.
Prerequisite: PHY 152 or PHY 102, and MTH 155.

PHY 326 Biophysical Science II (4)
Lecture course presenting application of the physical laws to operation of modern biophysical instruments; the electron microprobe, ultracentrifuge, spectrometer, laser light scattering, optical and x-ray diffraction and acoustic probe. Offered winter only.
Prerequisite: PHY 152 or PHY 102, and MTH 155.

PHY 331 Optics (4)
Geometrical optics, optical instruments, wave theory of reflection, refraction, interference, diffraction and polarization of light. Offered winter only.
Prerequisite: PHY 152 or PHY 102, and MTH 155. Corequisite: MTH 254.

PHY 341 Electronics (4)
Electronics for scientists, circuit theory, transistors, power supplies, linear amplifiers, oscillators. Offered winter only.
Prerequisite: PHY 158 and MTH 155, and either PHY 152 or PHY 102. Concurrent enrollment in PHY 347 is recommended.

PHY 347 Electronics Laboratory (2)
Circuits and electronics experiments. Offered winter only.
Corequisite: PHY 341.

PHY 351 Intermediate Theoretical Physics (4)
Topics and techniques common to intermediate physics courses. Includes analytical and numerical (computer) solution techniques, DIV, GRAD, CURL and Fourier analysis. Offered fall only.
Prerequisite: PHY 152 or PHY 102, and MTH 155.

PHY 361 Mechanics I (4)
Applications of Newton's laws to particles, systems of particles, harmonic oscillators, central forces, accelerated reference frames and rigid bodies. Offered fall only.
Prerequisite: PHY 152 or PHY 102, and MTH 254.

PHY 371 Modern Physics (4)
Introduction to relativity, kinetic theory, quantization and atomic physics. Additional topics chosen from physics of molecules, solids, nuclei and elementary particles. Offered fall only.
Prerequisite: PHY 152 or PHY 102, and MTH 155. Concurrent enrollment in PHY 317 is recommended.

PHY 372 Nuclear Physics (4)
Radioactivity, interaction of radiations with matter, accelerators, nuclear reactions, fission and fusion. Offered winter only.
Prerequisite: PHY 102 or 152, and MTH 155; concurrent enrollment in PHY 318 is recommended.

PHY 373 Physics in Medicine (4)
Especially for premedical students, wishing to explore the physical basis of medicine, including signal analysis feedback and control, biomechanics, body fluid dynamics, bioelectricity, nuclear physics and nuclear medicine, x-rays, electrical properties of nerves and membrane transport.
Prerequisite: PHY 152 or PHY 102, and MTH 155.

PHY 381 Electricity and Magnetism I (4)
Maxwell's equations and the experimental laws of electricity and magnetism. Potential theory, boundary conditions on the electromagnetic field vectors, field energy. Dielectrics, conductors and magnetic materials. Offered winter only.
Prerequisite: PHY 351 and MTH 254. APM 257 desirable.

PHY 400 Undergraduate Seminar (1)
Graded S/U.

PHY 405 Special Topics (2, 4 or 6)
Prerequisite: Permission of department.

PHY 418 Modern Optics Laboratory (2)
Laboratory studies employing sophisticated laser, spectrometer and photon counting techniques and equipment including atomic absorption spectroscopy, intensity fluctuation spectroscopy, atomic and molecular fluorescence and Brillouin scattering. Offered winter only.
Prerequisite: PHY 371 and PHY 158.

PHY 421 Thermodynamics (4)
The zeroth, first and second laws of thermodynamics with applications to pure substances. Introduction to the kinetic theory of gases and to statistical mechanics. Offered fall only.
Prerequisite: PHY 361 and APM 257.

PHY 441 Physics of Radiology I (2)
Physical principles underlying the practice of radiology. Offered fall only.
Prerequisite: Departmental approval and PHY 371, 381 and 347.

PHY 442 Physics of Radiology II (2)
A continuation of PHY 441. Offered winter only.
Prerequisite: PHY 441.

PHY 443 Physics of Nuclear Medicine I (2)
Physical principles of diagnostic and therapeutic applications of radio-nuclides. Offered fall only.
Prerequisite: Approval of department and PHY 371, 381 and 347.

PHY 444 Physics of Nuclear Medicine II (2)
A continuation of PHY 443. Offered winter only.
Prerequisite: PHY 443.

PHY 445 Medical Instrumentation (2)
Detailed examination of the scientific instrumentation used in modern medical diagnostic and therapeutic practice. Offered winter only.
Prerequisite: Approval of department, PHY 371, 381 and 347.

PHY 470 Relativity (4)
Special relativity in mechanics and electromagnetism. Introduction to general relativity and gravitation. Offered winter only.
Prerequisite: PHY 361 or 371 or 381.

PHY 472 Quantum Mechanics I (4)
Principles of nonrelativistic quantum mechanics, Schrodinger wave equation, expectation values of energy, position, momentum and angular-momentum operators, spin, perturbation theory, identical particles. With applications to atomic systems. Offered fall only.
Prerequisite: PHY 351, 361, 371 and APM 257.

PHY 482 Electricity and Magnetism II (4)
Multipole fields, solutions of Laplace and Poisson equations, electromagnetic waves in insulators and conductors, radiation, and the derivation of the laws of optics from Maxwell's equations. Offered winter only.
Prerequisite: PHY 381, APM 257 and MTH 256.

PHY 490 Independent Study and Research (2, 4 or 6)
Prerequisite: Four credits of 300-level physics and written agreement of a physics faculty supervisor.

PHY 497 Apprentice College Teaching (2)
Directed participation in teaching selected undergraduate physics courses. May be repeated for a maximum of 4 credits. Graded S/U.
Prerequisite: Permission of instructor.

DEPARTMENT OF POLITICAL SCIENCE

Chairperson: *Edward J. Heubel*

Professors: *Sheldon Appleton, Thomas W. Casstevens, Edward J. Heubel, Roger H. Marz, James R. Ozinga, Carl R. Vann (Health Behavioral Sciences and Political Science)*

Associate professors: *Robert J. Goldstein, Vincent B. Khapoya, William A. Macauley*

Assistant professors: *Richard F. Kanost, Nancy Kursman, Brent Steel*

Adjunct professor: *Paul Wileden*

Instructor: *Karen Maschke*

Visiting assistant professor: *John Klemanski*

Chief academic adviser: *James R. Ozinga*

Internship director: *John Klemanski*

Political science offers a concentrated and systematic study of politics at all levels of government and in many different cultural and national settings. Policy making, law, political behavior, administration, international politics, foreign governments and theories and philosophies of government are among the many topics covered in these courses. The general educational aim is to increase the student's awareness and understanding of the broad realm of politics and government. Many students electing this major wish to prepare for careers in public service, law, practical politics or the teaching of government and social studies.

The Bachelor of Arts degree with a major in political science is the department's broadest program and is appropriate for the student with an interest in public affairs or the student who intends to enter law school or graduate school. The department also offers a major in public administration leading to the Bachelor of Science degree. This program is designed to provide appropriate analytical skills and prepare students for direct entry into public service or for specialized graduate programs in public administration and public policy. A Master of Public Administration degree is also offered by the department (see the *Oakland University Graduate Catalog*).

Requirements for the liberal arts major in political science leading to a Bachelor of Arts degree:

To be admitted to major standing, students must complete the following core program: PS 100, 131, 222 and 223 with minimum grade of 2.0 in each course and with an average grade in the four courses of 2.50 or above.

To remain in good standing, students must maintain an average of 2.00 in their remaining political science courses. The major requires 40 credits in political science, distributed as follows:

1. The core program (14 credits). PS 222 and 223 should be taken in the sophomore year if possible and no later than the junior year.
2. At least one 4-credit course at the 300-400 level must be selected from each of the three fields in political science: American politics, comparative politics and political theory for a total of 12 credits.
3. The remaining 14 credits in political science are electives, with the following restrictions: only 4 credits of PS 110 and no more than 12 credits of PS 390 and 490 will be accepted in the major.

Requirements for the liberal arts major in public administration and public policy leading to a Bachelor of Science degree:

To be admitted to major standing, students must complete the following core program: PS 100, 131, 222 and 223 with a minimum grade of 2.0 in each course and with an average grade in the four courses of 2.50 or above.

To remain in good standing, students must maintain an average of 2.00 in their remaining major and corequisite courses. The major requires 56 credits, distributed as follows:

1. The core program (14 credits: PS 100, 131, 222 and 223). PS 222 and 223 should be taken in the sophomore year if possible and no later than the junior year.
2. The sequence of departmental courses (26 credits. Required are: PS 257, 350, 353, 453, 454 and 458). Enrollment in PS 458 (8), the Public Affairs Internship, must be preceded by consultation with John Klemanski, director of internships. If the student does not elect to take PS 458, an alternative 8 credits of political science, approved by the chief adviser, are required.
3. The corequisites (16 credits). The following courses are required: ACC 220, STA 225, and ECN 200 and 201 (ECN 210 — 6 credits — is acceptable in lieu of 200 and 201).

For students contemplating graduate school, MTH 141 and 122 are strongly recommended.

Departmental honors

Departmental honors are conferred upon graduates who successfully complete a PS 490 project and paper at the honors level during their senior year. Students seeking honors should obtain departmental permission before registering for a 490 project.

Requirements for a major in political science with other concentrations

Students in political science may pursue a regular major in political science with a number of interdepartmental concentrations. These include, among others, American studies, applied statistics, Michigan studies, social justice and corrections, and women's studies.

Students who wish to pursue a teaching major in social studies with an emphasis on political science should see the Secondary Teaching Social Studies Program section of this catalog.

Recommended courses for prelaw students

It is recommended that political science majors interested in law school elect the law-related courses given by the department: "Law and Politics" (PS 241) and "American Legal System I and II" (PS 342, 343). For advice in planning for law school, contact the department's prelaw adviser, Professor Karen Maschke. The student should also read the Prelaw Studies section of this catalog (see page 188).

Legal Assistant Program political science credit

In cooperation with the Division of Continuing Education, the Department of Political Science sponsors courses that prepare students for the legal assistant field. In addition to the foundation courses, certain of these courses focus on areas such as general practice, litigation, probtate and estate planning. Completion of the program as specified by the Division of Continuing Education leads to a diploma awarded by that division.

A student majoring in political science may offer up to 8 credits of this course work toward the 40 credits required for the major. Courses approved to date by the Committee on Instruction are listed below. For specific details, consult the department.

PS 344	(CE 2506)	Substantive Law (1)
PS 345a	(CE 2510)	Legal Research and Writing I (1)
PS 345b	(CE 2511)	Legal Research and Writing II (1)
PS 346	(CE 2520)	Real Property Transactions (1)

PS 347	(CE 2525)	Estates and Trusts (1)
PS 348	(CE 2530)	Corporations (1)
PS 349	(CE 2535)	Litigation (1)
PS 447a	(CE 2550)	Administration of Decedent's Estates (1)
PS 447b	(CE 2555)	Federal Estate and Gift Taxes (1)
PS 447c	(CE 2560)	Income Taxation of Estates and Trusts (1)
PS 447d	(CE 2565)	Drafting of Wills and Trusts (1)
PS 447e	(CE 2568)	Estate Planning and Documents (1)
PS 449a	(CE 2541)	Litigation I: Case Preparation before Trial (1)
PS 449b	(CE 2541)	Litigation II: Case Preparation before Trial (1)
PS 449c	(CE 2545)	Litigation III: Case Preparation before Trial (1)
PS 449d	(CE 2547)	Litigation IV: Anatomy of a Lawsuit (1)
PS 491		Special Topics for Legal Assistant (1)
PS 492	(CE 2599)	Legal Assistant Internship (2)

Requirements for the liberal arts minor in political science

To earn a minor in political science, students must complete 20 credits in political science, including PS 100 or PS 131 and at least 8 credits at the 300-400 level.

Course Offerings

PS 100 Introduction to American Politics (4)
The decision-making process in the American national government and the ways in which parties, groups, and individuals work to produce public policy in Congress, the Presidency and the courts. *Satisfies the university general education requirement in social science.*

PS 110 Contemporary Political Issues (4)
Selected topics dealing with current political issues or public policy problems. The particular topic will be announced at the time of offering. Designed for the general student. May be repeated for credit with different topics.

PS 115 U.S. Foreign Policy (4)
Foreign policy issues and challenges confronting the U.S. in the nuclear age in light of the historical evolution of American diplomacy and in light of the limitations imposed upon foreign policy makers by public opinion and the exigencies of domestic politics. *Satisfies the university general education requirement in social science.*

PS 131 Foreign Political Systems (4)
Analysis of contemporary politics and governmental systems of selected countries; types chosen range from established constitutional democracies and totalitarian systems to movements and regimes of new developing nations. Offered fall and winter. *Satisfies the university general education requirement in social science.*

PS 203 The Politics of Race and Ethnicity (4)
A study of racial and ethnic groups and their role in the political process in the U.S. Emphasis will be placed on the political experience and the struggle for equal rights by major minority groups such as Blacks, Hispanics and Native Americans.

PS 222 Research Methods and Statistics (4)
A study of research design, measurement of political variables and data analysis.
Prerequisite: One course in political science.

PS 223 Computer Techniques (2)
Introduction to the computing environment at the university; microcomputer packages in word-processing, electronic spreadsheet analysis and business graphics; statistical packages on the mainframe computer. Laboratory exercises will be coordinated with materials in PS 222. Not open to students who have completed PS 220.

PS 241 Law and Politics (4)
A broad survey of the function of law and legal systems in the political order. The student will be exposed to the classic jurisprudential, historical, anthropological and comparative treatments of the subject.

PS 250 Politics of Survival (4)
An examination of environmental, regulatory and energy related political issues that challenge human survival both nationally and globally.

PS 257 Public Affairs Careers Orientation (2)
Planning for public service careers; the varieties of public service careers and the alternative of pursuing advanced degrees are explored. Examples and practical problems from agency work are examined through case studies and presentations by practitioners and professional administrators.

PS 301 American Presidency and the Executive Process (4)
A study of presidential politics, decision making and leadership in the American political system.
Prerequisite: PS 100.

PS 302 Legislative Process and Public Policy (4)
A study of legislative behavior and decision making, emphasizing the problems of public policy development in the American political system.
Prerequisite: PS 100.

PS 305 Politics of the Local Community (4)
Study of local governments, political forces, trends in metropolitan and suburban politics, and problems of planning in an age of urbanization.
Prerequisite: PS 100.

PS 307 State Politics (4)
Comparative analysis of the variations and similarities of the political systems of the 50 states; the policy-making structures; political participation; and contemporary public policy issues.
Prerequisite: PS 100.

PS 314 International Politics (4)
Interdisciplinary study of concepts and hypotheses basic to the understanding and analysis of political and economic relations and conflict among nations, states and other institutions in the international system. Not open to students who have completed PS 213.

PS 318 Foreign Policies of Communist Systems (4)
Relations since 1917 between communist states and the Western world as well as relations among communist states.
Prerequisite: PS 131.

PS 320 Laboratory in Empirical Methods (4)
Topics include social science data management, two or three batch and conversational statistical packages, some computer programming, some statistics not covered in PS 222, and different modes of empirical political science research.
Prerequisite: PS 222.

PS 321 Systematic Political Analysis (4)
A study of formal models in political science.

PS 323 The American People and Their Presidents (4)
Study of the relationships among public attitudes toward the Presidency and the political system, voting behavior in Presidential elections, and Presidential policies and leadership.
Prerequisite: PS 100.

PS 324 Political Parties and Elections (4)
The study of electoral systems, political parties, and the voting behavior of individuals and groups, with special attention to U.S. political experience.
Prerequisite: PS 100.

PS 329 European Political Systems (4)
An analysis of politics within and between nations in Europe. Selected institutions and processes are examined in detail. A comparative point of view is emphasized.
Prerequisite: PS 131.

PS 330 Political Development (4)
An examination of the various approaches and theories used in comparative political research, including theories of development and modernization.
Prerequisite: PS 131 and 222.

PS 331 Politics in Canada and the Commonwealth (4)
An analysis and comparison of politics, parties, parliament, politicking, and public policy in Canada and selected countries of the Commonwealth.

PS 332 Politics of the Middle East and North Africa (4)
The cultural and historical factors that influence contemporary politics of the area will be emphasized. Topics include religion, social structures, economic problems, the impact of the West and the Arab-Israeli conflict.
Prerequisite: PS 131.

PS 333 African Politics (4)
Examination of politics of selected African states. Primary focus is on political development. Attention is given to traditional and colonial politics as well as to individuals, groups and institutions that make up the present political process.
Prerequisite: PS 131.

PS 334 Political Systems of Southern Asia (4)
Examination of the elements of political life in India, Bangladesh and Pakistan. The cultural, historical, social and economic factors that influence contemporary political institutions; and the issues and processes by which political conflicts are resolved will be studied.
Prerequisite: PS 131.

PS 335 Politics of Latin America (4)
Analysis of Latin American political systems and the historical, social and economic factors underlying them. The major countries are studied intensively, and a comparative approach is used to examine the variations from democracy to dictatorship and the political instability that characterizes the area.
Prerequisite: PS 131.

PS 337 The Soviet Political System (4)
A descriptive analysis of the Soviet Society as a political system: its origins, institutions and political behavior. Trends and developments in the system will be assessed, and comparisons with other political systems will be undertaken.
Prerequisite: PS 131.

PS 338 Modern Chinese Politics (4)
An analysis of the rise of social movements in China after the breakdown of the traditional order; the emergence of the Nationalist and Communist regimes and the triumph of the Communists; and the political processes of the People's Republic of China, emphasizing the role of elites in policy formation, ideology, mass support and the exercise of central power.
Prerequisite: PS 131.

PS 342 American Legal System I: Principles and Processes (4)
A study of the various institutions of the American legal system with emphasis on the specific policy-making tools of the judicial process.
Prerequisite: PS 100.

PS 343 American Legal System II: Constitutional Law and Civil Liberties (4)
Survey of American constitutional law with emphasis on civil rights as defined and protected by the judiciary. Primary emphasis on U.S. Supreme Court decisions dealing with freedoms of speech, religion and privacy; rights of the accused; racial, ethnic and sex discrimination.
Prerequisite: 241 or 342.

PS 350 Public Administration (4)
Study of government in action, with special attention to policy formulation, organization, personnel administration, supervision, coordination, administrative control and accountability.
Prerequisite: PS 100.

PS 353 Public Policy Analysis (4)
Examines the political, economic and social factors in development, implementation and impact of public policies; the roles of interest groups, political parties, bureaucratic institutions and legislative bodies in the policy process at federal, state, and local governmental levels.
Prerequisite: PS 100.

PS 359 Public Policy and Health Care (4)
An examination of the status and evolution of public policies relating to health and health care, the policy-making processes in health care and the various implications of trends in health care policy. Identical with HBS 359.
Prerequisite: PS 100.

PS 371 American Political Thought (4)
The writings of prominent American thinkers and statesmen whose ideas have influenced the development of the American polity will be considered. Selected texts by European thinkers may also be examined with a view to their influence on America.
Prerequisite: PS 100.

PS 372 Western Political Thought I (4)
The development of Western political philosophies and ideas during the period from 600 B.C. to A.D. 1500. Major philosophers and thinkers (such as Socrates, Plato, Aristotle, Jesus, Augustine and Aquinas) are studied in the context of the significant political, economic and religious factors of their eras.

PS 373 Western Political Thought II (4)
The development of Western political philosophies and ideas during the period from A.D. 1500 to the present. Major philosophers and thinkers (such as Machiavelli, Luther, Calvin, Hobbes, Locke, Rosseau, Hegel and Marx) are studied in the political, economic and religious context of their eras.

PS 377 Communism (4)
The development of revolutionary socialism from early Marxism to the present. The course analyzes the relevance of Marxism to a variety of contemporary revolutionary situations. *Satisfies the university general education requirement in Western civilization.*

PS 390* Independent Study (2 or 4)
Readings not normally covered in existing course offerings. Directed on an individual basis.
Prerequisite: Permission of department and instructor.

PS 413 International Law (4)
An examination of the principles and organization of modern international law. Attention is given to the growing fields of ocean resources, outer space, environmental protection and information law.
Prerequisite: PS 314.

PS 452 Comparative Politics and Administration (4)
The role of public administrative systems in the context of diverse national environments, various levels of political development and different stages of modernization.
Prerequisite: PS 131 and 350.

PS 453 Public Budgeting (4)
The budgeting process in complex institutions, with special reference to various modern budgetary systems. Stresses use of control over flow of funds as an instrument in policy control.
Prerequisite: PS 350.

PS 454 Public Personnel Administration (4)
Study of the procedures, techniques and problems of personnel administration in public agencies; evolution of the modern civil service system, merit principle, and responses to collective bargaining and equal opportunity programs.
Prerequisite: PS 350 and either PS 222 or STA 225.

PS 455 Public Policy Evaluation (4)
Analysis of public policy making, evaluation techniques, uses of relevant information, and ethical implications of such studies.
Prerequisite: PS 222 or a statistics course and PS 353.

PS 456 Public Administration Strategies and Policies (4)
The application of the management tools of economics, political science, statistics, accounting and organizational behavior to the systematic analysis of case studies drawn from experience in the governmental sector or other not-for-profit enterprises.
Prerequisite: Senior standing and permission of department.

PS 458* Public Affairs Internship (4 or 8)
Supervised student internships with governmental, political and other public agencies; reports and analyses relating to agency required. Applicants must seek departmental approval at the beginning of the semester prior to that of the internship.
Prerequisite: PS 457 and permission of the internship director.

From time to time, the department offers advanced seminars in which a topic or problem is studied in depth, and in which significant individual student research is presented for analysis and criticism. The seminar titles refer to the broad fields of political science within which the problem falls; the precise problems to be studied will be announced by the department when the seminars are offered. All seminars require permission of the department before registration. Offered every semester.

PS 402, 403 Seminar in American Politics (4 each)
PS 410 Seminar in International Relations (4)
PS 420 Seminar in Political Behavior (4)
PS 430 Seminar in the Comparative Study of Political Systems (4)
PS 440, 441 Seminar in Public Law (4 each)
PS 450 Seminar in Public Policy (4)
PS 480 Seminar in Seminar in Political Theory (4)
PS 490* Special Topics or Directed Research (2, 4 or 8)

*Students are limited to 8 credits of independent study (PS 390, or 490) in any one semester, and may offer no more than 12 credits toward fulfillment of major requirements.

DEPARTMENT OF PSYCHOLOGY

Chairperson: *David W. Shantz*

Professors: *Edward A. Bantel, David C. Beardslee, Jean S. Braun, Daniel N. Braunstein, Harvey Burdick*

Associate professors: *Max Brill, Ranald D. Hansen, Algea O. Harrison, I. Theodore Landau, Lawrence G. Lilliston, David G. Lowy, Dean G. Purcell, Ralph Schillace, David W. Shantz, Irving Torgoff, Keith E. Stanovich, Robert B. Stewart, Jr., Harold Zepelin*

Assistant professors: *Virginia Blankenship, Frank Schieber*

Assistant adjunct professor: *Ruth Nathan*

The Department of Psychology offers undergraduate programs leading to the Bachelor of Arts degree. The psychology curriculum is structured to meet the needs of four types of students interested in majoring in psychology: the student who plans to find employment after obtaining his or her bachelor's degree; the student who plans to go to graduate school in psychology; the student who plans to enter a field other than psychology that requires further formal training; and the student who has a general interest in psychology. A pamphlet, "Majoring in Psychology at Oakland University," is available in the department office. The student planning to major in psychology should obtain a copy of this pamphlet, which offers suggested programs of study.

Requirements for the liberal arts major in psychology

To earn the Bachelor of Arts with a major in psychology, students must complete 36 credits in psychology, including PSY 100, PSY 250 and four PSY courses at the 350 level or above. Students who plan to attend graduate school should take statistics (PSY 357) and one of the experimental courses (PSY 400, PSY 410, PSY 411 or PSY 412). The department currently offers practicum courses in areas of specialization such as gerontology and community psychology.

Departmental honors

Departmental honors are conferred upon graduates who have taken at least six psychology courses at Oakland University, including PSY 357 and a 400-level experimental course, and achieved a grade point average of 3.50 or above in psychology courses. The student must also do honors-level work in PSY 494.

Requirements for a modified major in psychology with a linguistics concentration

A modified major in psychology with a concentration in linguistics is available. The linguistics concentration requires 24 credits in psychology, including PSY 100, PSY 250 and at least two 300-level courses.

Requirements for the liberal arts minor in psychology

To earn a minor in psychology, students must complete 20 credits in psychology, including one introductory course (PSY 100 or PSY 130), a methods course (PSY 250) and three other psychology courses, two of which must be at the 300 level or above.

Course Offerings

Courses at the 500 level are generally available to qualified upper-level undergraduates. Consult the *Oakland University Graduate Catalog* for further information.

PSY 100 Foundations of Contemporary Psychology (4)
An introduction both to basic principles and recent formulations in psychology. Topics include the central psychological processes of attending, perceiving, learning, thinking, remembering, and study of social behavior and the development and organization of personality. Required of psychology majors. *Satisfies the university general education requirement for social science.*

PSY 130 Psychology and Society (4)
Examination of relationships among people and the effects of these relationships upon them. Analysis of social functions and roles; development and change of attitudes, beliefs and values; and development of personality in relation to the social milieu. *Satisfies the university general education requirement for social science.*

PSY 200 through 209 Topics in Psychology (4 each)
Offered occasionally on special topics of current interest that are not listed among regular offerings.
Prerequisite: See individual listings in schedule of classes.

PSY 220 Abnormal Psychology (4)
The psychodynamics of abnormal behavior, clinical types, methods of investigation, and principles of psychotherapy.
Prerequisite: PSY 100 or 130.

PSY 235 Social Psychology (4)
Overview of traditional and current trends in social psychology. Attention is given to developing theoretical approaches to attitudes, interpersonal processes and social perception.
Prerequisite: PSY 100 or 130.

PSY 250 Introduction to Research Design (4)
General introduction to design, function, and interpretation of research in the social sciences. Aimed at providing necessary preparation to evaluate the empirically based content of psychology. Required of psychology majors.
Prerequisite: PSY 100 or 130.

PSY 271 Child Development (4)
Theory and principles of child development from birth to puberty. Selected topics include: maturational processes, learning and motivation, intelligence, self concept, and child-rearing practices.
Prerequisite: PSY 100 or 130.

PSY 300 through 309 Topics in Psychology (2 or 4 each)
Offered occasionally by faculty wishing to explore topics of current interest not listed among regular offerings, either on their own initiative or at the request of a group of students.
Prerequisite: See individual listings in schedule of classes.

PSY 310 Coping Strategies in the Normal Personality (4)
Characteristics of healthy personality in the following dimensions: need gratification, reality contact, interpersonal relationships and growth.
Prerequisite: PSY 100 or 130.

PSY 311 Tests and Measurement (4)
Theories of measurement and evaluation. Examination of construction and interpretation of tests of ability, achievement, interests and special attitudes. Objective tests of personality.
Prerequisite: PSY 100 or 130.

PSY 312 Psychopathology of Childhood (4)
The psychopathology of children and adolescents, emphasizing dynamic and cognitive-perceptual-motor variables.
Prerequisite: PSY 100 or 130.

PSY 315 Individual Differences (4)
Intellectual, motivational and personality differences associated with age, social roles, sex, ethnic and racial groups, and social class.
Prerequisite: PSY 100 or 130.

PSY 316 Applied Psychology (4)
The areas in which psychology has been used, such as child-rearing, teaching and training methods, personality and aptitude testing, sensitivity training, human engineering, environmental design, and animal behavior.
Prerequisite: PSY 100 or 130.

PSY 322 The Psychology of Crime and Delinquency (4)
The nature of criminal behavior. Various psychological theories about the origins of delinquency and alternative approaches to dealing constructively with criminal behavior.
Prerequisite: PSY 100 or 130, and 220.

PSY 323 Community Psychology (4)
Historical antecedents, contemporary roots, and basic concepts of the community psychology movement. Community approach to problems of emotional disorder, suicide, poverty, community organization, and community education will be examined.
Prerequisite: PSY 100 or 130, and 220.

PSY 324 Dehumanization (4)
Survey of research and literature on the effects of removing an individual's responsibility for the outcome of personal behavior. Topics include bystander apathy, over-obedience, conformity, etc.
Prerequisite: PSY 100 or 130.

PSY 325 Psychology of Women (4)
Psychological variables that repeatedly differentiate women from men; topics include sex differences in personality and learning ability, dependence, passivity, identification, role conflict and achievement motivation.
Prerequisite: PSY 100 or 130.

PSY 326 The Psychology of Social Issues (4)
Psychology's contribution to understanding selected issues of current social concern such as urban areas, jury selection, effects of television on violence, etc.
Prerequisite: PSY 100 or 130.

PSY 331 Psychology of Adulthood and Aging (4)
Psychological change, from young adulthood to death; topics include potentials for psychological growth and sources of crisis, changes in intellectual processes, attitudes toward aging, retirement, and the needs of the aged.
Prerequisite: PSY 100 or 130.

PSY 335 Psycholinguistics (4)
Identical with ALS 335.

PSY 336 Psychology of Adolescence and Youth (4)
The transition to adulthood, as influenced by physiological change, intellectual growth, and social attitudes. Topics include the quest for identity, juvenile delinquency, drug use, the youth culture, relationships between generations, and vocational choice.
Prerequisite: PSY 100 or 130.

PSY 337 Group Behavior (4)
Group structure, function, and process. Focus on how individuals affect the behavior of people in groups; how the group, in turn, affects the behavior of the individual. Topics include leadership, cohesion, group therapy, crowds and mobs.
Prerequisite: PSY 100 or 130, and 235.

PSY 350 Motivation (4)
The nature of physiological and behavioral mechanisms that control an organism's reaction to the demands of its environment.
Prerequisite: PSY 100.

PSY 351 Learning, Memory and Thinking (4)
Approaches to learning, memory and thinking processes. Includes conditioning, problem solving, verbal behavior, storage systems and organization.
Prerequisite: PSY 100.

PSY 352 Sensation and Perception (4)
Approaches to the basic sensory systems and perceptual processes.
Prerequisite: PSY 100 and 250 or equivalent or permission of instructor.

PSY 353 Cognitive Psychology (4)
The information processing approach to problems in pattern recognition, selective attention, mental operations, short- and long-term memory, the psychology of reading, problem-solving and probabilistic reasoning.
Prerequisite: PSY 100 and 250.

PSY 354 Animal Behavior (4)
Comparative psychological, ethological and sociobiological viewpoints on behavior of animals. Emphasis will be on vertebrate species including humans. Discussion of reproductive, aggressive and social behaviors, learning, communication, etc. Stresses an evolutionary perspective.
Prerequisite: PSY 100 or an introductory biology course.

PSY 355 Physiological Psychology (4)
Biological bases of behavior of humans and related mammalian species: basic neuroanatomy and neurophysiology, motivation, emotion, learning and memory, sleep and dreams, sensory-motor mechanisms, brain stimulation, psychopharmacology, hormones, and behavior.
Prerequisite: PSY 100 or an introductory biology course.

PSY 356 Sleep and Dreams (4)
A review of facts and theories regarding sleep and dreams with demonstrations of research techniques. Topics include psychological and biological viewpoints on sleep, dreams, dream interpretation and sleep disorders.
Prerequisite: PSY 100.

PSY 357 Statistics and Research Design (4)
The principal statistical procedures employed in social science research. Emphasis is on design of experimental studies, problems of sampling and control of variables, and psychological measurement. Two years of high school mathematics are recommended.
Prerequisite: PSY 100 and 250.

PSY 358 History and Systems of Psychology (4)
How psychology came to be as it is. The beginning to the great experiments and the schools of psychology; the schools to World War II; World War II to the present. Men, experiments, theories.
Prerequisite: PSY 100 and two psychology courses other than PSY 357.

PSY 360 Attitudes and Opinions (4)
Nature and function of attitudes, relations between attitudes and personality, and attitudes and behavior. Attitude measurement, formation, and change processes.
Prerequisite: PSY 357.

PSY 371 Work with the Elderly I (4)
Introduction to community and institutional work with the elderly. Field placement is combined with readings and lectures on psychosocial services for the elderly.
Prerequisite: PSY 331 (may be taken concurrently with instructor's consent).

PSY 372 Work with the Elderly II (4)
Field work is combined with independent readings in gerontology.
Prerequisite: PSY 371 and 250 or its equivalent, and instructor's consent.

PSY 376 Socialization in the Family (4)
Some areas of research and theory on socialization processes. Areas of focus: attachment and separation, conscience development, sex-role identity, ego-identity, etc. Role of principal agents, e.g., family, peers, school.
Prerequisite: PSY 271, 331, or 336.

PSY 380 Theories of Personality (4)
Major theories of human personality development and principles of personality theory building.
Prerequisite: PSY 100 and two other psychology courses.

PSY 391 through 398 Advanced Topics in Psychology (2 or 4 each)
Offered occasionally by faculty wishing to explore special topics of current interest not listed among regular offerings, either on their own initiative or at the request of a group of students. Especially for majors, but qualified nonmajors will be admitted.
Prerequisite: See individual listings in schedule of classes.

PSY 399 Field Experience in Psychology (4)
The application of psychological concepts and methods in a work setting. Includes job placement with a classroom component, readings, and discussion of relevant literature. Does not count towards the major. May not be repeated for credit.
Prerequisite: PSY 250 and 16 additional credits in psychology, of which at least 8 must be at the 300-400 level.

PSY 400 Experimental Psychopathology (4)
Basic philosophy of science; issues in design and methodology of psychological research with application to abnormal behavior. Experience in data collection.
Prerequisite: PSY 220 and 357.

PSY 410 Experimental Social Psychology (4)
Theory and techniques of survey research, field experiments, laboratory experiments, and field studies. Experience in data collection; independent project required.
Prerequisite: PSY 235 and 357.

PSY 411 Experiments in the Basic Processes (4)
Issues in learning, perception, thinking, physiological psychology, and animal behavior with independent research project.
Prerequisite: PSY 357, and 351, 352, or 353.

PSY 412 Experimental Developmental Psychology (4)
Issues in design and methodology of psychological research with application to the developmental area. Independent project required.
Prerequisite: PSY 357 and 271 or 331 or 336.

PSY 430 Advanced Social Psychology (4)
Critical study of selected areas in social psychology such as attribution theory.
Prerequisite: Permission of instructor.

PSY 441 Advanced General Psychology (4)
Current frontiers of knowledge and new methodology in the range of psychology. For senior majors who plan to attend graduate school.
Prerequisite: Permission of instructor.

PSY 470 Apprentice College Teaching (4)
Supervised participation in teaching undergraduate psychology courses. Discussion of teaching objectives and methods. May be repeated for a total of 8 credits. Only 4 credits may be offered to fulfill major requirements.
Prerequisite: Permission of instructor.

PSY 480 through 485 Readings and Research Projects (2 or 4 each)
Individual readings or laboratory research on a topic agreed upon by a student and a member of the psychology faculty. Not more than 8 credits of readings and research project may be counted towards fulfillment of the major in psychology.
Prerequisite: Permission of instructor.

PSY 494 Honors Independent Studies (4)
Independent honors research projects in clinical, developmental, experimental and social psychology, respectively.
Prerequisite: Permission of instructor.

PSY 496 Senior Honors Seminar (4)
Basic concepts and issues in the field of psychology, with representative topics such as mind-body, heredity-environment, learning-instinct, theories, models and paradigms, the nature of verification and measurement, and the politics of psychology.
Prerequisite: PSY 357 and two 300-level psychology courses and a grade point average of 3.50 in psychology.

DEPARTMENT OF RHETORIC, COMMUNICATIONS AND JOURNALISM

Chairperson: *Donald E. Morse*

Professors: *Peter G. Evarts, Donald C. Hildum, Donald E. Morse*

Associate professors: *Jane Briggs-Bunting (director, journalism program), Wilma Garcia (director, Rhetoric Writing/Reading Center), Alice Horning, Margaret B. Pigott, Roberta Schwartz, Ronald A. Sudol (director, freshman rhetoric)*

Assistant professors: *Wallis May Andersen, Van E. Hillard, Sharon Howell, David L. Lau*

Special instructors: *Rose Cooper (director, reading programs), Bernadette Dickerson, Barbara Hamilton, Margaret Kurzman*

Adjunct assistant professors: *William C. Connellan, James Llewellyn*

Lecturers in rhetoric: *Anne Becker (supervisor of internships), Mary Berger, Richard Burt, Barbara Dobson, Carl Dull, Catherine Haar, Martha Hammel, Noel Houck, Mark Koch, Barbara Laboissonniere, Idele Levin, Donald Lytle, Frank Miller, Sally Pierce, Anna Mae Powell, Jeannie Robertson, Karen Robinson, Carole Royer, David Schartman, Aaron Stander, Carole Terry, Nancy Watterson, Edward Wolff, Helen Woodman, Helen Zucker, Jack Zucker*

Lecturers in communications arts: *Daniel Bernard, Nanne Derby, Tim Grainey, Barbara Hunt, John Rhadigan, Kathy Rhadigan*

Lecturers in journalism: *Corine Abatt, Harry Atkins, Lawrence Devine, Jane Eckels, Berl Falbaum, Brian Flanigan, David Frank, Leola Gee, John Guinn, Karen Hermes-Smith, Thomas Houston, Tom Hoyt, Kevin Kerrigan, Dane Maralason, Bill McGraw, William Mitchell, Brownson Murray, Joseph Paonessa, Katherine Parrish, Gary Schafer, Neal Shine, Susan Stark, Carl Stoddard, Steve VandenBrook, William White*

The Department of Rhetoric, Communications and Journalism offers programs of study leading to the degree of Bachelor of Arts with the opportunity to concentrate in several areas. Courses are available in communication theory, public and interpersonal communication, journalism, advertising, oral interpretation and mass media.

The department serves the non-speech major and the general university student. Communication training can enhance almost any career or life. There are many specialized careers that welcome students with communication knowledge, e.g., journalism, media, law, public relations, advertising and teaching.

The rhetoric program is designed to help students acquire the writing, reading and thinking skills necessary to perform college-level academic work. While the emphasis in composition courses is on coherent and effective writing, other modes of written communication, as well as library search techniques, research and annotation, are included in the writing curricula. In addition, the program offers courses in reading, study skills and tutorial instruction.

Students are placed in rhetoric writing courses according to the results of pre-enrollment diagnostic testing. Unless exempted, students must enroll in the course sequence assigned, which in most cases will include a two-course sequence in the form and content of composition (RHT 100 and RHT 101). These courses are designed so that a student who completes the assigned

sequence with a grade of 2.0 or higher in RHT 101 should also be granted the university's certification of writing proficiency required for graduation.

Assistance is available for students who need extra help in writing and reading. A non-credit writing center in Wilson Hall is staffed by qualified student tutors during the hours posted. Credit-bearing developmental courses (those below the 100 level) are also offered. Students enrolled in these courses should be in close contact with their advisers to ensure that they do not exceed the specific limitation of 16 credits earned below the 100 level counting toward completion of the baccalaureate degree.

Requirements for the liberal arts major in communication arts

The major in communication arts consists of a minimum of 36 credits in courses labeled SCN, JRN or the THA courses listed below. SCN 201 and SCN 303 are required. Students should choose, in consultation with an adviser, either a media specialization (SCN 491 required) or a theoretical specialization (SCN 202 required). At least 20 credits of the total must be at the 300 or 400 level, including at least 4 credits at the 400 level. No more than a total of 12 credits from SCN 281, SCN 490, SCN 491, SCN 497, JRN 240, JRN 404, JRN 490 and THA 363 may be counted toward the major.

The following theatre arts courses may be counted toward the liberal arts major in communications, the modified major with a concentration in linguistics, the liberal arts minor and the secondary teaching minor in speech: THA 213, THA 230, THA 267, THA 350, THa 363, THA 368, THA 420, THA 430, THA 450, THA 460, THA 462 and THA 467. Course descriptions can be found in the Department of Music, Theatre and Dance section of this catalog.

Requirements for the modified major in communication arts with a linguistics concentration

To earn a communication arts major with a concentration in linguistics, students must complete 24 credits in SCN, JRN courses or THA courses (from the list above) and 20 credits in linguistics. SCB 303 and SCN 201 or SCN 202 are required. For linguistics requirements, see page 90 of this catalog.

Departmental honors

All communication arts and journalism majors with a university grade point average of 3.00 or above are considered candidates for departmental honors. Honors are awarded to those candidates with the highest averages in major courses. Exact criterion averages vary from year to year, in the vicinity of 3.50.

Requirements for the liberal arts minor in communication arts

To earn a minor in communication arts, students must complete 20 credits in SCN, JRN or THA courses (from the list above), including SCN 201 or SCN 202 and at least 12 credits at the 300 or 400 level. No more than 4 credits in independent study, internship or apprentice college teaching may be counted toward the minor.

Requirements for the secondary teaching minor in speech

To earn a secondary teaching minor in speech, students must complete 20 credits in SCN, JRN or THA courses (from the list above), including SCN 201. Any student with voice or articulation problems that would handicap his or her performance as a speech teacher must include THA 230 in his or her program.

Requirements for admission to the journalism major

To be admitted to major standing in journalism, students must complete:

1. RHT 100 and RHT 101 (or otherwise satisfy the writing proficiency requirement) and JRN 200 with an average grade of 3.0 or above

2. 20 credits of corequisite courses with an average grade of 3.0 or above
3. An introductory two-semester sequence in a modern language at the university level; one semester of a modern language at the second-year level or above; or two courses numbered 120 or above in mathematical or computer science

Requirements for the liberal arts major in journalism

To earn the Bachelor of Arts degree with a major in journalism, students must complete:

1. 20 credits in journalism, including JRN 200, JRN 300, JRN 403 and JRN 404 and any two of the following: JRN 310, JRN 311, JRN 312, JRN 320, JRN 321, JRN 332, JRN 333 or JRN 340
2. Major in journalism with an emphasis in speech: 8 credits from the following: SCN 201, SCN 207, SCN 285, SCN 301, SCN 303, SCN 311, SCN 371, SCN 373, SCN 403; major in journalism with an emphasis in advertising: JRN 340, JRN 341, JRN 342 plus an advertising internship (JRN 404)
3. Corequisites (36 credits) as follows (these courses, where appropriate, may also satisfy general education requirements):
   a. 8 credits from HST 101, HST 102, HST 114, HST 115, HST 223, HST 321 or HST 354
   b. 12 credits from ENG 100, ENG 105, ENG 111, ENG 224, ENG 241, ENG 303, ENG 306, ENG 312, ENG 315, ENG 322, ENG 332, ENG 356, ENT 357 or ENG 369
   c. 8 credits from PS 100 and PS 110, PS 241, PS 272, PS 273, PS 305 or PS 377
   d. 4 credits from ECN 150 or ECN 200
   e. 4 credits from SOC 100, AN 101 or AN 102
   f. AMS 202 may be substituted for any one of the above courses in history; AMS 203 for any of the above courses in English; or AMS 204 for any of the above courses in political science

Requirements for the liberal arts minors in journalism and advertising

A minor in journalism requires 24 credits in JRN courses, including JRN 200, JRN 300 and JRN 404. A minor in advertising requires 24 credits in JRN courses, including JRN 200, JRN 340, JRN 341, JRN 342 and JRN 404. The internship (JRN 404) must be taken in advertising for that minor. Communication arts majors may not count credits toward the major and either of these minors simultaneously.

Course Offerings

RHETORIC

RHT 060-061 Supervised Study (1)
Two seven-week courses of tutorial instruction focusing on academic skills. A regular and concentrated series of lessons in any of a variety of subjects including mathematics, the sciences, the social sciences, theatre, art history, and composition. Graded S/U.

RHT 063 Tutorial in English for Foreign Students (1)
A course for non-native speakers of English designed to provide tutorial assistance in grammar and composition. May be repeated for credit. Graded S/U.

RHT 065 Communication Skills (4)
A course introducing new students to the reading, writing, speaking, and study skills needed for success in the university. Graded S/U.
Prerequisite: Placement through Special Programs.

RHT 075 Developmental Writing I (4)
A small-group course in basic composition skills, including techniques for idea generation, organization of written work, and mastery of writing mechanics, as well as developing fluency and a positive self-image for the writer. Placement by diagnostic testing, referral, or student's decision.

RHT 076 Reading Skills (4)
For students who have problems in reading comprehension. Small group instruction. Initial diagnosis of reading difficulty and an individual program of study. Graded S/U.

RHT 080 Developmental Writing II (4)
A continuation of RHT 075 to serve students who need more small-group instruction before proceeding to RHT 100 and/or RHT 101.

RHT 090 Grammar and Composition for Foreign Students (4)
A course for foreign students covering the basic syntax of English and the composition of short expository papers. Graded S/U.

RHT 091 Reading English for Foreign Students (4)
A course designed to aid foreign students in the effective reading of the English language. Short composition exercises are included. Graded S/U.

RHT 100 Composition I (4)
Explores the formal and functional elements of expository prose, with emphasis on the process of writing. Students investigate effective syntactic and rhetorical pattern, incorporating these patterns into the composition of several short essays.
Prerequisite: Placement by testing or a grade of 2.0 or higher in RHT 075 or RHT 080.

RHT 101 Composition II (4)
A course emphasizing the process of writing to develop extended rhetorical structures, with focus on organizational patterns and the development of logic, coherence, and unity in several student compositions. Also includes fundamentals of investigation, research, and annotation.
Prerequisite: Placement by testing or a grade of 2.0 or higher in RHT 100.

RHT 103 Effective Study Skills (2 or 4)
Designed to improve skills in the following areas: notetaking, memory and concentration, vocabulary building, preparing for and taking exams, and analytical reading.

RHT 105 Efficient Reading (2 or 4)
A seven- or fourteen-week course for students who understand basic material, and have a primary need for more efficient reading habits. Topics include skimming/scanning techniques, adjustment of rate, patterns of organization, drawing inferences and conclusions before and during reading, and proper use of textbooks. Graded S/U.

RHT 110 Introduction to Critical Reading (4)
For students who understand literal reading content, but who have difficulty with critical comprehension. Develops sophisticated reading skills for practical prose. Recommended for upper-level students contemplating graduate school.
Prerequisite: Completion of the Oakland University writing proficiency requirement.

RHT 200 Peer Tutoring in Composition (4)
Peer tutoring theories and pedagogies, and practical experience in teaching. Work divided between classroom and tutoring assignments. Particularly valuable for majors in the humanities, education, psychology, human services, and related fields.
Prerequisite: Completion of the writing proficiency requirement.
Recommended: A grade of 3.5 or better in RHT 101 or its equivalent.

RHT 335 Communication Skills for Human Services Professionals (4)
Oral and written communication skills for human services and training development professionals. Emphasis on oral presentation, development of promotion and training techniques and experience in workshops and group discussions.
Prerequisite: RHT 101 or satisfaction of university writing proficiency requirement; completion of 60 credit hours.

SPEECH COMMUNICATION

SCN 114 Introduction to American Sign Language (4)
Conversational AMESLAN; nonverbal communication; body and facial expression integrated with a basic sign vocabulary; a survey of the various sign systems; an examination of the psychological, cultural and linguistic aspects of the deaf community.

SCN 115 American Sign Language (4)
A continuation of SCN 114.
Prerequisite: SCN 114.

SCN 172 Media Hardware (4)
A working knowledge of the instruments used in mass media: operation, maintenance and malfunctions. Recommended for education majors.

SCN 201 Public Speaking (4)
Theory and practice in public address: adaptations required by particular goals, audience and occasions; and classroom interactions.

SCN 202 Group Dynamics and Communication (4)
Group dynamics, discussion and problem solving; influences of group structure, norms, roles, leadership and climate on the processes of group communication and collaborative decision making.

SCN 207 Semantics (4)
Identical with LIN 207. *Satisfies the university general education requirement in language.*

SCN 220 Public Speaking on Public Issues (4)
The development, presentation and defense of speeches addressing public issues, including advanced concepts of audience analysis and persuasion, and the use of rhetorical strategies and aids.
Prerequisite: SCN 201.

SCN 280 Broadcast Announcing (4)
Techniques of speaking before a microphone, editing, reading copy and news broadcasting. Experience includes recording and critique of various styles of delivery.
Prerequisite: THA 230.

SCN 281 Broadcast Laboratory (2)
Announcing or other broadcast performance on campus radio station. May be repeated for a total of 4 credits. Graded S/U.
Prerequisite: SCN 280 (may be taken concurrently).

SCN 285 Introduction to Broadcasting (4)
A survey of public and commercial radio and television, including their public service, educational and religious functions; and the history, economics, influence and social control of broadcasting.

SCN 301 Persuasion (4)
Analysis of persuasion in current society, psychological bases of persuasion, ethical considerations, and distinctions between debate and persuasive argument.
Prerequisite: SCN 201.

SCN 303 Communication Theory (4)
Communication theory in its broadest sense, related to individual learning, knowledge, and group interaction.
Prerequisite: Completion of 32 hours.

SCN 304 Communication of Organizations (4)
Communication theory and practice within organizational systems.

SCN 305 Interpersonal Communication (4)
Elements, purposes and patterns of communication and their effects; experience in interviewing, decision making and tutoring.
Prerequisite: SCN 202.

SCN 308 Forensics Laboratory (2)
Practice for forensic festival or competitive events such as public address and oral interpretation. May be repeated for up to 6 credits.
Prerequisite: SCN 201.

SCN 310 Philosophy of Rhetoric (4)
Identical with PHL 310.

SCN 311 Rhetoric and Public Address (4)
Introduction to the history and theory of rhetorical criticism and public address, contrasting Aristotle's rhetoric with contemporary theorists.
Prerequisite: SCN 201.

SCN 318 Argumentation and Debate (4)
Theories of argumentation from the classical to the contemporary period combined with debating experience. Propositions of fact, value and policy are distinguished and related to the construction and selection of argument. Debate experience will focus on the national intercollegiate proposition.
Prerequisite: SCN 201.

SCN 371 Forms and Effects of Mass Communication (4)
Identical with SOC 371.

SCN 373 Social Control of Mass Media (4)
Identical with SOC 373.

SCN 374 Cross Cultural Communications
Identical with ALS 374 and AN 374.

SCN 376 Introduction to Television Production (4)
The essential elements of television as a medium, its capabilities and limitations. Practical experience in studio and/or field work.

SCN 380 Special Topics in Communication (2 or 4)
Various topics in communication theory and practice chosen by department faculty. May be repeated under different subtitles.
Prerequisite: SCN 201.

SCN 401 Phonetic Theory (4)
Identical with LIN 401.

SCN 402 Small Groups (4)
Identical with SOC 402.

SCN 403 Communication Networks (4)
The patterns of contact and information transfer in human groups, ranging from the sociometric patterns of small groups, to the formal and informal networks of organization and the large-scale exchanges of mass societies.
Prerequisite: SCN 303.

SCN 471 Workshop in Contemporary Communication (4)
A bridge between academic learning and professional applications in speech communication forms and media. Included in the practicum-seminar format of the workshop are field work, observation and lecture-demonstrations with professionals in various job settings.
Prerequisite: Permission of instructor.

SCN 480 Special Topics Seminar (4)
Group study of topics of special interest chosen by department faculty and students. May be repeated for credit with the instructor's permission.
Prerequisite: Three SCN courses.

SCN 490 Independent Study (2 or 4)
Special research projects in speech communication. May be repeated for a maximum of 8 credits.
Prerequisite: Junior or senior standing, 12 previous credits in the major, and completion of course application form.

SCN 491 Internship (4)
Experience working with professionals in various performing arts and mass communication settings. May be repeated once in a different setting for up to 8 credits.
Prerequisite: Permission of supervising faculty.

SCN 497 Apprentice College Teaching (2 or 4)
Assisting in teaching an undergraduate course in speech communication, and discussions with the supervising faculty member on the principles, methods and problems of such teaching.
Prerequisite: Junior standing and permission of instructor.

JOURNALISM

JRN 200 Newswriting (4)
Training in the practical aspects of news gathering, interviewing and basic newswriting techniques; a discussion of the various journalism media. Some typing skills required.
Prerequisite: Completion of RHT 101 or writing proficiency requirement.

JRN 249 Journalism Laboratory (2)
Work in on-campus publications under the direction of an instructor; may be repeated once.
Prerequisite: JRN 200.

JRN 300 Newspaper Editing (4)
Principles and practices of the newspaper copydesk: copy reading, headline writing, makeup, and typography; preparing copy for the printer; some attention to new and developing devices in the print shop, such as those involving the computer.
Prerequisite: JRN 200.

JRN 310 Advanced Newswriting (2)
Gathering information through wide reading and interviewing, writing objective in-depth news reports; and background on current social, political and economic issues.
Prerequisite: JRN 200.

JRN 311 Public Affairs Reporting (4)
Practical training in the news coverage of local governments including police protection, fire control and the courts. Discussion of federal and state coverage of stories of public interest.
Prerequisite: JRN 200 and PS 100.

JRN 312 Feature Writing (2)
Practice in writing newspaper and magazine nonfiction features, such as human interest stories and profiles. The course will enable students to develop further their reportorial skills for careers in print journalism. A study of the purposes, styles, types and techniques of the feature story.
Prerequisite: JRN 200.

JRN 313 Magazine Writing and Freelancing (2 or 4)
Writing magazine-length nonfiction articles, with some discussion of the differences between newspaper feature stories and magazine pieces, how to write and sell freelance pieces, legal liabilities and rights of the freelance writer including a discussion of the U.S. copyright laws.
Prerequisite: JRN 312.

JRN 320 Editorial Writing (2)
Preparing and writing newspaper opinion and commentary usually found on the editorial page; forms and techniques of editorials and the editorial page.
Prerequisite: JRN 200.

JRN 321 Reviewing: Books, Theatre, Movies (2)
Writing newspaper reviews of the literary, visual and performing arts from recent publications, live productions, films and television. Students will be required to purchase tickets and attend various performances.
Prerequisite: JRN 200, JRN 312 and one of the following: ENG 100, 111, 224.

JRN 330 News Photography (2)
Fundamentals of black-and-white photographic production; practice in taking still pictures of people and events for use in newspapers and news magazines; darkroom laboratory work in developing photos.
Prerequisite: JRN 200.

JRN 331 Media Management (2)
Business, corporation and legal problems in the front-office operation of weekly and daily newspapers; industrial and employee magazines; radio and television stations.
Prerequisite: JRN 200.

JRN 332 Radio-Television News (2 or 4)
Fundamentals and techniques of preparing news for broadcasting, especially the different demands of electronic journalism from those of the print media.
Prerequisite: JRN 200.

JRN 333 Public Relations and the Media (2)
A study of the function of agency, industrial, business and institutional relations with the public through newspaper, radio, television and other media, especially concerning press information; preparation of copy; some attention to employee publications.
Prerequisite: JRN 200.

JRN 340 Introduction to Advertising (4)
Advertising in print and electronics media from the standpoint of marketing, its social and legal environment, and strategy decisions in the profession.
Prerequisite: JRN 200.

JRN 341 The Advertising Medium (4)
Further study of the advertising industry including trends, design, marketing strategy and the technical problems of planning a product campaign.
Prerequisite: JRN 340.

JRN 342 Case Studies in Advertising (4)
The study of actual case histories of various companies and projects as well as the analysis of problems within a market. An assigned case study is required.
Prerequisite: JRN 340 and JRN 341.

JRN 401 Advanced Photojournalism (4)
Photography in the news media including work in use of 35mm SLR cameras, darkroom techniques, and a brief discussion of marketing for publication.
Prerequisite: JRN 330.

JRN 402 Ethical Issues in the Media (4)
A study of professional ethics with an emphasis on print journalism though helpful and applicable to electronic journalism as well. Discussion format where students analyze a series of factual problems that arise in daily media operations.
Prerequisite: JRN 200 or junior standing.

JRN 403 Law of the Press (4)
State and federal laws dealing with libel, contempt of court, right of privacy, copyright and other legal matters affecting newspapers, radio and television and other media.
Prerequisite: JRN 300, or pre-law student.

JRN 404 Journalism Internship (4)
A full- or part-time internship on a weekly or daily newspaper, radio or television station, or with a public relations or advertising office for one semester. Open only to students in the journalism program, usually in the senior year. May be repeated once in a different medium.
Prerequisite: JRN 200 and three other JRN courses.

JRN 480 Special Topics in Journalism (2 or 4)
Various specialties offered to students. Subjects change from semester to semester, with some opportunity for independent study. May be repeated under different subtitles.
Prerequisite: JRN 200.

JRN 490 Independent Study (2 or 4)
Individual research projects in journalism.
Prerequisite: Junior or senior standing, 12 previous credits in the major, and completion of the course application form.

DEPARTMENT OF SOCIOLOGY AND ANTHROPOLOGY

Chairperson: *Peter J. Bertocci*

Professors: *Peter J. Bertocci, Judith K. Brown, Jacqueline R. Scherer, Philip Singer*

Associate professors: *William Bezdek, James W. Dow, Harry Gold, A. Gary Shepherd, Richard B. Stamps, Donald I. Warren*

Associated faculty: *Assistant Professor Lucinda Hart-Gonzalez (linguistics, sociology and anthropology)*

Adjunct professor: *Eleanor P. Wolf*

The Department of Sociology and Anthropology participates in several major programs that are designed to provide a maximum of flexibility to serve the student's interest while also offering the substantive background required to prepare the student for a career in his or her chosen field. These programs lead to the Bachelor of Arts degree.

The department actively participates in the following concentrations: archaeology, social justice and corrections, social service and urban studies. In addition, it participates in the Institute for Social Analysis and Marketing. For information concerning this institute, contact Professor William Bezdek, acting director of the institute.

Requirements for the liberal arts major in sociology and anthropology

To earn the Bachelor of Arts with a major in sociology*, students must complete SOC 100, SOC 202 and 32 additional credits in sociology. Of these, 8 may be taken in anthropology.

To earn a B.A. with a major in anthropology*, students must complete AN 101, AN 102 and 32 additional credits in anthropology. Of these, 8 may be taken in sociology. LIN 301 may be substituted for one departmental course.

To earn a B.A. with a major in sociology and anthropology*, students must complete SOC 100, AN 101, 16 additional credits in sociology and 12 additional credits in anthropology.

*Not more than 8 credits may be taken in SOC/AN 190, 392 or 480.

Requirements for modified majors in sociology and/or anthropology with a linguistics concentration

To earn a modified major in sociology with a concentration in linguistics, students must complete 24 credits in sociology, including SOC 100 and SOC 300, and 20 credits in linguistics. ILN 204 may be substituted for one course in sociology.

To earn a modified major in anthropology with a concentration in linguistics, students must complete AN 101 and AN 102, 12 additional credits in anthropology and 20 credits in linguistics.

Requirements for a liberal arts minor in sociology or anthropology

To earn a minor in sociology, students must complete SOC 100 plus 16 additional credits in sociology courses from the 300-400 level. To earn a minor in anthropology, students must complete AN 101 and AN 102 plus 12 additional credits in anthropology courses at the 300-400 level.

Departmental honors

To earn departmental honors in sociology, students must complete, in addition to the standard major requirements, SOC 400; have taken a minimum of 20 credits of their sociology major course work at Oakland University; have received a grade point average (GPA) of 3.50 in major course work; and receive recommendations from two departmental faculty members.

To earn departmental honors in anthropology, students must have taken a minimum of 20 credits of their anthropology major course work at Oakland University; have received a GPA of 3.50 in major course work; and receive recommendations from two departmental faculty members.

Course Offerings

ANTHROPOLOGY

AN 101 Human and Cultural Evolution (4)
Introduction to physical anthropology and archaeology as applied to human and cultural evolution. Stress placed on human adaptation to environment. *Satisfies the university general education requirement in social science.*

AN 102 Culture and Human Nature (4)
Introduction to cultural and social anthropology with emphasis on the continuing human adaptation to the environment and especially the interactions among culture, society and natural environment. *Satisfies the university general education requirement in social science.*

AN 190 Current Issues in Anthropology (4)
Designed for the general student, this course examines issues of current interest in anthropology. Topic will be announced at the time of offering.

AN 222 Introduction to Anthropological Archaeology (4)
Introduces the field of anthropological archaeology through examination of theory, data collection methods and techniques, and interpretive strategies used to understand human histories, life-ways and cultural processes.

AN 251 Peasant Society and Culture (4)
The peasant as a social type; the peasant's role in the making of great civilizations; and forces for change in peasant societies, especially in the non-Western world.
Prerequisite: AN 102.

AN 271 Magic, Witchcraft and Religion (4)
Anthroplogical theories of magic, witchcraft and religion: human interaction with beings, creatures, and forces that manifest extraordinary powers; folk beliefs of nonliterate people; and transformation of social systems by religious movements. Identical with REL 271.
Prerequisite: AN 102 or sophomore standing.

AN 282 The Prehistoric Origins of Civilization (4)
The development and spread of culture in the period before written history, using archaeological evidence from Neolithic Old World and New World sites. Cultural evolution from early farming and settlement to the rise of complex civilization.
Prerequisite: AN 101.

AN 302 Field Research Techniques (4)
Training in: research information storage and retrieval; field research instrumentation (photography, cinematography, video and audio recording, field computers); use of archives and data banks; plus participant observation; ethnomethodology and semantic analysis. Identical with SOC 302.
Prerequisite: AN 102 or SOC 100.

AN 305 Child Rearing and Human Development in Cross-Cultural Perspective (4)
Child-rearing practices and their educational role, the rearing of nonhuman primate young, and socialization practices of certain Western subcultures and non-Western societies.
Prerequisite: AN 102.

AN 307 Culture and Society Through Film (4)
The systematic study of selected peoples from different cultures through the ethnographic film and appropriate readings, lectures and discussions. Students learn to evaluate cultural data according to various anthropological concepts and methodologies. *Satisfies the university general education requirement in social science.*
Prerequisite: Junior standing or permission of instructor.

AN 310 Psychological Anthropology (4)
Theories of psychological anthropology on culture and personality and psychological phenomena viewed in relationship to culture and from a cross-cultural perspective.
Prerequisite: AN 102.

AN 315 Studying Our Culture: Technique and Analysis (4)
The different ways that people in different cultures and subcultures have of seeing their experiences. The anthropologist's methods of studying and analyzing these differences. Includes field work practice.
Prerequisite: AN 102 or SOC 100 or PSY 100.

AN 322 Subsistence and Technology in Nonindustrial Society (4)
Technologies of different cultures; implications for the individual, society and cultural survival; ecology of tribal, peasant and industrial cultures with emphasis on subsistence technology of non-Western cultures. Identical with ENV 322.
Prerequisite: AN 102.

AN 333 Medical Anthropology (4)
Interaction between biological, ethnopsychiatric and sociocultural environments in health, illness, and treatment. Includes historical, organizational, demographic, ecological and other problems in health care delivery.
Prerequisite: AN 102 or SOC 100 or PSY 100 or HBS 200.

AN 337 Women's Lives in Cross-Cultural Perspective (4)
Anthropological literature will be used to examine cultural variation in rituals and customs affecting women's lives. Female life-cycle events and the division of labor by sex will be studied in relation to the position of women in different societies.
Prerequisite: AN 102.

AN 352 Peoples and Cultures of Africa (4)
A general survey of the geography, history, economy, society, religions and political systems of selected indigenous peoples of Africa. Part of the course will cover the events of the period of European contact.
Prerequisite: AN 102 or IS 230.

AN 361 Peoples and Cultures of India (4)
A survey of contemporary society and culture on the Indian subcontinent, with focus on India, Pakistan and Bangladesh; emphasis on social structure, folk religion and the problems of socio-cultural change.
Prerequisite: AN 102 or IS 240.

AN 362 Peoples and Cultures of China (4)
An anthropological study of China, stressing the variety of cultural and ecological adaptations characteristic of that complex society.
Prerequisite: AN 102 or IS 210.

AN 370 Archaeology of Mesoamerica (4)
The pre-Hispanic culture of Mexico and Guatemala, the Aztecs and Mayas, and their neighboring and derivative cultures. Detailed discussion of the major archaeological sites.
Prerequisite: AN 101 and 102.

AN 371 Peoples and Cultures of Mexico and Central America (4)
Anthropological studies of Indian and Mestizo societies in Mexico and Guatemala, including their separate socio-economic patterns and their integration into a dualistic social system.
Prerequisite: AN 102 or IS 250.

AN 372 Indians of South America (4)
A survey of the native South Americans. Includes warriors of the jungles, peasants and herders of the mountains, nomads of the plains and forests, and subsistence fishermen of the southern coasts.
Prerequisite: AN 102 or IS 250.

AN 373 Ethnography of Communication (4)
Identical with ALS 373.

AN 374 Cross-Cultural Communication (4)
Identical with ALS 374/SCN 374.

AN 375 Language and Culture (4)
Identical with ALS 375.

AN 380 Archaeology of North America (4)
The evolution of native North American cultures (including Mesoamerica) from 50,000 B.C. to 1500 A.D., with emphasis on the ecological factors in the development of culture areas.
Prerequisite: AN 101.

AN 381 Peoples of North America: Indians and Eskimos (4)
The culture of certain North American societies and their adaptation to Western contact.
Prerequisite: AN 102.

AN 382 Advanced Physical Anthropology (4)
The emergence and diversification of the human species in relation to the morphology and ecology of both modern and fossil man, including physical and physiological variation (sex, race and age), climatic adaptation and population genetics.
Prerequisite: AN 101.

AN 383 Methods in Anthropological Archaeology (4)
Instruction and field research, including site location, excavation and artifact analysis, and conservation. May be repeated once for credit.
Prerequisite: AN 101.

AN 391 Primate Behavior (4)
Various bio-social factors which aid the nonhuman primates in their adaptation to the environment, implications for human behavior, classroom discussions and field studies.
Prerequisite: AN 101 or 102 or PSY 100 or SOC 100 or HRD 301.

AN 392 Current Problems in Anthropology (2 or 4)
Seminar in which a topic or problem is studied in depth. Each seminar requires independent readings and writing.
Prerequisite: Permission of instructor.

AN 399 Field Experience in Anthropology (4)
Field experience in anthropology with faculty supervision. An academic project related to the departmental discipline which incorporates student performance in an occupational setting. May not be repeated for credit.
Prerequisite: 16 credits in anthropology, of which at least 8 must be at the 300/400 level.

AN 400 Theories of Society and Culture (4)
Acquaints students with the major theoretical foundations of modern anthropology. Identical with SOC 400.
Prerequisite: AN 102 or SOC 100.

AN 401 Social Anthropology (4)
Examines social structure and social organization in anthropological perspective. Entails the study of economic, political, religious and kinship systems in the social life of man.
Prerequisite: AN 102.

AN 410 Human Adaptation (4)
This course examines current theory on the cultural and biological adaptation of human groups to natural and social environments. Identical with ENV 410.
Prerequisite: AN 322, ENV 322, ENV 333.

AN 420 Clinical Anthropology (4)
This course explores cross-cultural explanations of illness and "deviant" behavior from both patients' and healers' perspectives, using case studies, films and the guest presentations of practitioners. It stresses the anthropological contribution to therapeutic strategies in the treatment of physical and mental illness.
Prerequisite: Three sociology or anthropology courses.

AN 430 Systems of Wealth and Power in Anthropological Perspective (4)
Concepts and methods of political and economic anthropology, emphasizing the interrelated state of political and economic phenomena, with particular reference to preindustrial, nonWestern societies.
Prerequisite: AN 102.

AN 440 Anthropology of Law (4)
The mechanisms of social control and legal institutions in non-Western, preliterate societies. Topics include the varying types of moral order and the problem of legal enforcement in stateless societies.
Prerequisite: AN 102.

AN 470 Social and Cultural Change (4)
This course deals with the problems of and theoretical issues in the study of social and cultural change. Such topics as modernization, industrialization, the impact of technology and problems of development in traditional societies may be covered, but subject matter will vary with instructor. Identical with SOC 460.
Prerequisite: AN 102.

AN 480 Independent Study and Research (2 or 4)
A tutorial in which the student will pursue a course of reading and research with the instructor. May be repeated only once for credit.
Prerequisite: Permission of instructor.

AN 497 Apprentice College Teaching (2 or 4)
Supervised participation in teaching an undergraduate course in anthropology, combined with readings and discussion of teaching objectives and methods appropriate for anthropological presentation. May be taken only once for credit toward a major.
Prerequisite: Senior anthropology major and permission of instructor.

SOCIOLOGY

SOC 100 Introduction to Sociology (4)
Introduction to the basic concepts of sociology relating to the study of man as a participant in group life. Particular attention is given to culture, socialization and personality development and class. *Satisfies the university general education requirement in social science.*

SOC 190 Current Issues in Sociology (4)
Designed for the general student, this course will examine issues of current interest in sociology. The topic will be announced at the time of the offering.

SOC 202 Introduction to Methods of Social Research (4)
The collection, organization, analysis and interpretation of social data; elementary techniques of understanding and using quantitative evidence in sociological research.
Prerequisite: SOC 100.

SOC 203 Social Statistics (4)
Interpretation of social data by quantification and statistical reasoning.
Prerequisite: Two years of high school mathematics.

SOC 205 Current Social Problems (4)
This course presents sociological approaches to analyzing social problems. Particular attention is given to evaluation of the causes and consequences of social problems, as well as of their proposed solutions.

SOC 206 Self and Society (4)
Examines the reciprocal relationship between the individual and the group. Emphasizes the social roots of human nature, the self, social interaction, definitions of reality, socialization and social character. *Satisfies the university general education requirement in social science.*

SOC 301 Social Stratification (4)
The concepts of class, caste and race in relation to social conflict and social integration. Students will study these problems in a cross-cultural perspective, emphasizing comparative materials.
Prerequisite: SOC 100.

SOC 302 Field Research Techniques (4)
Training in: research information storage and retrieval; field research instrumentation (photography, cinematography, video and audio recording, field computers); use of archives and data banks; plus participant observation; ethnomethodology and semantic analysis. Identical with AN 302.
Prerequisite: SOC 100 or AN 102.

SOC 305 Sociology of Religion (4)
An analysis of the social components of religious experience, meaning and behavior; emphasis on the relationship between organized religions and other social institutions and such processes as conversion, commitment sectarianism, accommodation and secularization.

SOC 314 The Social Context of Social Work (4)
A study of the social work profession and the social context of welfare policies, the relationships between social structure and the development of social work practice, and public and private welfare organizations.
Prerequisite: SOC 100 or two courses in psychology or human resources development.

SOC 315 Social Welfare Policies (4)
Survey of the development of social welfare programs in the U.S. Procedures developed to deal with problems of poverty, such as case work, community organization and agency programming; analysis and evaluation of current policy debates on welfare programs.
Prerequisite: SOC 100 or 314.

SOC 320 Sociology of Crime and Punishment (4)
Study of the various forms of criminal deviance, the sociological theories developed to explain the phenomenon of crime, and modes of control from hospitals to penitentiaries.
Prerequisite: SOC 100.

SOC 322 Sociology of Law (4)
An investigation of law and legal institutions from a comparative perspective, including the uses of law, the development of legal institutions, the role and organization of legal professionals, social influences on law, and the capacity of law to affect social behavior.
Prerequisite: SOC 100.

SOC 323 Juvenile Delinquency and its Social Control (4)
Nature and types of juvenile delinquency; the relation of juvenile delinquency to the stress of adolescence and the specific social situation; methods of preventing delinquency or its recurrence.
Prerequisite: SOC 320.

SOC 324 Legal Context of Employee Relations (4)
The legal principles and practices of employer-employee relations, focusing on the laws applicable to labor relations. Includes the jurisdiction, organization and procedures of the laws regulating employer-employee relations; union rights and restraints, collective bargaining, individual rights under collective agreements, employer and union unfair labor practices and discrimination against employees.
Prerequisites: SOC 100 or PS 100 or one course in ECN.

SOC 327 Police and Society (4)
A study of police techniques and problems, of deviant citizen-police relations, and of social control in a field where power is high and visibility is relatively low. Topics include the defenses against corruption and the containment concept of police.

SOC 328 Sociology of Health and Medicine (4)
The sociological study of medicine and the uses of sociology in medicine, definitions of health and illness, disease and death, health care occupations, medical malpractice, the organization of health services, and trends in health and medicine.
Prerequisite: SOC 100.

SOC 331 Racial and Ethnic Relations (4)
A study of racial, ethnic and religious groups, particularly those of the U.S., emphasizing their historical development, problems of adjustment and assimilation and contemporary problems and trends.
Prerequisite: SOC 100.

SOC 335 The Family (4)
A comparative and historical study of the family.
Prerequisite: SOC 100.

SOC 336 Sex Roles in Modern Society (4)
The impact of ideological and technological change on the statuses, occupations and relationship of males and females.
Prerequisite: SOC 100.

SOC 338 Moral Socialization (4)
The cultural, social and psychological dimensions of "morality"; how moral agreements are reached, and how they are communicated to group members; how individual members incorporate these agreements into their personal values and behaviors.

SOC 345 Urban Sociology (4)
The social structure, culture and ecology of early and contemporary urban communities; institutional responses to the problems of modern urban life.
Prerequisite: SOC 100.

SOC 346 Communities and Social Networks (4)
This course focuses on the forms and functions of local communities, including neighborhoods and social networks. Both theoretical and applied implications of these structures for community organization and development are explored.
Prerequisite: SOC 100.

SOC 350 The Transformation of the Workplace (4)
A study of how high technology, computers, and a shift in the economic base of employment are transforming work in contemporary society, why this is happening, and the social, psychological, political and cultural impacts of change in the workplace.
Prerequisite: SOC 100.

SOC 353 Seminar in Socio-Technical Systems (4)
This seminar introduces students to the growing field of inquiry that integrates the social and technical dimensions of work. Issues within the immediate, primary workplace, and the organization and social system that are related to the workplace are examined.
Prerequisite: One social science methods course.

SOC 354 Quality of Work Life (4)
Can small groups in large organizations promote the personal growth of employees and achieve corporate goals of productivity? The use and abuse of quality circles; the tension between personal development, corporate culture, and the ideology of worker/management relations.
Prerequisite: SOC 100.

SOC 357 Industrial Sociology (4)
The relationship between industrial and business organizations and the community; the study of occupations, labor unions, informal work groups, and the character of American occupational life.
Prerequisite: SOC 100.

SOC 359 Human Factors in Quality Control (4)
Focuses on ways to attain quality in societies based on mass production. Examines underlying social principles and specific industrial practices which encourage quality production, particularly in large-scale manufacturing and service industries which are bureaucratically organized.
Prerequisite: One social science course; two years of high school math recommended.

SOC 371 Forms and Effects of Mass Communication (4)
Techniques of disseminating ideas and information through the mass media; evaluation of the media on values of individuals, and policies of institutions. Identical with SCN 371.
Prerequisite: SOC 100 or sophomore standing.

SOC 373 Social Factors of Mass Media (4)
The major sociological factors which control the informational content of the mass media; differences between the structures and processes of control in the print and electronic sectors of the media. Identical with SCN 373.
Prerequisite: SOC 371.

SOC 376 Sociolinguistics (4)
Identical with ALS 376.

SOC 381 Sociology of Modern Organizations (4)
A study of organizations, such as labor unions, ethnic associations and social service agencies. Topics include: analysis of bureaucracies, features of organizations, and effects of organizations on American culture.
Prerequisite: SOC 100.

SOC 392 Current Problems in Sociology (2 or 4)
Seminar in which a topic is studied in depth. Each seminar requires independent readings and writing.
Prerequisite: Permission of instructor.

SOC 399 Field Experience in Sociology (4)
Field experience in sociology with faculty supervision. An academic project related to the departmental discipline which incorporates student performance in an occupational setting. May not be repeated for credit.
Prerequisite: 16 credits in sociology, of which at least 8 must be at the 300/400 level.

SOC 400 Theories of Society and Culture (4)
Acquaints students with the major theoretical foundations of modern sociology. Identical with AN 400.
Prerequisite: SOC 100 or AN 102.

SOC 401 Survey and Interview Techniques (4)
Acquaints students with field interview techniques, questionnaire design, scaling and index construction, experimental and quasi-experimental designs, plus program evaluation research techniques.
Prerequisite: SOC 100.

SOC 402 Small Groups (4)
The study of small group relations and the informal understandings, codes and conventions which they generate. Considers dynamics of individuality, leadership, conformity and esprit de corps in a group setting. Identical with SCN 402.
Prerequisite: SOC 100.

SOC 403 Computer Packages in Social Science (4)
Principles of packaged programs, with practice in data editing and analysis with SPSS (Statistical Package for the Social Sciences) and BMDP. Comparative merits of different packages.
Prerequisite: SOC 203 or equivalent.

SOC 408 Population (4)
Historical analysis of world population growth, focusing on relationships among population size, population policy, and social and economic development.
Prerequisite: SOC 100.

SOC 425 Corrective and Rehabilitative Institutions (4)
Problems of interaction within the institution are analyzed, e.g., between inmate, guard, supervisor and rehabilitation specialist; development of inmate subcultures; dynamics of crisis (e.g., riots); and equilibrium.
Prerequisite: SOC 320.

SOC 430 Internship in Social Justice and Corrections (4 or 8)
Field placement and supervision of students in police, prison and parole organizations and agencies.
Prerequisite: Enrollment in social justice and corrections concentration and written permission of instructor.

SOC 437 Sociology of the Courts (4)
The roles of judges, court officers, jury and attorneys are described and analyzed in the context of their professional matrix.
Prerequisite: SOC 100 and 320.

SOC 455 Contemporary Work Roles, Careers and Labor Markets (4)
The social dimensions of occupational specialization in modern society. The impact of social and technological labor market changes in the supply and demand for workers in various occupations. Industrial and professional career patterns are studied in relationship to values, status, prestige, life style, occupational satisfaction and job-related stress.
Prerequisite: SOC 100.

SOC 460 Political Sociology (4)
Sociological factors which influence distribution of power within a society: political communication, maintenance of political consensus, the revolution process, the structure of political parties, and the emergence of new states.
Prerequisite: SOC 100.

SOC 465 Sociological Perspectives on Aging (4)
Recent sociological perspectives on aging: Topics include status of persons approaching and past retirement age; family and community roles and relations; and occupational and political participation.
Prerequisite: SOC 100 and junior standing or above.

SOC 470 Social and Cultural Change (4)
Identical with AN 470.
Prerequisite: SOC 100.

SOC 480 Independent Study and Research (2 or 4)
Directed individual reading and research.
Prerequisite: Permission of instructor.

SOC 497 Apprentice College Teaching (2 or 4)
Supervised participation in teaching an undergraduate course in sociology, combined with readings and discussion of teaching objectives and methods appropriate for sociological presentation. May be taken only once for credit toward a major.
Prerequisite: Senior sociology major and permission of instructor.

BIOCHEMISTRY PROGRAM

Biochemistry Committee: *Denis M. Callewaert (Chemistry), Bandana Chatterjee (Chemistry), John D. Cowlishaw (Biological Sciences), Kathleen H. Moore (Chemistry), Virinder K. Moudgil (Biological Sciences), Arun K. Roy (Biological Sciences), Michael D. Sevilla (Chemistry), Hitoshi Shichi (Eye Research Institute)*

This interdepartmental program offers a Bachelor of Science degree with a major in biochemistry. The biochemistry program is based on faculty resources and research facilities in the departments of Biological Sciences and Chemistry. The curriculum is designed to prepare students for professional schools in health sciences, graduate school in biochemistry and biochemical research.

The specialized research facilities for cellular and analytical biochemistry at Oakland University include tissue culture facilities, an ultracentrifugation laboratory, isotope laboratories with beta and gamma counters, gas chromatographs, equipment for high pressure liquid chromatography, equipment for NMR, EPR, laser Raman and atomic absorption spectroscopy, and various other computerized biochemical equipment.

Undergraduate students in the biochemistry program have access to faculty research laboratories and are encouraged to participate in various ongoing research programs such as studies in gene expression, hormone action, immunochemistry, biochemistry of viruses and nucleic acids, and radiation damage to macromolecules. The minimum requirement for a B.S. in biochemistry is 124 credits, which include 30 credits in chemistry, 16 credits in biological sciences and 14 credits in biochemistry.

Admission requirements

Students may apply for admission to the biochemistry program after completing 16 credits of the core program with a grade point average (GPA) of 2.50 or better. Courses that carry no numerical grade and letter grades are excluded from the calculation of the GPA.

Requirements for the Bachelor of Science degree in biochemistry

Students wishing to select the biochemistry major should prepare a detailed plan of study in consultation with a member of the Biochemistry Committee. To earn the Bachelor of Science degree with a major in biochemistry, students must complete:

1. A core program of 56 credits, including BIO 190, CHM 144, CHM 145, CHM 149, CHM 225, CHM 203, CHM 204, CHM 209 (or CHM 234, CHM 235 and CHM 237), CHM 342, CHM 343, BCM 453, BCM 454, PHY 151, PHY 152, MTH 154 or MTH 155 (STA 226 is a recommended elective)
2. An additional 12 credits in biology from the following courses: BIO 200, BIO 319, BIO 320, BIO 321, BIO 322, BIO 323, BIO 324, BIO 341, BIO 342, BIO 345, BIO 393 or BIO 394
3. At least 8 credits of advanced study in biochemistry from the following courses: BIO 407, BIO 408, BIO 439, BIO 440, CHM 457, CHM 458, CHM 553, CHM 554 or BCM 490
4. Admission to major standing and approval by the Biochemistry Committee of a detailed program of study at least three semesters before graduation.
5. Courses used to fulfill the requirements of a major in biology or chemistry may not be used to simultaneously fulfill the requirements of a major in biochemistry.

Course Offerings

BCM 453-454 Biochemistry (3 each)
Identical with CHM 453-454.

BCM 490 Biochemistry Research (1, 2, 3, 4)
Laboratory experience in biochemical research requiring at least four hours of work per week per credit. May be repeated for credit. Graded S/U.
Prerequisite: Permission of insructor.

ENVIRONMENTAL HEALTH PROGRAM

Director: *Paul: Tomboulian (Chemistry)*

Designed to integrate applied scientific specialties within the broad field of environmental health, the environmental health program curricula described below prepare students for a variety of professional opportunities in government and the private sector and for graduate study in such fields as toxicology, industrial hygiene and environmental planning.

Graduates of the program should be able to identify and evaluate a broad range of environmental problems. In addition, they should be able to offer solutions, anticipate hazards and prevent future problems. Studies include such areas as health and safety in the work place, toxic substances, air resources, water resources, land resources and planning.

Requirements for the B.S. degree

To earn a Bachelor of Science degree with a major in environmental health, students must complete:

1. An introductory prerequisite core of 38 credits, to be completed with a 2.00 average before major standing is awarded, including BIO 190, BIO 200, CHM 144, CHM 145, CHM 149, CHM 225, PHY 151, PHY 152 (or, for students not considering graduate work, PHY 101 and PHY 102) and 8 credits in mathematics above MTH 121 or MTH 141, usually including STA 225. MTH 154 is strongly recommended (MTH 155 is recommended for students considering graduate education).
2. A program of 50 credits in advanced courses, usually including ENV 308 plus courses required by one of the three options. At least 36 credits must be in courses at the 300 level or above, and 30 credits must be in approved courses numbered 350 and above. At least 16 of the credits taken at the 300 level or above must be taken at Oakland University.
3. Completion of one of the specializations described below.

Specialization in occupational health and safety

Based upon an extensive curriculum planning study, this option combines environmental and occupational health perspectives in scientific and technical courses designed to provide preprofessional training for careers relating human health and safety factors to working conditions. Students learn to recognize, evaluate and control actual and potential environmental hazards, especially undesirable occupational health and safety conditions and practices. The option emphasizes environmental and occupational toxicology.

Required course work includes BIO 207 or BIO 321, CHM 203-204, ENV 355, ENV 358, ENV 386, ENV 388, ENV 474 and ENV 481. Recommended electives include ENV 350, ENV 372, ENV 373, ENV 387, ENV 388, ENV 452, ENV 461, ENV 470, ENV 484, ENV 486, BIO 407 or CHM 453, BIO 301, PS 353 and HST 302.

Specialization in environmental and resource management

This option emphasizes the wise use of resources, especially as they affect human health and well-being. Opportunities for study include air pollution, water pollution, demography, land resource management, control applications and planning functions. Program electives offer training for a variety of field and laboratory opportunities in industry and government, including planning, natural resource management, environmental protection and public health.

Required course work includes the core, plus the following: ENV 355, BIO 301, PHY 107 and PHY 158.

Recommended electives include CHM 203-204, BIO 207 or BIO 321, BIO 303, BIO 311, BIO 312, BIO 307 or BIO 319, BIO 327, BIO 333, BIO 373, BIO 375, BIO 377, BIO 407, BIO 481, ENV 312, ENV 372, ENV 373, ENV 386, ENV 461, ENV 474, ENV 481, ENV 484, PS 302, PS 305, PS 350, PS 353, EGR 407 and HST 228.

Specialization in toxic substance control

This option is designed to provide training for professional opportunities in toxic substance management. The major focus is on toxicological principles and their applications to the production, distribution and release of toxic substances, especially as they may cause environmental problems. Risk assessment, problem solving and legislative compliance are emphasized.

Required course work includes the core plus BIO 301, CHM 203-204, ENV 461, ENV 481, ENV 484 and ENV 486.

Recommended electives include CHM 453 or BIO 407, BIO 341, BIO 375, BIO 377, PHY 107, PS 353, ENV 372, ENV 373, ENV 386, ENV 388 and ENV 474.

Course Offerings

ENV 308 Introduction to Environmental Studies (4)
Survey of a broad range of environmental issues from a scientific viewpoint. Basic ecological and thermodynamic principles with applications to air, water and land pollution; human demography and food supplies; alternative futures. *Satisfies the university general education requirement in natural science and technology.*
Prerequisite: Sophomore standing.

ENV 312 Energy and the Environment (4)
Basic facts of energy: sources, forms, the roles it plays, and its ultimate sinks. Includes study of laws limiting energy utilization, energy flow patterns, effects of energy use on the environment, and analyses of current energy-related problems.
Prerequisite: Sophomore standing; mathematics proficiency at the MTH 111 level.

ENV 322 Subsistence and Technology in Nonindustrial Society (4)
Identical with AN 322.

ENV 333 Food and Nutrition (4)
Introduction to the science of nutrition, with applications to the human diet. Includes compositional analysis of foods, nutritional requirements and fads, and the relationships of agriculture and politics to nutrition.
Prerequisite: Sophomore standing.

ENV 343 Tropical Habitats (2)
Biological analysis of the interactions with tropical environments. Includes history, geology, climatology, agriculture, public health and epidemiology involved with human living in tropical settings.
Prerequisite: Sophomore standing.

ENV 346 Life in the Oceans (4)
Physiographic history, habits, community groups, interrelationships among organisms, the oceans as a food source, human impacts on oceans.
Prerequisite: Sophomore standing.

ENV 350 Selected Topics (1, 2, 3 or 4)
Technical studies in special areas; topics vary with semester. May be repeated for credit.
Prerequisite: Junior standing and permission of instructor.

ENV 355 Environmental Health Practice (3)
Survey of environmental health activities from public health perspective: vector control and prevention, sanitation practice, solid waste management, air pollution control, environmentally related diseases and their prevention.
Prerequisite: Junior standing in environmental health.

ENV 358 Occupational Safety (3)
Systematic study of occupational safety concerns, including accident prevention, loss control, safety management, behavioral factors, hazard reduction, risk management, safety engineering, safety education, and safety laws and regulations.
Prerequisite: Junior standing in environmental health.

ENV 372 Air Chemistry (3)
Technical evaluation of the nature and composition of the earth's atmosphere, both in its natural state and as it has been affected by man. Some discussion of air pollution control will be included.
Prerequisite: CHM 145.

ENV 373 Water Resources (3)
Analysis of natural water systems, introductory hydrology, the chemistry of eutrophication, and wastewater systems. Emphasis is on applications, including water pollution abatement and management strategies.
Prerequisite: CHM 145 and junior standing.

ENV 386 Principles of Occupational Health (3)
Recognition, evaluation and control of environmental factors affecting human health, especially in the work place (industrial hygiene); anticipation and prevention of future hazards.
Prerequisite: Junior standing in environmental health; BIO 190, CHM 203; physics is desirable.

ENV 387 Principles of Occupational Health II (3)
An intensive treatment of selected subjects of current interest in occupational health.
Prerequisite: ENV 386.

ENV 388 General Control Methods (3)
Theory and practice of control of exposure to occupational hazards, government standards, philosophies, ventilation, protective equipment and exposure control will be emphasized.
Prerequisite: ENV 386 or 387.

ENV 390 Directed Studies (1, 2, 3, 4 or 6)
Studies in special areas, often individually arranged. May be repeated for credit. Preparation of study plan and instructor's approval are required before registration. Graded S/U.

ENV 410 Human Adaptation (4)
Identical with AN 410.

ENV 452 Industrial Environmental Control (3)
Problems of air and water pollution, solid waste management, hazardous material handling, and emergencies examined from an industrial viewpoint. Chemical engineering solutions to environmental problems, practical aspects and compliance with regulations.
Prerequisite: Junior standing in environmental health, CHM 145, MTH 154.

ENV 461 Environmental Law and Policies (3)
Legislative and legal perspectives on environmental and occupational health issues. Special emphasis on current laws and regulations, as well as their impact on the groups regulated.
Prerequisite: Junior standing.

ENV 470 Occupational Health Internship (2)
Supervised practical experiences in a variety of occupational health settings.
Prerequisite: Senior standing in environmental health and permission of instructor.

ENV 474 Measurements and Sampling Methods (1, 2 or 3)
Analysis of environmental and occupational exposures and hazards using instrumental methods in the laboratory and field locations.
Prerequisite: CHM 149 and CHM 225; ENV 386 or 388.

ENV 481 Principles of Toxicology (3)
General principles of toxicology: exposure, toxokinetic, and toxodynamic phases; dose effect relationships; toxicological testing methods; factors influencing toxicity. Emphasis is on systemic mammalian toxicology.
Prerequisite: BIO 190, 200; CHM 203 or 234; BIO 207 or 321 desirable; biochemistry desirable.

ENV 484 Environmental Toxicology (3)
Applications of toxicology to broad environmental issues of air, water and land resource pollution; study of sources dispersion, and fate of toxic substances; effects on biological systems.
Prerequisite: BIO 190, BIO 200, CHM 204 or 234; ENV 308, and ENV 386 or 481; biochemistry desirable.

ENV 486 Toxic Substance Control (3)
Detailed discussion of toxic substance flows in society; identification, production, use, distribution and disposal. Emphasis is on risk assessment, risk-benefit analyses, regulatory practices and programs. Current management philosophies and disposal methods are analyzed.
Prerequisite: Junior standing in environmental health; CHM 203; ENV 481 or 484 desirable.

SECONDARY TEACHING SOCIAL STUDIES PROGRAM

The secondary teaching social studies program offers a baccalaureate program with a major in social studies or a separate social studies minor. Students seeking the Bachelor of Arts degree with a major in social studies will take a minor in sociology, psychology, history or political science to achieve secondary teacher certification.

The Michigan secondary provisional certificate is valid for teaching all subjects in grades 7 and 8. In subject matter areas in which the student has completed a major or minor, it is also valid for grades 9 through 12. This program may require more than the minimum number of credits to complete, depending on the student's rhetoric and language placement.

B.A. degree with a teaching major in social studies

To complete the Bachelor of Arts degree with a teaching major in social studies, students must fulfill all requirements set by the College of Arts and Sciences for B.A. candidates.

The social studies program requires a core of social science courses with concentrated study in three social science content areas. The student must:

1. Complete a total of 40 credits in social studies and the social sciences, including:
   a. SS 100 and 200 (prerequisite for ED 455 internship)
   b. 16 credits in political science, evenly distributed between American politics and non-American comparative politics
   c. 16 credits in history, evenly distributed between American history and world history
2. Complete a minor of at least 20 credits in one of the following social sciences: sociology, psychology, history or political science. If a student minors in either political science or history, 16 credits in another social science or from an interdisciplinary social science group must be substituted in the major.
3. Complete a professional component of 40 credits:
   a. ED 110, 370, 427 and 428 must be taken sequentially in three semesters and are each prerequisites to ED 454 and 455.
   b. ED 338, 344 and 345 may be taken any time in the student's program before ED 455.

Students may enroll in ED 455 (internship) only if their grade point average (GPA) in professional courses (ED 110, 370, 427 and 428) is 2.50 or above, with no grades below 2.0; and if their GPA in courses in their majors is 2.50 or above, with no grades below 2.0.

Failure to complete certification requirements in the secondary social studies teaching major may result in the need for additional course work in order to complete an alternative College of Arts and Sciences major.

Advising for the program is available from Nancy Collins, academic adviser, School of Human and Educational Services.

Secondary teaching minor in social studies

A teaching minor in social studies requires completion of SS 100 and 20 additional credits in the social sciences. At least three courses must be taken at the 200 level or above. Students should concentrate in two of the social sciences, earning at least 8 credits in each.

Students intending to minor in social studies must see their secondary social studies academic adviser upon entry into a teacher certification program to agree upon the social sciences concentration and distribution. This minor may not be taken by students majoring in secondary social studies; it is open to any other student with a secondary teaching major.

Students intending to minor in social studies must see their secondary social studies academic adviser upon entry into a teacher certification program to agree upon the social sciences concentration and distribution. This minor may not be taken by students majoring in secondary social studies; it is open to any other student with a secondary teaching major.

Course Offerings

SS 100 Introduction to Social Studies (4)
This introduction to an interdisciplinary social science program provides an overview of the philosophical and historical development of individual social science disciplines (psychology, sociology, anthropology, political science, history, economics and geography). Required of all social studies majors and minors.

SS 200 Inquiry Skills for the Social Scientist (4)
Continues the interdisciplinary focus begun in SS 100. Current issues form its content. Students are expected to apply interdisciplinary investigative models to these issues to solve problems. Required of all social studies majors before student teaching.
Prerequisite: SS 100.

OTHER ACADEMIC OPTIONS

Concentration in American Studies

Coordinator: *Jane D. Eberwein (English)*

Committee: *Sheldon L. Appleton (Political Science), Carlo Coppola (International Studies, Modern Languages), James W. Dow (Anthropology), Thomas Fitzsimmons (English), Robert J. Goldstein (Political Science), Roy A. Kotynek (History), Bruce J. Mann (English), David W. Mascitelli (English), Janice Schimmelman (Art History), Richard B. Stamps (Anthropology), W. Patrick Strauss (History), Ronald A. Sudol (Rhetoric)*

The American studies concentration provides both a broad understanding of the American experience and an introduction to the practice of focused interdisciplinary study. The concentration is taken in addition to a departmental major. By electing departmental courses with an American focus in two or three areas outside the major and framing the concentration with two interdisciplinary American studies courses, students may expect to gain a coherent sense of the national experience and appreciate the various contributions of different academic disciplines.

Although not a vocationally directed program, the American studies concentration should be of particular interest to students preparing for careers in law, government and journalism, and those planning graduate work in American studies or any of its contributing disciplines.

Concentration requirements include one course from the AMS 201, AMS 202, AMS 203 and AMS 204 grouping, AMS 400 and four electives representing at least two fields of study outside the student's major. Recommended electives appear on the list below; other courses emphasizing American materials may also be counted toward the concentration upon approval of a committee adviser.

Recommended departmental electives

Art and Art History: AH 350, 355
English: ENG 224, 302, 317, 320, 322, 324, 332, 341, 342
History: HST 114, 115, 218, 221, 292, 302, 306, 307, 310, 312, 313, 314, 315, 316, 317, 318, 319, 321, 323
Linguistics: LIN 303
Music: MUS 347
Philosophy: PHL 260
Political Science: PS 100, 115, 203, 301, 302, 305, 307, 323, 324, 342, 343, 371, 402, 403
Sociology/Anthropology: SOC 100, 205, 301, 315, 331, 357, 455; AN 380, 381

Course Offerings

AMS 201-204 Approaches to American Culture (4)
Study of central themes in American cultural experience (such as equality, success, individualism, the frontier) from an interdisciplinary perspective. 201 — emphasis on the fine arts. 202 — emphasis on history. 203 — emphasis on literature. 204 — emphasis on social sciences. A student may receive credit for only one course in this sequence.

AMS 400 American Studies Colloquium (4)
Examination of one topic in American studies. Should be taken in the junior or senior year. Offered every fall. Prerequisite: AMS 201, 202, 203 or 204.

Concentration in Applied Statistics

Coordinator: *Robert B. Stewart (Psychology)*

Committee: *Keith A. Berven (Biological Sciences), William E. Bezdek (Sociology and Anthropology), Mary P. Coffey (Mathematical Sciences), Gerard R. Joswiak (Computer Services), Nancy S. Kunsman (Political Science), Scott A. Monroe (Economics), Robert M. Schwartz (Education), John R. Stevenson (Health Sciences), Mohamed A. Zohdy (Engineering)*

The University Committee on Applied Statistics sponsors this interdisciplinary concentration in applied statistics, which is available to all university undergraduates. This concentration focuses on the application and interpretation of statistical procedures in the pursuit of empirically based knowledge. In order to be certified by the committee as having fulfilled the concentration requirements, students must complete at least 16 credits in statistics, including:

1. One course at the introductory level (QMM 250, PSY 357, SOC 203, STA 226 or SYS 317)
2. STA 322
3. STA 323 or 324
4. One 400-level course in the student's major. This course must meet the approval of the University Committee on Applied Statistics.

Students who wish to take this concentration must develop a program in consultation with a committee member.

Concentration in Archaeology

Coordinator: *Richard B. Stamps (Anthropology)*

Committee: *Carl F. Barnes, Jr. (Art History), Gottfried Brieger (Chemistry), James W. Dow (Anthropology)*

The concentration in archaeology prepares students for graduate study in archaeology. It is also helpful for students interested in an interdisciplinary approach to human cultural development viewed from historical, aesthetic and scientific perspectives. Twenty-eight credits are required for this program:

1. AH 100, AN 101 and 222
2. One of the following: AH 312, AH 314, AN 282, AN 370, AN 371 or AN 380
3. 8 credits in methods and field term (AN 383)

In addition to the required courses, a number of other courses are recommended for those who wish to expand their background. These include: AH 322, AH 326, HST 261, HST 306, HST 367 and PHY 107. Students are reminded that professional conservation work requires knowledge in botany and chemistry.

Minor in Computer Science

Coordinator: *Richard E. Haskell (engineering)*

The minor in computer science is offered by the School of Engineering and Computer Science and is available to students within the College of Arts and Sciences. Many combinations are feasible.

With a major in mathematics, physics, chemistry, biology or economics, a student may wish to emphasize numerical and scientific computing aspects of computer science. With a major in English, modern languages, history, philosophy, psychology, sociology or anthropology, a student may wish to take courses that emphasize non-numerical and symbolic data processing, language translation and list processing. With a major in economics, a student may wish to take courses oriented toward application of computers in management data processing. For specific requirements, see page 229 of this catalog.

Concentration in Energy Studies

Coordinator: *Gottfried Brieger (Chemistry)*

The concentration in energy studies provides students with an interdisciplinary approach to energy issues, examined from the perspective of anthropology, biology, chemistry, economics, engineering, physics and political science. It serves as a foundation for additional specialized study in any of these fields. This concentration requires 28 credits, distributed as follows:

1. Core — all of the following: AN 322, ENV 312, PHY 115 and PS 250
2. Advanced option — one of the following: AN 410, ME 454, EGY 350
3. Practicum — all of the following: EGR 106, EGR 108 and EGY 390 (4 or 8 credits)

Course Offerings

EGY 350 Energy Efficient Food Production (4)
Man's opportunities for production of food nutrients through efficient field agriculture, horticulture, and aquaculture, and the energy relationships involved.
Prerequisite: One year of college-level science or permission of the instructor.

EGY 390 Energy Projects (4 or 8)
Laboratory or field work under the direction of a faculty supervisor approved by the concentration coordinator on a current energy-related issue resulting in a comprehensive project and report.
Prerequisite: Concentration core courses EGR 106 and EGR 108 are recommended prior to enrollment.

Concentration in Environmental Studies

Coordinator: *Paul Tomboulian (Chemistry)*

The concentration in environmental studies introduces students to modes of thought and action relative to environmental issues. Students learn to identify and evaluate alternative solutions to environmental problems. Short- and long-range implications of human activities are analyzed, especially as they affect resources and public policy.

Four broad areas of inquiry are included in these studies: systematic analyses of environmental quality issues; effects of human settlements on ecosystems; implications of human life support activities; and use, reuse and depletion of physical and biological resources.

Concentrations are available in conjunction with cooperating departments. Requirements for the concentration are 28 credits in environmental studies and related courses, to be planned and selected with the program coordinator. Courses in environmental studies are listed under the Environmental Health Program (see page 173).

Related courses in many departments are often suitable for an environmental studies concentration. These include, but are not limited to: AN 102, BIO 301, BIO 303, BIO 311, BIO 327, BIO 373, BIO 375, BIO 377, ECN 309, ECN 310, EGR 407, HST 228, PHL 318, PHY 107, PHY 115, PS 250, PS 305, PS 350 and PS 353. Consult the program coordinator for details.

Concentration in Film Aesthetics and History

Coordinator: *Dolores M. Burdick (French)*

Committee: *Bonnie Abiko (Art and Art History), Peter J. Bertocci (Anthropology), Alfred J. DuBruck (French), Robert T. Eberwein (English), Donald C. Hildum (Communications), Brian F. Murphy (English)*

The interdisciplinary concentration in film aesthetics and history, sponsored by the departments of English, Modern Languages and Literatures, Art and Art History, Center for International Program, and Rhetoric, Communications and Journalism, offers multiple perspectives for examining theoretical and critical issues of film as art and communication. The introductory courses explore the operation, function and construction of film. The history courses ex-

amine narrative and technical developments with emphasis on major directors, genres and trends. The theoretical courses are concerned with the uniqueness of film, its relation to other forms of verbal and plastic arts, and special approaches needed for analysis and enjoyment.

The range of viewing experiences and the variety of approaches to the medium provide an excellent preparation for students seeking employment in advertising, publishing, journalism, visual media or teaching, as well as those who wish to pursue film studies on the graduate level.

Twenty-eight credits are required, including CIN 150, ENG 250, ENG 392; two courses chosen from among CIN 300, CIN 301 and CIN 302; and two courses chosen from AH 367, AN 307, CIN 450, ENG 309, LIT 251 and SCN 303. In special circumstances, CIN 499 may be substituted for one of the above courses with permission of the concentration coordinator.

Course Offerings

CIN 150 Introduction to Film (4)
Introduction to the art of film by examination of the filmmaking process, study of narrative and non-narrative film, and exploration of film's relation to society. *Satisfies the university general education requirement in arts.*

CIN 300 History of Film: The Silent Era (4)
Survey of directors and films important in shaping film history: Griffith, Eisenstein, Chaplin, Maurnau, Pabst, Lang and others.

CIN 301 History of Film: The Sound Era to 1958 (4)
Examination of significant directors, genres and movements: Welles, Hitchcock, Renoir, DeSica and others; the western, gangster film, musical; neorealism, film noir.

CIN 302 History of Film: The New Wave and Beyond (4)
Study of film since 1959: New Wave directors such as Truffaut, Godard, Resnais; major artists such as Fellini, Bergman, Kubrick; experimental films and new developments.

CIN 450 Topics in Film (4)
Examination of specialized subjects in film such as: The War Film, Alfred Hitchcock's Films, The New Wave, The Japanese Cinema. Topics to be selected by instructor.

CIN 499 Independent Study (4)
Study on an independent basis for students with demonstrated interest in film. A proposed course of study must be submitted to the prospective instructor in the semester before the independent study is to be taken. Prerequisite: One course in film.

Concentration in Folklore and Popular Culture

Coordinator: *Mark E. Workman (English)*

Committee: *Jane M. Bingham (Education), Marc E. Briod (Education), Judith K. Brown (Anthropology), Roy Kotynek (History), Lucinda Hart-Gonzalez (Linguistics), Amitendranath Tagore (Chinese)*

Folklore is traditional, artistic behavior; it is engaged in by even the most intellectually and technologically sophisticated among us, and it encompasses all modes of expression. Popular culture borrows from folklore its formulas of production as well as much of its content. The concentration in folklore and popular culture provides an introduction to the materials and methods of inquiry into these subjects, and encourages students to pursue further the extensive social and cultural ramifications of folklore and popular culture into related areas of study.

The program is of potential relevance to students in all areas of the humanities, social sciences and education. It will be of benefit to them both in their studies at Oakland University and as preparation for careers in the media, human services, teaching or graduate work in any of the fields related to the concentration.

This concentration requires 28 credits, including ENG 214 and 302. A minimum of 8 credits must be taken at the 300-400 level, and no more than 8 credits from the student's major will

count toward the concentration. A current list of approved electives, which must be selected in consultation with the concentration coordinator, follows: AN 251, AN 271, AN 310, AN 333, IS 386, AH 360, SCN 371, THA 346, ED 332, ENG 120, ENG 211, ENG 302, ENG 304, ENG 312, ENG 313, ENG 314, CIN 150, HST 222, HST 292, HST 346, ALS 375, MUS 347 and REL 295.

Concentration in Gerontology

Coordinator: *Harold Zepelin (Psychology)*

Committee: *David P. Meyer (Education), William F. Moorhouse (Education), Frank Schieber (Psychology), Elinor B. Waters (Continuum Center)*

The multidisciplinary concentration in gerontology, which is co-sponsored by the School of Human and Educational Services, provides students an opportunity to gain an understanding of aging as a process in personal, cultural and social contexts. It adds another dimension to career preparation for students who plan to obtain graduate degrees in helping professions such as nursing, clinical psychology and social work. It also offers essential background and introductory experience to students holding bachelors degrees who wish to seek employment in agencies that provide services for the elderly.

The concentration requires 24 credits, 12 in required core courses and 12 in elective courses. The advanced core course, a multidisciplinary seminar on aging (GRY 400), will bring students into contact with diverse disciplines that have an interest in aging. Students in arts and sciences must choose one elective (4 credits) from HRD courses.

Requirements for the concentration in gerontology consist of the following:

1. Core — two of the following: BIO 250, PSY 331 and SOC 465
2. Required advanced course: GRY 400
3. Electives: HRD 369 or HRD 490, HRD 431, HRD 467, HRD 469, PSY 371, PSY 372, SOC 314/514 or SOC 315/515, and GRY 480

Course Offerings

GRY 400 Multidisciplinary Seminar on Aging (4)
Presentations of research and reviews of the literature, bringing together contributions from biology, the health care professions, the humanities, political science, psychology and sociology.
Prerequisites: Completion of required introductory courses.

GRY 480 Research in Gerontology (4)
Individually designed experience in research on aging, beginning with reviews of the literature and culminating in data collection or formulation of a research proposal.
Prerequisite: Concentration's introductory requirements and an introductory research course.

Concentration in Michigan Studies

Coordinator: *Richard B. Stamps (Anthropology)*

Committee: *John B. Cameron (Art History), Paul Doherty (Physics), W. Patrick Strauss (History)*

The concentration in Michigan studies is an integrated program of courses that provides both a broad introduction to and a focused interdisciplinary study of Michigan. Each student is required to take MC 100 "Life in Michigan", which serves to integrate the various disciplinary offerings.

The concentration requires completion of 26 credits, including MC 100, to be selected from the following course offerings. No more than 8 credits from the student's major may be counted toward the concentration.

Course Offerings

MC 100 Life in Michigan (2)
An introduction to Michigan history and politics, fine art and archaeology, geology and environment, flora and fauna, climatology, and industry and economic development.

Students will select the remaining 24 credits from the following courses (4 credits each, except for ENV 373, 3 credits).

AH 355 Michigan Architecture
AH 360 History of Automobile Design
AH 399 Field Experience in Art History
AN 383 Methods in Anthropological Archaeology
AN 399 Field Experience in Anthropology
BIO 303 Field Biology
ENV 373 Water Resources
HST 218 History of Michigan
HST 302 American Labor History
HST 399 Field Experience in History
PS 305 Politics of the Local Community
PS 307 State Politics
PS 458 Public Affairs Internship
SOC 343 Communities

Concentration in Preprofessional Studies in Medicine, Dentistry and Optometry

Coordinator: *Egbert W. Henry (Biological Sciences)*

Committee: *Gottfried Brieger (Chemistry), Denis M. Callewaert (Chemistry), John R. Reddan (Biological Sciences), Robert L. Stern (Chemistry), Nalin J. Unakar (Biological Sciences), Robert H. Edgerton (Engineering), Barry S. Winkler (Eye Research Institute)*

The concentration in preprofessional studies in medicine, dentistry and optometry is intended for students who wish to pursue careers in medical, osteopathic or dental professions. Students are expected to complete a concentration consisting of the following:

1. 20 credits of biology, including laboratories
2. 20 credits of chemistry, including laboratories and two semesters of organic chemistry
3. 8 credits of mathematics
4. 10 credits of physics, including laboratories

In chemistry, mathematics and physics courses, students should opt for sequences that are more rigorous in academic content. The concentration provides the minimum requirements for admission to various medical, osteopathic and dental schools in Michigan and elsewhere. The committee strongly recommends the following additional courses for better preparation for the Medical College Aptitude Test (MCAT) and medical school curriculum:

1. Science: genetics (BIO 341, 342), developmental biology (BIO 323, 324), biochemistry (BIO 325 and 326 or CHM 453, 454, 457 and 458) and physiology (BIO 321 or BIO 207 and 208).
2. Humanities: vocabulary and etymology (ALS 102) and/or RHT 103, 105 and 110. RHT 105 and 110 are suggested for improving reading comprehension skills in preparation for the MCAT.

Students intending to pursue a career in the optometric profession are advised to take the following courses:

1. 20 credits of biology, including laboratories
2. 20 credits of chemistry, including laboratories and two semesters of organic chemistry
3. 12 credits of mathematics, including calculus (MTH 154 and MTH 155)
4. 10 credits of physics, including laboratories
5. 4 credits of introductory psychology, 8 credits of English and 8 credits of social science

This concentration does not constitute a major. Students must elect a major from those offered by the university. Interested students should consult the advisory committee for counseling and assistance in planning their academic programs.

Concentration in Religious Studies

Coordinator: *Leonardas V. Gerulaitis (History)*

The religious studies concentration offers a series of courses on religion, both Western and Eastern, traditional and contemporary. These courses do not seek to confirm or attack any particular religious point of view; they are taught in the same scholarly and objective spirit as other university courses and aim at understanding a pervasive human phenomenon. They are grouped into two types: historical studies and systematic studies.

The program currently offers a concentration in religious studies that consists of at least 20 credits in religion, which may be taken jointly with a modified major (24 credits) in philosophy or with a full major in any other department of the College of Arts and Sciences.

Students wishing to make religion the focus of an independent major will receive the support of the Committee of Religious Studies. Interested students should see the concentration coordinator for further information.

In addition to the religion courses, several collateral courses are suggested: ENG 312, HST 325 and PHL 205. Courses with REL 200 numbers require only sophomore standing; courses with REL 300 numbers require one previous course in religious studies at Oakland University, unless identical with departmental courses having different prerequisites.

Course Offerings

HISTORICAL STUDIES

REL 200 Topics in the Historical Study of Religion (4)
The topic varies. Samples include: the New Testament, medieval mysticism, early Buddhism, the Protestant Reformation, Christ and Caesar, eighteenth and nineteenth century attacks on religion. May be repeated for credit.

REL 202 The Jewish Tradition (4)
Selected ideas and institutions in the development of Judaism from its pre-exilic roots to the present. Offered in cooperation with the Jewish Chautauqua Society.

REL 203 The Christian Tradition (4)
Study of the most important Christian ideas and institutions from Jesus to the present.

REL 211 The Bible as Literature (4)
Identical with ENG 211.

REL 250 Philosophies and Religions of Asia (4)
Identical with PHL 250.

REL 295 Contemporary Religious Movements (4)
Begins with a review of institutional religion in America, then surveys underground church movements, Zen, Yoga, TM, and others. Field work possible.

REL 304 The Islamic Tradition (4)
Selected ideas and institutions in the history of Islam.

REL 307 American Religious History (4)
Identical with HST 307.

SYSTEMATIC STUDIES

REL 220 Topics in the Systematic Study of Religion (4)
The topic varies. Samples include: mythology, psychoanalysis and religion, religion and education, types of religious communities, shamanism, the hero. May be repeated for credit.

REL 225 Philosophy of Religion (4)
Identical with PHL 225.

REL 227 Psychology of Religion (4)
Basic data of religious experience in relation to motivation, cognitive structure, and personality; problems of religious symbolism, verbal and nonverbal; dynamics of religious movements; growth, propagation, and preservation of orthodoxy; varieties of reform.

REL 229 Religion and Literature
Study of a few masterpieces of world religious literature, such as Greek tragedy, Hindu epic, Dante and Milton, with an attempt to generalize about the use of religious themes in literature and about literature as an expression of religious belief.

REL 271 Magic, Witchcraft and Religion (4)
Identical with AN 271.

REL 291 Religion and Contemporary Moral Problems (4)
Investigation of the theological and ethical reasons for the emergence of a new attitude toward moral questions. Protestant, Catholic, Jewish and secular viewpoints on some of these: love, sex, civil disobedience, criminal punishment, violence, war, suicide and death.

REL 305 Sociology of Religion (4)
Identical with SOC 305.

REL 390 Directed Readings in the Study of Religion (4)
Individual study of a topic not covered by regular courses, with guidance of a faculty tutor. May be repeated for credit.
Prerequisite: Permission of concentration coordinator.

Concentration in Social Justice and Corrections

Coordinator: *Students should consult the chairperson, Department of Sociology and Anthropology, for advising referral*

The concentration in social justice and corrections requires at least 28 credits and is to be taken in conjunction with a full major in any department of the college. It provides career-oriented education for students interested in the social forces producing delinquency and crime, in the evaluation of social planning for crime prevention and control, and in the operation of police organizations and correctional institutions.

A student must be formally admitted to the program and meet the following requirements:

1. 12 credits chosen from SOC 320, SOC 322, SOC 327, SOC 425, PS 241 and PS 343
2. 12 credits from HI 361, HI 461, ORG 330, ORG 331, PHL 103, PHL 221, PS 241, PS 342, PS 343, PSY 220 and PSY 322
3. 4 or 8 credits of SOC 430

Concentration in Social Services

Coordinator: *Jacqueline R. Scherer (Sociology)*

The concentration in social services requires 28 credits and is available to students throughout the university, regardless of major. It is primarily designed for students who intend to pursue graduate studies in social services or who are interested in the analysis of social programs and social welfare policies. The social and psychological dimensions of service delivery are explored as they relate to professional development and the integration of theoretical and applied approaches to problem solving.

The following requirements apply to the concentration in social services:

1. SOC 314 and 315
2. Two of the following: PSY 220, 271, 311 or 331
3. Field experience: PSY 399, SOC 399 or equivalent course

4. Statistics: SOC 203 or equivalent statistics course
5. One elective from the following: HI 361, SOC 328, SOC 331, PSY 323, PSY 336 or HRD 331

Students are requested to enroll formally in the program by completing an application at the Department of Sociology and Anthropology office.

Concentration in Urban Studies

Coordinator: *Harry Gold (Sociology)*

Committee: *Johnetta Brazzell (Placement and Career Services), De Witt S. Dykes (History), Oded Izraeli (Economics)*

The urban studies concentration is designed to provide a comprehensive interdisciplinary understanding of modern urban civilization and to develop an appreciation of some of the problems and policy issues confronting contemporary American urban communities. It is also designed to introduce some of the technical skills that are a prerequisite to the successful pursuit of career opportunities in a variety of urban-oriented public and private service or administrative organizations.

The concentration provides a carefully selected group of required core courses drawn from several departments, allows a relatively broad choice of electives and provides an interdisciplinary seminar designed to help integrate the knowledge and skills acquired in the program.

Students wishing to pursue the concentration in urban studies must submit an advising plan to the concentration adviser and make application to the concentration coordinator to be admitted to the program. One course in statistics and/or methodology offered by a social science department or a statistics course offered by the Department of Mathematical Sciences is a prerequisite to the program. To earn the urban studies concentration, students must complete 28 credits, distributed as follows:

1. Core — three of the following four courses: PS 305, ECN 309, SOC 345 or HST 223
2. Electives — three of the following courses (none of the courses may overlap with courses in the student's major and no more than two courses may be taken in a single department): AH 363, HST 302, PSY 326, HRD 331, HRD 364, NCC 161, ECN 356, SOC 315, SOC 331, PS 307, PS 350, PS 353 or PS 455
3. Senior seminar — required of all students: CHD 490 ("Senior Seminar in Urban Studies," described below)
4. Internship — although an urban internship or field experience is not required as part of the concentration, it is strongly suggested that students complete such a course in their major department or another program in the university. Ideally, the internship should be completed before the senior seminar.

Course Offerings

CHD 490 Senior Seminar in Urban Studies (4)
A seminar integrating knowledge of the urban arena through the exploration of diverse topics and the development of substantive research.
Prerequisite: Permission of instructor.

Concentration in Women's Studies

Coodinator: *Virginia Blankenship (Psychology)*

Committee: *Barbara Hamilton (Rhetoric), Melodie Monahan (English), Janice Schimmelman (Art History), Mary Otto (Research and Academic Development), Hoda Abdel-Aty Zohdy (Engineering), Linda Hildebrand (Kresge Library)*

The women's studies concentration explores the contributions of women through their work and lives, to the arts, the sciences and society. The concentration opens areas of study and research related to women that arise from the various academic disciplines and from women's experience,

uniting and clarifying core concepts and ideas.

Students working toward a women's studies concentration discover information and generate questions that lead to an understanding of the present position of women in society and to the formulation of theories that may explain, predict and improve that position. This interdisciplinary concentration is a humanistic complement to any conventional academic major.

Twenty-eight credits are required for the concentration in women's studies, distributed as follows:

1. WS 200.
2. A combination of any three women's studies core courses: WS 300 "Women in Transition", 301 "Special Topics" and 401 "Advanced Topics in Women's Studies". The content and instructor for WS 301 and 401 change from semester to semester; therefore, students may receive credit for more than one WS 301 and 401 class.
3. WS 101 "Introductory Topics", 201 "Topics in Women's Studies" and approved women's studies electives (a list of women's studies electives for the current semester is available in the *Schedule of Classes* or from the concentration coordinator).

Course Offerings

WS 101 Introductory Topics in Women's Studies (4)
Course content varies. May include women and history.

WS 200 Introduction to Women's Studies (4)
Core course provides an overview of women's studies theories and methods. Strictly interdisciplinary and comparative in approach, offering a general education in women's studies literature, history, economics and culture.

WS 201 Topics in Women's Studies (4)
Course content varies. Representative topics are history of women since 1750 and history of the American family.

WS 300 Women in Transition (4)
Focuses on life experiences unique to women. Major issues include identity and independence, marriage, childbirth, adulthood and aging.

WS 301 Special Topics in Women's Studies (4)
Course content varies. Representative topics are women in art, women and literature, psychology of women, anthropology: women's lives, women and public policy.

WS 400 Directed Project in Women's Studies (2, 4)
Project may focus upon scholarly research or may involve field work or community activism around issues of importance in women's studies.
Prerequisite: Approval of faculty adviser and women's studies coordinator.

WS 401 Advanced Topics in Women's Studies (4)
Course content varies. Representative topics include research methods in women's studies.

Prelaw Studies

Students planning to attend law school after graduation should major in a field in which they have both interest and aptitude; the actual field is less important for admission than the overall success of the student in college training as measured by the cumulative grade point average and scores on the Law School Admission Test (LSAT).

Rather than mastery of any particular subject matter, law schools require of incoming students certain basic skills, particularly the ability to think logically and to express oneself orally and in writing in a coherent and precise manner. No one academic discipline possesses a monopoly on development of these abilities. The best advice to students planning legal careers is to develop strong writing skills and to plan undergraduate course study with an eye toward long-term plans within the legal profession.

Although there is no formal prelaw curriculum at Oakland University because no set of specific courses is necessary for admission to, or success in, American law schools, the attention of students interested in law is drawn to courses in five categories. None of these courses is in any sense required, or even strongly recommended, for all prelaw students; yet the experience of many lawyers and law students suggests that they will be helpful to some.

I. The first category consists of courses that develop fundamental abilities of reasoning and communication. Introductory courses in all of the liberal arts disciplines (humanities and natural and social sciences) serve this purpose. Particularly relevant are courses that develop thinking and writing capabilities. These include: ENG 380, PHL 102 and PHL 103.

II. A second group, devoted to oral communication, includes: SCN 201, SCN 220, SCN 301, THA 267 and THA 350.

III. A third group features law in relationship to other disciplines. The university offers many courses placing law and legal institutions in such a context. These include: AN 440, ECN 378, HST 303, PHL 319, PS 241, PS 342, PS 343, SOC 322, SOC 324 and SOC 437.

IV. A fourth group of courses has do with business operations, an aspect of the practice of law that is often overlooked. The increase in numbers and competition within the bar have placed unprecedented emphasis on business skills. These courses include: ACC 200, FIN 320, MIS 300 and MKT 302.

V. A fifth group, substantive law courses, may be of special interest to students who do not have a definite intention of applying to law school but who wish to be better informed about the law, to experience the special style of legal instruction or to gather enough information to make a final decision about a legal career. These courses include: ENV 461, JRN 403 and MGT 424.

Students considering law school are warned against overemphasizing law-related courses in their undergraduate training. Law schools virtually never give credit, either for placement or for graduation, for such courses and are inclined to believe such students are too narrow in their education. Undergraduate education is a distinct and vital part of one's professional training and should never be regarded simply as a way station before beginning one's "real" work. It must be emphasized that none of the courses listed here is required of, or restricted to, prelaw students.

Students interested in the Legal Assistant Program instead of preparation for law school should see page 143 of this catalog. The College of Arts and Sciences also offers a concentration in social justice and corrections (see page 186).

Off-campus Studies Programs

The College of Arts and Sciences administers an off-campus independent study program that allows a student to propose his or her own course of study for the semester off campus. The following standards and procedures apply:

1. Any undergraduate student in good standing is eligible to participate in the program after completion of two semesters in residence.
2. A written proposal describing a course of activity will be prepared by the student applicant before beginning the program.
3. The above written proposal and the off-campus work it describes must receive support and involvement of at least three faculty members and approval of the dean.
4. All arrangements for off-campus work must be completed and filed with the office of the dean during the semester preceding the semester of off-campus study.
5. Part of the preparatory work must include the designation of course equivalents totaling at least 8 credits for the independent study to be accomplished. This is to be negotiated with supporting faculty members.
6. Whenever credit is sought toward completion of a major, the department, through its chairperson, must agree to the value of the independent work.

7. The dean of the college will require a release from parents absolving the university of responsibility for the well-being of students under 18 years of age while they are participating in an off-campus independent study.
8. The initial approval of a program for a student will be for one semester with the provision that the student may request an extension of the program for additional semesters.
9. The student must be registered at Oakland University and pay the required fees during the independent study period.

Students interested in overseas study programs sponsored by other universities and organizations, both domestic and foreign, should contact the Study Abroad Office, 430 Wilson Hall. Information on work-study opportunities sponsored by institutions other than Oakland University can be obtained from the Department of Placement and Career Services, 275 Vandenberg Hall West, and from the Center for International Programs, 430 Wilson Hall.

Teaching Minors in Science

Coordinator: *Sheldon L. Appleton (Associate Dean, College of Arts and Sciences)*

The liberal arts teaching minor in science requires at least 24 credits selected from courses, approved by a faculty adviser, offered in biological sciences, chemistry and physics. Course selections cover two of the three disciplines and must include 12 credits in each discipline applied to the minor. All courses must be at the levels of BIO 190, CHM 144 and PHY 101 or above. They may not include courses in the student's major discipline. Two options are available.

The following requirements apply to the two-science minor:

1. Complete at least 8 credits as well as laboratory in each of the two sciences selected from the following: BIO 190, 195 and 200; CHM 144, 145 and 149 (or CHM 164, 165 and 149); or PHY 101, 102 and 158 (or PHY 151, 152 and 158).
2. Complete at least 8 additional credits from either one science or split between the two sciences.

The following requirements apply to the three-science minor:

a. Complete BIO 190, 195 and 200; CHM 144, 145 and 149 (or CHM 164, 165 and 149); and PHY 101, 102 and 158 (or PHY 151, 152 and 158).

Students who elect a single discipline minor in either biology, chemistry or physics are not eligible for the science minor, nor are students majoring in biochemistry, biology, chemistry, computer and information science, engineering, environmental health, industrial health and safety, medical physics, medical technology, nursing, physical therapy or physics.

HONORS COLLEGE

Director: *Brian F. Murphy (English)*

Council: *Bandana Chatterjee (Chemistry), Donald C. Hildum (Rhetoric, Communications and Journalism), Vincent B. Khapoya (Political Science), Lewis N. Pino (Chemistry), Norman Susskind (Modern Languages and Literatures), one sophomore, one junior and one senior Honors College student*

The Honors College has been established by the faculty of the College of Arts and Sciences for highly motivated students seeking an unusually challenging undergraduate education. It offers a specially designed general education and additional requirements, in conjunction with a departmental major from the College of Arts and Sciences or one of the professional schools.

Students currently admitted to or enrolled at Oakland University may apply directly to the Honors College for admission; others must apply for admission to Oakland University as well. Application forms are available at the Honors College office.

Courses with the HC prefix are open only to students who have been accepted to the Honors College.

Requirements and Procedures

Departmental majors

Each student must complete a departmental major in the College of Arts and Sciences or a prescribed course of study in the School of Business Administration, the School of Engineering and Computer Science, the School of Health Sciences, the School of Human and Educational Services or the School of Nursing.

A student who is not pursuing a standard major (for example, a student with an independent major) may be accepted to the Honors College if the Honors College Council determines that the student's program is of sufficient breadth, depth and coherence.

All Honors College students must follow specially designated honors tracks in departments where they exist.

General education requirements of the Honors College

1. The student must successfully complete RHT 101 or its equivalent.
2. The student must successfully complete at least four Honors College core courses, chosen from HC 201, 202, 203, 204, 205, 206, 207 or 208.
3. The student must successfully complete at least one 4-credit course in each of the four general education areas not covered by the HC core courses taken. A student may meet this requirement by successfully completing relevant university general education courses, departmental courses that count towards a major, additional HC core courses or a combination of these.
4. The student must successfully complete a senior colloquium, HC 401.
5. The student must attain second-year foreign language proficiency.

Note: Honors College requirements replace university and college general education requirements. Students should not attempt to fulfill both sets of requirements.

Advanced standing

The student shall apply for advanced standing in the Honors College, normally by the end of the fourth semester. Following receipt of the application, the Honors College Council will interview the applicant. The interview will be of a general nature, but will deal, in part, with material studied in the Honors College core courses the student has completed.

After the interview, the council may admit the student to advanced standing, grant the student conditional advanced standing or ask the student to withdraw from the Honors College. Students who are granted conditional advanced standing will be informed why.

Generally, a student will not be considered for admission to advanced standing, or for removal of conditional status, later than the fourth week of the semester following that in which the student completes 80 credits.

Independent project

Each Honors College student must successfully complete a major creative or scholarly work under the supervision of a faculty member. All independent projects must be approved by the Honors College Council prior to proceeding with work. Independent project proposals should be submitted to the council before students complete their junior year. The project must be approved within the first four weeks of the semester following that in which the student completes 96 credits.

The student may receive departmental or Honors College independent study credit for all or part of this work. The student may, but is not required to, register for HC 490.

The project must be independently designed and completed.

Completed independent project reports are due no later than the week following the middle week of the semester in which the student intends to graduate.

Grade point average and graduation honors

A grade point average of at least 3.30 is required for graduation.

Honors College students may receive departmental and university honors upon graduation.

Course Offerings

HC 201 through 208 Honors College Core Courses (4 each)
Introduction to ways of thinking characteristic of a modern university. HC 201 deals with the arts, HC 202 with literature, HC 203 with language, HC 204 with western civilization, HC 205 with international studies, HC 206 with social science, HC 207 with mathematics, logic or computer science and HC 208 with natural science or technology. Offered every other year.

HC 401 Honors College Senior Colloquium (4)
Discussion of a broad topic of traditional concern or an issue of particular current significance. Offered annually.

HC 490 Independent Study (2, 4)
Supervised instruction in the Honors College independent project. May be repeated for credit. Offered each semester.

NEW CHARTER COLLEGE

Co-chairpersons: *Leo Gerulaitis (History) and Irving Torgoff (Psychology)*

Faculty: *Lizabeth A. Barclay (Business Administration), John Beardman (Art and Art History), Peter Bertocci (Anthropology), David C. Bricker (Philosophy), Marc Briod (Education), Richard Brooks (Philosophy), Dolores Burdick (Modern Languages), Harvey Burdick (Psychology), Richard J. Burke (Philosophy), F. James Clatworthy (Education), John Cowlishaw (Biology), Peter Evarts (English), Thomas Fitzsimmons (English), Wilma Garcia (Rhetoric), James Graham (History), Carol Halsted (Dance), Marvin Holladay (Music), Roy Kotynek (History), Vincent Khapoya (Political Science), Margaret Kurzman (Rhetoric), David Mascitelli (English), Donald Morse (English), Margaret Pigott (Rhetoric), Elizabeth Pinkstaff (Nursing), Jacqueline Scherer (Sociology), Robert Stern (Chemistry), Ronald Swartz (Education)*

Adjunct faculty: *Charles Morton (Philosophy), Laurel Torgoff (clinical psychologist), Bernard Travnikar (child counselor)*

Drawing on faculty from departments and schools throughout the university, the New Charter College offers an interdisciplinary individual approach to learning.

The New Charter College does not offer a major or a degree, but degree candidates in any of the university's departments or schools may augment their studies through course work offered by the college. Candidates for the Bachelor of General Studies will find the New Charter College courses to be broad, flexible and challenging.

Academic counseling also is available to students enrolled in New Charter College courses.

Courses at all levels ending in numbers from 11-19 emphasize the creative arts, 21-29 the humanities, 31-39 the social sciences, 41-49 the natural sciences and 51-59 community studies.

Course Offerings

NCC 100 Individual in the University (4)
Exploration of general education in relation to life experiences and career development. Links personal competencies, goals and needs to academic subject matter, the history and structure of the university and critical evaluation of the processes and possibilities of higher learning.

NCC 101 Explorations in Interdisciplinary Studies (2, 4)
An introductory course enabling students to sample various interdisciplinary approaches and to develop broader perspectives on interdisciplinary matter.

NCC 112 Creative Expression (4)
Exploration of communication with self and others within structured forms of dance, music and drama. Visual arts and other media are used to implement expression where appropriate and possible. Graded S/U.

NCC 121 Images of Humanity (4)
Literature as a cross-cultural mirror. Literary works of various types will be explored, with emphasis on the ways that writers look outward in order to reflect the world in which they live.

NCC 122 Alienation in Youth (4)
Problems and questions about why students and adolescents may reject the values of their native society, as well as the difficulties in bringing about genuine change in society and self.

NCC 123 Science Fiction, Detective Stories and the Scientific Method (4)
Using representative works from science fiction, detective stories and the philosophy of science, this class focuses on the effects of scientific discoveries on human life and culture.

NCC 131 Studies in Human Organization (4)
Interdisciplinary introduction to the behavioral sciences. Topics may range from the cross-cultural study of human relations and lifestyles to the dimensions of a contemporary American social problem.

NCC 141 Twentieth Century Science (4)
Exploration of current frontiers in scientific thought and conceptualization, in relation to contemporary society and its problems. No advanced specific knowledge of modern science is required.

NCC 147 History of Science (4)
Several historical periods, from antiquity to the present, are examined to see how the development of science has been influenced by the intellectual climate of the era and how new insights in the sciences have helped shape different societies' perceptions of reality.

NCC 151 Introduction to Urban Studies (4)
Introduction to the interdisciplinary subject matter of urban studies. Guest speakers provide a wide range of perspectives on the problems and possibilities of human growth in modern American cities.

NCC 201 Topics in Interdisciplinary Studies (2, 4)
An intermediate course enabling students to sample various interdisciplinary approaches and to develop broader perspectives on interdisciplinary subject matter.

NCC 210 Study Abroad (2, 4)
An interdisciplinary topic relating to the culture of a foreign country or region, enriched by traveling and living in that area. Readings, discussion and structured itineraries are designed to enhance general understanding of that culture in broader academic perspectives.

NCC 215 African Music as Oral Culture: West African Drumming (4)
West African drum ensemble traditions will be investigated in a performance context and comparisons explored with other musical traditions of indigenous African cultures. Special attention is given to linguistic relationships in the tonality of African music.

NCC 223 Personal Worlds (4)
Philosophical and literary sources are used to explore the dreamlike and dramatic inner quality of personal worlds. Analogies are drawn between the fictional lives of others and the stranger within the self.

NCC 227 Those Were the Days (4)
From a contemporary perspective, cultural history and social alienation in America during the 1950s and 1960s are studied. Themes of alienation as seen by different generations, sexes and ethnic groups are analyzed in relation to popular music, television and film.

NCC 235 Perspectives on Psychic Research (4)
Survey and anlysis of contemporary research into parapsychology and a wide range of observed or purported psychic phenomena — such as clairvoyance, mediumship, faith-healing, precognition, astral projection, etc.

NCC 241 Body and Soul (4)
Explores multiple approaches to self-knowledge, based on the writings of different authors who attempt to integrate human biology with psychology and culture. The question of reality of body and soul is examined in light of a systems approach to the life sciences.

NCC 252 Interpersonal Relationships: Marriage, Family and Divorce (4)
Critical evaluation of individual feelings about tradition and change in marriage and parenthood, male and female roles, sexuality and companionship, marital conflict and divorce, and the single life.

NCC 300 Independent Study (2, 4)
Advanced interdisciplinary reading on a topic of interest to the student, who assumes initiative for planning this reading project in conjunction with New Charter College faculty sponsor and approval of the New Charter College Executive Committee. Graded S/U. Offered every semester.
Prerequisite: Approved NCC contract.

NCC 301 Seminar in Interdisciplinary Studies (2, 4)
An advanced course enabling students to sample various interdisciplinary approaches and to develop broader perspectives on interdisciplinary subject matter. Offered every year.
Prerequisite: Previous NCC course work or permission of instructor.

NCC 310 Creative Arts Contract (2, 4)
Opportunity to develop artistic skills within context of aesthetic history and criticism. Student must submit learning contract, signed by New Charter College faculty sponsor and approved by the New Charter College Executive Committee, by way of applying for permission to take this class. Graded S/U.
Prerequisite: Approved NCC contract.

NCC 321 Remedial Wisdom (4)
Confronts the student with the totality of problems facing an educated person today and explores various attempts to solve them.
Prerequisite: Senior standing or permission of instructor.

NCC 334 Human Sexuality (4)
Explores notion that sexuality connotes totality of being — the full expression of femaleness and maleness. Various cultural paradigms of the nature of sexuality are explored; the biosocial nature of sexuality and the functional identity of mind and body are examined.

NCC 336 Ways of Knowing (4)
Intensive exploration of personal integration and growth, bridging reading with experience, through the study of humanistic psychology, transactional analysis, bio-energetic theory and technique, and Jungian syntheses.
Prerequisite: Permission of instructor.

NCC 351 The Geography of Values (4)
Explores community values in the context of change and development. Changing values and community development in local areas are researched and analyzed for a deeper understanding of the techniques and uses of social cartography.
Prerequisite: Previous NCC course work or permission of instructor.

NCC 400 Independent Research (2, 4)
Advanced interdisciplinary research on a topic of interest to the student. Student assumes initiative for planning research in conjunction with New Charter College faculty sponsor and approval of the New Charter College Executive Committee. Substantive, well-documented paper is required.
Prerequisite: Approved NCC contract.

CENTER FOR THE ARTS

Director: *Carl F. Barnes, Jr.*

Assistants to the director: *T. Andrew Aston, Walter Mark Hill*

Publicity manager: *Julie L. Glynn*

Interim booking manager: *Kristy Ann Mitchell*

Interim recital hall manager: *Rock Gunnoe*

The Center for the Arts is an administrative unit of the College of Arts and Sciences. It develops, coordinates and promotes the university's public undergraduate performances and presentations in art history, dance, film studies, mime, music, studio art and theatre.

Each academic year, the center sponsors a subscription series of theatrical, musical and dance events featuring guest artists and groups, and faculty and students from the Department of Music, Theatre and Dance.

The center also sponsors special arts and arts-related events, including annual summer arts camps for youngsters, workshops throughout the year in various arts disciplines, special presentations at Meadow Brook Hall and art tours to foreign countries.

The center works with the university's professional arts enterprises, the Meadow Brooks, to promote cooperation between Oakland University's professional and academic arts undertakings.

SCHOOL OF BUSINESS ADMINISTRATION

Dean: *Ronald M. Horwitz*

Office of the Dean: *John E. Tower, associate dean; Kathleen G. Clark, undergraduate academic advising coordinator; Carole J. Terry, undergraduate academic adviser; Julie Dziekan-Schueren, administrator of the Master of Business Administration program; Frank P. Cardimen, director, Center for Economic Development and Corporate Services*

Department chairs: *Daniel N. Braunstein, Management and Marketing; David P. Doane, Management Information Systems and Quantitative Methods; David D. Sidaway (acting chair), Accounting and Finance; Ronald L. Tracy, Economics*

Professors: *Eleftherios N. Botsas, Daniel N. Braunstein, Joseph E. Champagne, Alice C. Gorlin, Karl D. Gregory, Ronald M. Horwitz, Robbin R. Hough, Sid Mittra, Miron Stano*

Associate professors: *David P. Doane, Augustin K. Fosu, Oded Izraeli, Paul O. Kingstrom, Kevin J. Murphy, Ravi Parameswaran, Alan Reinstein, Howard S. Schwartz, Ronald L. Tracy, John E. Tower, Mary P. Van Sell*

Assistant professors: *Lizabeth A. Barclay, Sadik Cokelez, Theresa M. Cross, J. David Diltz, Sherman T. Folland, Harold Hotelling, Scott A. Monroe, Soo-Young Moon, J. Austin Murphy, Kevin Nathan, Eileen Peacock, Gerald V. Post, Maureen H. Smith, Floyd G. Willoughby*

Special instructor: *David D. Sidaway*

Adjunct professors: *Rikuma Ito, Paul F. Lorenz*

Visiting assistant professors: *Paul W.F. Chao, Margit A. Jackson, Anandi P. Sahu*

Visiting instructors: *Bruce W. Himrod, Amir M. Hormozi, Barbara T. Kiwicz, Robert T. Kleiman, Thomas W. Lauer*

Lecturers: *David W. Essig, Robert J. Forbes, Jacquelynne K. Genova, David Medved, Matthew Mendrygal, Douglas R. Munro, Dennis M. Polak, Robert H. Schappe, Thomas H. Williams*

Board of Visitors

The Board of Visitors provides a direct link between the industrial community and the School of Business Administration. The board is comprised of outstanding corporate and professional leaders from the Detroit metropolitan area. Board members assist the faculty on several projects and provide consultation on goals and objectives, curricula designs and research programs.

The board members are:

Thatcher W. Root, Vice President, Manley, Bennett, MacDonald & Company; chairman, Board of Visitors
James A. Aliber, Chairman of the Board and Chief Executive Officer, First Federal of Michigan
Joseph A. Campana, Vice President Marketing, Chrysler Corporation
Keith E. Crain, Vice Chairman, Crain Communications
Bernard M. Fauber, Chairman of the Board and Chief Executive Officer, Kmart Corporation
Glen W. Fortinberry, President and Chairman of the Board, Ross Roy, Incorporated
William R. James, President, James Associates
J. Michael Losh, General Manager, Pontiac Motor Division, General Motors Corporation
Eugene A. Miller, President, Comerica, Incorporated
Kenneth E. Myers, President, William Beaumont Hospital Corporation
Harold A. Poling, President and Chief Operating Officer, Ford Motor Company

Alan E. Schwartz, Senior Partner, Honigman, Miller, Schwartz and Cohn
Paul G. Stern, President and Chief Operating Officer, Burroughs Corporation
Albert A. Thiess, Jr., Managing Partner, Coopers & Lybrand

Undergraduate Programs

The School of Business Administration offers undergraduate programs for students interested in obtaining the skills and information needed to manage profit-making businesses, not-for-profit enterprises.(e.g., health care institutions, educational institutions, cooperative societies) and governmental units. The programs include:

Bachelor of Arts, with a major in economics (offered in conjunction with the College of Arts and Sciences; see page 68 for a description of this program), and

Bachelor of Science, with majors in accounting, economics, finance, general management, human resources management, management information systems or marketing; and minors in accounting, economics, finance, international management, management or quantitative methods

The Master of Business Administration Degree

The School of Business Administration offers the Master of Business Administration (MBA) degree for superior undergraduate students in any major, including business and management. The MBA is a professional program in business designed for individuals who did not major in business or management at the undergraduate level.

Accelerated program

Oakland University undergraduates working on majors other than those in the management areas may earn both an undergraduate degree and an MBA by completing an accelerated program. To be eligible, students should have a grade point average in the top 15 percent of students in their major. Students may apply to the program after they have completed 80 undergraduate credits.

For more information, see the *Oakland University Graduate Catalog.*

Cooperative Education

Students in the School of Business Administration who want to combine relevant work experience with their college educations are encouraged to participate in the university's cooperative education program. Co-op students alternate at least two four-month periods of paid, full-time work experience with four-month periods of full-time classwork. Students are placed in jobs similar to those held by recent Oakland University graduates in business, not-for-profit or governmental organizations. On occasion, unpaid internships that provide work experience also are available.

Awards and Honors

In addition to being eligible for honors available to all Oakland University undergraduates, students in the School of Business Administration are eligible for the following:

American Marketing Award: Each year, the Detroit chapter of the American Marketing Association awards certificates of achievement for scholarship and service to two marketing majors.

Ernst & Whinney Award: Each year, the junior accounting student who has demonstrated the greatest academic and leadership potential is selected by the accounting faculty to receive a cash award from the international accounting firm of Ernst & Whinney. The student is honored at a meeting of accounting students, hosted by Ernst & Whinney.

Financial Executives Institute Award: This award is presented annually to the undergraduate accounting or finance student who has demonstrated the highest standard of academic excellence. The student is honored at a meeting of the Detroit chapter of the Financial Executives Institute. Selection is made by the accounting and finance faculty of the School of Business Administration.

Omicron Delta Epsilon: Omicron Delta Epsilon is a national honors society for promising economics students. Selection for membership is made by the economics faculty.

Ross Roy, Inc. Award: Ross Roy, Inc. annually awards a certificate to the marketing student who has demonstrated the most outstanding achievement in the field of advertising and promotional strategy.

Wall Street Journal Student Achievement Award: This award is presented annually to the graduating senior who has demonstrated the greatest academic and leadership achievement in the School of Business Administration. Selection is made by the faculty.

School honors are awarded by the School of Business Administration to students with a minimum grade point average of 3.33 in courses offered in the school.

General Requirements for the Bachelor of Science Degree

The curriculum described shall be followed by students entering the School of Business Administration beginning with the fall 1986 semester. Students enrolled prior to fall 1986 may choose to satisfy either the degree requirements listed in this catalog or those in the catalog of the academic year in which they were admitted to the School of Business Administration, provided that catalog is not more than six years old at the time of graduation. Students who transfer to the School of Business Administration after admission to the university or who are readmitted to the university are required to follow the requirements of the catalog in effect at the time they transfer or are readmitted.

To ensure they have met all requirements, students should seek a final program audit from one of the school's academic advisers the semester before the semester in which they plan to graduate. The responsibility for meeting graduation requirements rests with the student.

The Bachelor of Science degree requirements follow, after which the specific requirements of business administration majors in accounting, finance, general management, human resources management, management informations systems and marketing are detailed. The requirements for the economics major are listed separately.

Each student must:

1. Complete at least 128 credits.
2. Complete at least 32 credits at Oakland University, of which at least 16 credits must be in courses offered by the School of Business Administration. Of these 16 credits, at least 8 credits must be in the student's major.
3. Complete at least 32 credits at the 300 level or above.
4. Take, at Oakland University, the last 8 credits needed to complete baccalaureate requirements.
5. Earn a cumulative grade point average of at least 2.00 in courses taken at Oakland University or the School of Business Administration.
6. Obtain certification of writing proficiency, as described on page 25.
7. Complete the university general education requirement (see pages 25-28).
8. Be admitted to major standing.
9. Complete the requirements for one of the majors in the School of Business Administration.
10. Be in substantial compliance with all legal curricular requirements.

Requirements for the Business Administration Program

The business administration program enables students to combine intensive study of a functional area of business with a broad background in management. This combination will allow

students to understand and manage changing situations in profit-oriented enterprises or not-for-profit organizations, both public and private. In this program, a general education is combined with rigorous analytical training, enabling students to handle the increasingly complex and changing problems faced by managers.

The business administration program offers students the opportunity to major in general management or in one of the functional areas of business: accounting, finance, human resources management, marketing or management information systems. The program leads to a Bachelor of Science (B.S.) degree. (In addition to the majors listed above, the School of Business Administration offers a Bachelor of Science degree with a major in economics. See page 204.)

The business administration degree program consists of four parts: general education, the precore, the core and the major. Students in this program must satisfy the specific requirements of each of these parts and must earn a minimum of 128 credits.

I. General education requirements

Students in the School of Business Administration must satisfy the university general education requirements, described on pages 25-28. These requirements may be summarized as one course from the approved lists in each of the following categories: arts; literature; language; western civilization; international studies; social sciences (School of Business Administration students cannot use ECN courses to satisfy this requirement); natural science and technology; and mathematics, logic and computer science (this category is automatically satisfied by the school's precore mathematics requirement).

II. Precore requirements

As preparation for the various majors of the business administration program, students must successfully complete a program that consists of courses in writing, mathematics, computer use, economics, accounting and statistics.

The required precore courses are:

RHT 100-101	Composition I-II (or complete the writing proficiency requirement in another manner)	0-8
MTH 111-112*	Elementary-Intermediate Algebra (if required, based on the math placement test)	0-8
MTH 121	Linear Programming, Elementary Functions	4
MTH 122	Calculus for Social Sciences (or MTH 154)	4
CSE 125	Introduction to Computer Use	4
ECN 200	Principles of Macroeconomics	
and ECN 201	Principles of Microeconomics	
or ECN 210	Principles of Economics (a 6-credit course which covers the material of both ECN 200 and ECN 201)	6-8
ACC 200	Introductory Financial Accounting	4
ACC 210	Managerial and Cost Accounting	4
QMM 250	Statistical Methods	6
		32-50

The freshman and sophomore years of study for students pursuing the business administration program will be devoted to the successful completion of the general education and precore course requirements. Special emphasis should be given during the freshman year to the completion of the university composition requirement and steady progress in the mathematics sequence. Once sophomore status (28 credits) has been achieved, students will begin work on the economics, accounting and statistics requirements.

*See special information concerning these courses on page 97.

Admission to major standing in business administration

To be eligible to take most 300-level courses in the core and major programs (excluding ECN courses) and all 400-level courses, students must be admitted to major standing in the School of Business Administration. Courses for which major standing is not a prerequisite are ACC 310, ENG 382, MKT 302, ORG 330 and all ECN courses.

Admission to major standing is selective. The minimum requirements for consideration are:

1. Student's admissibility to and retention in the university.
2. Completion of the writing proficiency requirement.
3. A minimum cumulative grade point average of 2.80 or above in all courses taken for the precore program at Oakland University **and at all previous colleges.**
4. A minimum grade of 2.0 in each of the following precore courses or their equivalents: MTH 121, MTH 122, CSE 125, ECN 200 and ECN 201 (or ECN 210), ACC 200, ACC 210 and QMM 250.
5. Submission of an "Application for Major Standing" for the desired major **during the first month** of the semester in which the student expects to complete the precore requirements.

III. Core program

Each of the business major programs require the completion of a common core of courses introducing students to the functional areas of business. The core courses required in all business administration major programs are:

ENG 382	Business and Technical Writing (or ENG 380)	4
ECN 301	Intermediate Microeconomics	4
ORG 330	Introduction to Organizational Behavior	4
ORG 331	Organizational Behavior Applied to Management	4
FIN 322	Managerial Finance I	4
MIS 300	Management Information Systems	2
MKT 302	Marketing	4
QMM 343	Operations Management	4
MGT 435	Management Strategies and Policies	4
		34

All courses in the core program require major standing except ENG 382, ECN 301, ORG 330 and MKT 302. MGT 435 is a course that integrates the material in the core program and may be taken only after students have completed the rest of the core program.

IV. Major programs

Students complete their program by taking 16-22 additional credits specified in their major area. The junior and senior years will be devoted to the successful completion of the requirements of the core and major. Majors from which business administration students may choose are detailed below. Double majors are permitted in all areas except general management. No more than 4 credits of independent study (490 courses) may be used to meet the major elective requirement.

Requirements for the major in accounting

Major adviser: *David D. Sidaway*

The major in accounting prepares students for an accounting or auditing career in the public or private sector of profit-oriented or not-for-profit enterprises.

To fulfill requirements for the accounting major, students must be admitted to major standing in accounting, complete the core program and earn the 30 credits specified below with a grade of 2.0 or better in each course.

Required precore courses:		**Credits**
ACC 200	Introductory Financial Accounting	4
ACC 210	Managerial and Cost Accounting I	4

Required major courses:		
ACC 310	Intermediate Financial Accounting I	3
ACC 311	Intermediate Financial Accounting II	3
ACC 312	Advanced Financial Accounting	4
ACC 410	Managerial and Cost Accounting II	4
Electives — Choose 8 credits:		
ACC 411	Auditing	
ACC 412	Government and Not-for-profit Accounting	
ACC 413	Regulatory Agencies and the Accounting Profession	
ACC 414	Accounting Theory	
ACC 415	Tax Accounting	
ACC 416	Contemporary Accounting Issues	
ACC 418	Computer-based Accounting Systems	
ACC 420	Advanced Auditing Topics	
ACC 421	Advanced Tax Topics	
FIN 419	International Accounting and Financial Management	8
		30

Because of their specific requirements, students who plan to take a professional accounting examination (CPA, CMA or CIA) should discuss their course selection with an accounting faculty member before enrolling in 400-level accounting courses.

Note: Fifth Year Option. Although it is not required, the School of Business Administration suggests that students planning to take the Certified Public Accounting (CPA) examination consider taking an additional 32 credits of study in accounting, as recommended by the American Institute of Certified Public Accountants. During this fifth year, students should take the following 32 credits: 20 credits of 400-level accounting courses (in addition to the courses required for the four-year accounting major), FIN 422, MGT 424 and an additional quantitative methods course.

Requirements for the major in finance

Major adviser: *J. Austin Murphy*

The major in finance leads to an understanding of the theoretical foundations of finance and develops the specific skills, modes of analysis and institutional background useful to work in the accounting and finance areas of profit-making businesses or not-for-profit enterprises.

To fulfill requirements for the finance major, students must be admitted to major standing in finance, complete the core program and earn a minimum of 22 credits, as specified below, with a grade of 2.0 or better in each course.

Required core courses:		**Credits**
FIN 322	Managerial Finance I	4
Required major courses:		
ACC 310	Intermediate Financial Accounting I	3
ECN 321	Money, Credit and the Economy	4
FIN 421	Investment Analysis	4
FIN 422	Managerial Finance II	4
Electives — Choose one course from the following (some may require additional prerequisites):		
ACC 311	Intermediate Financial Accounting II	
ACC 410	Managerial and Cost Accounting II	
ACC 415	Tax Accounting	
ECN 373	International Economics and Finance	
ECN 456	Public Finance	
FIN 419	International Accounting and Financial Management	3-4
		22-23

Requirements for the major in general management

Major adviser: *Floyd G. Willoughby*

The general management major allows students to take advanced work in several functional areas of business. Students may not earn a double major in general management and another major of the School of Business Administration.

To fulfill requirements for the general management major, students must be admitted to major standing in general management, complete the core program and earn 16 additional credits in electives with a grade of 2.0 or better in each course. The electives may be chosen from any area within the School of Business Administration (courses beginning with ACC, ECN, FIN, MGT, MIS, MKT, ORG or QMM) and must be chosen from courses numbered 300 or higher; at least 8 credits must be at the 400-level. No more than 4 credits of independent study (490 courses) may be used to meet the major elective requirement.

Requirements for the major in human resources management

Major adviser: *Daniel N. Braunstein*

The major in human resources management develops the skills needed to administer the personnel functions of organizations. It is designed primarily for students who intend to pursue careers in administration, personnel management, labor relations or wherever the management of people at work is a central concern.

Emphasis is placed on developing an intensive understanding of the tools and techniques needed to acquire, develop and utilize an organization's human resources. The program includes broad coverage of such topics as personnel psychology, personnel administration and labor/management relations, in addition to providing basic knowledge of organizational behavior.

To fulfill requirements for the human resources management major, students must be admitted to major standing in human resources management, complete the core program and earn the 28 credits specified below with a grade of 2.0 or better in each course.

Required core courses:		**Credits**
ORG 330	Introduction to Organizational Behavior	4
ORG 331	Organizational Behavior Applied to Management	4
Required major courses:		
ORG 430	Organizational Research Methods	4
MGT 433	Labor-Management Relations	4
ORG 434	Management of Human Resources	4
Electives — Choose two courses:		
ORG 431	Leadership and Group Performance	
ORG 432	Motivation and Work Behavior	
ORG 480	Topics in Organizational Behavior	
ECN 468	Labor Economics	8
		28

Requirements for the major in management information systems

Major adviser: *David P. Doane*

The major in management information systems specifies a set of courses that will give students more facility with computer languages, with the use of computers in handling information processing in organizations, with systems analysis and with the use of computers in management decision making and support of organizational functions.

To fulfill the requirements for the major in management information systems, students must be admitted to major standing in management information systems, complete the core program and complete the 26 credits specified below with a grade of 2.0 or better in each course.

Required precore and core courses:		**Credits**
CSE 125	Introduction to Computer Use	4
MIS 300	Management Information Systems	2

Required major courses:

CSE 130	Introduction to Computer Programming (Pascal)	4
or CSE 132		
CSE 220	Computer-based Information Systems I (COBOL)	4
MIS 316	Systems Analysis	4

Electives — Choose two courses, at least one of which is a 400-level MIS course:

MIS 400	Analysis of Complex Systems
MIS 404	Data Base Management/Data Communication
MIS 407	Computer Systems for Problem Solving
MIS 436	Information Processing and Decision Making
MIS 444	Simulation in Management
ACC 418	Computer-based Accounting Systems
QMM 452	Forecasting
CSE 221	Computer-based Information Systems II (COBOL)
CSE 340	File Systems Design
CSE 345	Data Base Design and Implementation

8

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Requirements for the major in marketing

Major adviser: *Paul W.F. Chao*

The major in marketing develops the specific skills, modes of analysis and background to work in the marketing area of a profit-making business or not-for-profit enterprise.

To fulfill the requirements for the major in marketing, students must be admitted to major standing in marketing, complete the core program and complete the 24 credits specified below with a grade of 2.0 or better in each course.

Required core course:		**Credits**
MKT 302	Marketing	4
Required major courses:		
MKT 353	Marketing Management	4
MKT 404	Consumer Behavior	4
MKT 405	Marketing Research	4
Electives: Choose two courses:		
MKT 406	Promotional Strategy	
MKT 420	Distribution Channels Management	
MKT 430	Sales Management/Sales Promotion	
MKT 450	International Marketing	
MKT 480	Seminar in Marketing	8
		24

Bachelor of Science With a Major in Economics

Major adviser: *Ronald L. Tracy*

The curriculum for the major in economics combines the concepts and tools of economic analysis, a broad general education and courses in other areas of interest to the student. Students learn how economic analysis can be applied to major problems facing individuals, businesses, the nation and the world today.

Besides preparing the student for a career in economics, an education in economics is excellent preparation for entry into law school, a graduate school of public administration or an M.B.A. program. Economics is a flexible choice for students seeking a rigorous, well-respected and relevant major without specializing in a narrowly defined area. To be employed as a professional economist or an economics instructor, a student normally will need to attend graduate

school and obtain at least a master's degree in economics.

For economics majors, the Bachelor of Science degree offers a more quantitative and business-oriented approach to economics than the Bachelor of Arts economics major, offered through the College of Arts and Sciences (see page 68).

Requirements for the Bachelor of Science degree with a major in economics

To earn the Bachelor of Science degree with a major in economics, students must complete 128 credits as follows:

		Credits
English composition:		
RHT 100-101	Composition I-II (or complete the writing proficiency requirement in another manner)	0-8
ENG 382	Business and Technical Writing (or ENG 380)	4
General education requirements		28

(As detailed on pages 25-28, with the exceptions listed for students in the School of Business Administration on page 200).

Cognate courses:		
MTH 111-112*	Elementary-Intermediate Algebra (if necessary)	0-8
MTH 121	Linear Programming, Elementary Functions	4
MTH 122	Calculus for Social Sciences (or MTH 154)	4
CSE 125	Introduction to Computer Use (or CSE 130 or CSE 132)	4
ACC 200	Introductory Financial Accounting	4
QMM 250	Statistical Methods	4
FIN 322	Managerial Finance I	4
Quantitative methods course — choose one:		
ECN 405	Econometrics	4
QMM 452	Forecasting	
Required core courses:		
ECN 200	Principles of Macroeconomics	
and ECN 201	Principles of Microeconomics	
or ECN 210	Principles of Economics (a 6-credit course that covers ECN 200 and ECN 201)	6-8
ECN 301	Intermediate Microeconomics	4
ECN 302	Intermediate Macroeconomics	4

Electives: 16 additional credits in ECN courses numbered 300 or higher, 8 credits of which must be in courses at the 400 level. No more than 4 credits in ECN 490 may be counted as economics electives. 16

General electives: 18-36

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The suggested economics precore program sequence is the same as the one suggested on page 200 for business students.

*See special information concerning these courses on page 97.

Admission to major standing in economics

Admission to major standing in economics is required before a student may graduate. The minimum requirements for major standing are:

1. Student's admissibility to and retention in the university.
2. Completion of the writing proficiency requirement.
3. Completion of the following courses, or their equivalents, with a grade of 2.0 or better in each course: MTH 121, MTH 122, CSE 125 (or CSE 130 or CSE 132), ECN 200 and ECN 201 (or ECN 210), and QMM 250.

4. Approval of an "Application for Major Standing."

Although ECN 301 and ECN 302 are not required for admission to major standing in economics, students must earn a grade of 2.0 or better in them in order to graduate.

Minors

The School of Business Administration offers six minors for students who want to combine their majors with an introduction to the skills, analytical techniques and institutional material of economics or an area of business.

To earn a minor, students must complete the prescribed courses with a grade of 2.0 or better in each course. Students majoring in programs offered outside the School of Business Administration may take 300- and 400-level courses if they meet the prerequisites (except for major standing) and if there is space in the class. School of Business Administration students have priority over students from outside the school when registering for courses.

All students who are not majors in the School of Business Administration and economics majors in either the School of Business Administration or the College or Arts and Sciences, whether they have applied for a minor or not, are limited to no more than 28 credits in business courses. The maximum of 28 credits includes courses taken at Oakland University and all previous colleges. Economics (ECN) courses, QMM 250 and QMM 452 are excluded from this requirement. Therefore, students from majors outside the business administration program may not earn more than 28 credits in transfer plus Oakland credits in ACC, FIN, MGT, MIS, MKT, ORG or QMM courses (excluding those noted above).

Students may earn only one minor from the School of Business Administration. Business administration majors may earn minors only in economics, international management or quantitative methods. Transfer students planning to earn a minor must earn at least 12 credits toward the minor at Oakland University; at least 8 of these 12 credits must be in courses at the 300-level or higher.

Minor in accounting

Coordinator: *David D. Sidaway*

The minor in accounting consists of the following 20 credits and any prerequisites for these courses: ACC 200, ACC 210 and 12 additional credits in accounting (ACC) courses. This minor is not available to students majoring in programs offered by the School of Business Administration.

Minor in economics

Coordinator: *Ronald L. Tracy*

The minor in economics consists of a minimum of 18 credits, described as follows, and any prerequisites for these courses: ECN 150 or ECN 210 or both ECN 200 and ECN 201, and 12 additional credits in economics (ECN) courses (16 credits if the student took ECN 150). This minor is open to all students except economics majors.

Minor in finance

Coordinator: *Karl D. Gregory*

The minor in finance consists of the following 22 credits and any prerequisites for these courses: ACC 200, QMM 250, FIN 322 and 8 additional credits in finance (FIN) courses. This minor is not available to students majoring in programs offered by the School of Business Administration.

Minor in international management

Coordinator: *Eleftherios N. Botsas*

The minor in international management consists of a minimum of 18 credits, described as follows, and any prerequisites for these courses: Second-year proficiency in a foreign language, ECN 210 or both ECN 200 and ECN 201, ECN 373, MGT 423 and one course chosen from ECN 326, ECN 341, ECN 350, FIN 419 and MKT 450. This minor is open to all majors.

Minor in management

Coordinator: *Scott A. Monroe*

The minor in management consists of a minimum of 22 credits, described as follows, and any prerequisites for these courses: ECN 210 or both ECN 200 (or ECN 150) and ECN 201, ACC 200, ORG 330 and 8 additional credits in 300- and 400-level electives (ACC, FIN, MGT, MIS, MKT, ORG or QMM courses) offered by the School of Business Administration. Economics (ECN) 300- and 400-level courses are not acceptable electives for this minor. Economics majors, both B.A. and B.S. candidates, are eligible for this minor but students majoring in other programs offered by the School of Business Administration are not.

Minor in quantitative methods

Coordinator: *David P. Doane*

The minor in quantitative methods consists of a minimum of 20 credits, described as follows, and any prerequisites for these courses: CSE 130 or CSE 132, QMM 250 or STA 226, and three courses chosen from QMM 343, ECN 405, QMM 440, QMM 448, QMM 452, STA 323 and STA 324. This minor is open to all majors.

Unsatisfactory Performance

Numerical grades less than 2.0 and U grades are considered substandard. A course in which a grade below 2.0 has been earned may not be subsequently passed by competency examination or independent study. A student within the School of Business Administration who repeats a course in which a 2.0 is required must repeat that course at Oakland University, or with prior approval, at any regionally accredited four-year institution, in order that credit be granted toward a degree in the School of Business Administration.

Prerequisites

In planning their schedules, students should ensure that they satisfy prerequisite and corequisite conditions for courses. Students who have registered for courses for which they do not meet the conditions will have their registration canceled and will be liable for any financial penalties incurred.

Course Offerings

Following are descriptions of the courses offered by the School of Business Administration. Required precore and core courses for students majoring in these programs are generally offered each fall and winter semester and during either the spring or summer session.

The 300- and 400-level courses are designed for students with major standing in the School of Business Administration. These courses have major standing as a prerequisite, except for ACC 310, MKT 302, ORG 330 and all economics (ECN) courses. The 300-level courses should be taken during the junior year (59-90 credits). Nonbusiness majors may elect 300- or 400-level courses if they meet the prerequisites (except for major standing) and if there is space in the class. School of Business Administration students have priority over majors from outside the school when registering for these courses.

Students in majors other than those in the business administration program (i.e., accounting, finance, general management, human resources management, management information systems and marketing) may not earn more than 28 credits in ACC, FIN, MGT, MIS, MKT, ORG and QMM courses. This maximum of 28 business credits includes credits earned at Oakland University and all other colleges but excludes economics (ECN) courses, QMM 250 and QMM 452.

ACCOUNTING

ACC 200 Introductory Financial Accounting (4)
Introduction to accounting information as an aid to decision-making for external users of financial statements. Students learn how to measure and record accounting data, prepare financial statements and analyze published financial accounting information.
Prerequisite: Sophomore standing.

ACC 210 Managerial and Cost Accounting I (4)
Analysis of accounting methods providing data for optimal managerial decisions, implementation and control. Topics include cost allocation; cost, volume and price relationship; product cost accounting and control systems; operations and capital budgeting, and related behavioral, reporting and information processing aspects.
Prerequisite: ACC 200.

ACC 310 Intermediate Financial Accounting I (3)
A study of financial accounting topics, including accounting valuation and reporting practices. Three major areas examined include financial accounting theory, current and noncurrent assets, and current and noncurrent liabilities.
Prerequisite: ACC 200 and ACC 210.

ACC 311 Intermediate Financial Accounting II (3)
A continuation of ACC 310. Major financial accounting areas examined include stockholders' equity, dilutive securities, investments, income measurement issues and the preparation and analysis of financial statements.
Prerequisite: ACC 310 and major standing.

ACC 312 Advanced Financial Accounting (4)
Topics include accounting and reporting for foreign operations, partnerships, consolidated entities, interim financial statements, segments of business enterprises, foreign operations, trusts and estates.
Prerequisite: ACC 311 and major standing.

ACC 410 Managerial and Cost Accounting II (4)
An analysis of available procedures and techniques to sharpen accounting analyses for managerial planning and control. Extends subjects introduced in ACC 210 to nonmanufacturing firms, decentralized firms, transfer pricing and segment performance measurement.
Prerequisite: ACC 210, major standing and senior standing.

ACC 411 Auditing (4)
Introduction to the objectives, techniques and standards of internal and external audits of the accounts of an enterprise. Generally accepted auditing standards will be critically examined.
Prerequisite: QMM 250, ACC 312 and major standing.

ACC 412 Government and Not-for-Profit Accounting (2)
The characteristics of not-for-profit entities are analyzed and used to define the basic concepts of accounting for funds. Accounting and reporting principles applicable to governmental units, hospitals, schools, eleemosynary and other nonprofit entities are discussed.
Prerequisite: ACC 311 and major standing.

ACC 413 Regulatory Agencies and the Accounting Profession (2)
The nature, origin and workings of the SEC, ICC and other agencies are examined. The legal framework, registration and reporting requirements, professional liability and the continuing issue of establishing generally accepted accounting principles are studied.
Prerequisite: ACC 311 and major standing.

ACC 414 Accounting Theory (4)
Selected topics of current interest in accounting theory. Opinions of the Accounting Principles Board, the Financial Accounting Standards Board and similar standard-setting committees of the accounting profession will be examined.
Prerequisite: ACC 312 and major standing.

ACC 415 Tax Accounting (4)
The concepts of taxation. The essential logic underlying the federal tax laws will be explored. The class will teach students to analyze individual and corporate income tax laws, rather than how to prepare tax returns.
Prerequisite: ACC 311 and major standing.

ACC 416 Contemporary Accounting Issues (4)
An examination of the changes in accounting associated with infusions of theories of other disciplines: behavioral science, organizational theory, economic theory and sociology. Also considered are changes in the role of the accountant. The course may be repeated.
Prerequisite: ACC 312 and major standing.

ACC 418 Computer-based Accounting Systems (4)
A study of the use of accounting information as part of a total management information system. Topics include financial controls, transaction data processing, internal security and auditing. Covers computer hardware, software and data systems analysis.
Prerequisite: ACC 200, MIS 300 and major standing.

ACC 420 Advanced Auditing Topics (2)
Examination of advanced topics in auditing. Emphasizes philosophy, standards, concepts and problem areas.
Prerequisite: ACC 411 and major standing.

ACC 421 Advanced Tax Topics (2)
Examination of advanced topics in tax accounting.
Prerequisite: ACC 415 and major standing.

ACC 490 Independent Study (2, 4)
Qualified and highly motivated students may engage in individual research, directed readings or group study under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

ECONOMICS

ECN 150 Basic Economics (4)
Survey of economics and its application to problems faced by societies, firms and individuals. Includes both analytical and institutional aspects of economics. Intended for students not planning to major in economics or business. *Satisfies the university general education requirement in social science.*
Prerequisite: High school algebra.

ECN 200 Principles of Macroeconomics (4)
Examines the methodology of economics, scarcity, opportunity cost, supply and demand, market processes, determination of national income, fiscal policy, money and banking, monetary policy, inflation and unemployment, trade and international adjustments, development and alternative economic systems. Not open to students who have completed ECN 150. *Satisfies the university general education requirement in social science.*
Prerequisite: High school algebra and sophomore standing.

ECN 201 Principles of Microeconomics (4)
Examines elasticity, markets, theory of consumer demand, market failures, organization of the firm, production and cost in the long and short runs, competition, externalities, legal and regulatory environment of business.
Prerequisite: ECN 200 or ECN 150.

ECN 210 Principles of Economics (6)
Principles of macroeconomics and microeconomics, covering the same topics as ECN 200 and ECN 201 combined, but at an accelerated pace. Intended for highly motivated students with good writing and math ability. Not open to students who have completed a previous college economics course. *Satisfies the university general education requirement in social science.*
Prerequisite: High school algebra, sophomore standing and a GPA of 3.00 or better.

ECN 301 Intermediate Microeconomics (4)
Examines consumer behavior, cost functions, constrained optimization, decisions under uncertainty, price and output determination in competitive markets, the basis for regulatory law and implications of microeconomic decisions for the efficiency of the market economy. Case studies will be analyzed.
Prerequisite: ECN 201 or ECN 210, and MTH 122, or permission of instructor.

ECN 302 Intermediate Macroeconomics (4)
Construction, analysis and interpretation of models of aggregate economic behavior, including the policy implications of alternative models, international interrelationships, assessment of contemporary controversies in national policy and introduction to large econometric models.
Prerequisite: ECN 201 or ECN 210, and MTH 122, or permission of instructor.

ECN 309 Urban Economic Problems (4)
Survey of contemporary urban economic problems: location and migration patterns, local public services and public finance in politically fragmented metropolitan areas, urban poverty and crime, housing, blight and renewal, quality of life and transportation. Not open to students who have taken ECN 409.
Prerequisite: ECN 150 or ECN 201 or ECN 210.

ECN 310 Economics of the Environment (4)
Application of the tools of economic analysis to problems of energy, ecology and the environment. Topics include externalities and public goods, optimum use of fixed national resources, limits to economic growth and ecological aspects of principal pollution problems.
Prerequisite: ECN 150 or ECN 201 or ECN 210.

ECN 321 Money, Credit and the Economy (4)
The course focuses on three areas: an introduction to banking and financial institutions, study of the U.S. money and capital markets, and the study of money's impact on the nation's economy.
Prerequisite: ECN 150 or ECN 201 or ECN 210.

ECN 326 Economic Development (4)
Application of the tools of economic analysis to the problems of economic development and growth.
Prerequisite: ECN 150 or ECN 201 or ECN 210.

ECN 328 American Economic Development (4)
Models and case studies of selected events in the growth and development of the American economy, from colonial times to the present. Emphasizes the evolution of historical thought under the impact of economic analysis.
Prerequisite: ECN 150 or ECN 201 or ECN 210.

ECN 338 Economics of Human Resources (4)
Survey of the nature of labor markets, education and investment in human capital, unemployment, geographic and occupational mobility of labor, and effects of race, sex and age in labor markets.
Prerequisite: ECN 150 or ECN 201 or ECN 210.

ECN 341 The Soviet Economy (4)
The history of Soviet economic development; analysis of the principles of operation of the Soviet economy; the relationship between administrative structure and decision-making problems of resource allocation; evaluation of Soviet economic performance and economic reforms.
Prerequisite: ECN 150 or ECN 201 or ECN 210.

ECN 350 Comparative Economic Systems (4)
Comparative analysis of alternative forms of economic organization. The relationships between the economic system and resource allocation, pricing, income distribution and growth. Capitalism, market socialism and central planning are emphasized.
Prerequisite: ECN 201 or ECN 210 or permission of instructor.

ECN 373 International Trade and Finance (4)
An introduction to international trade and finance. Topics include the international economic and political systems, classical trade approaches, balance of payments, capital mobility, international money markets and banking, speculation, protectionism, income distribution, transfer of technology, regional blocs, economic warfare, trade and development, and the multinational firms. Not open to students who have taken ECN 473.
Prerequisite: ECN 201 or ECN 210 or permission of instructor.

ECN 378 Economic Anlysis of Law (4)
Economic analysis of basic institutions of legal systems. Emphasis is on laws that are not directly intended to regulate the economy, including property, contract, tort, criminal and procedural law. Labor and antitrust law will be discussed only tangentially.
Prerequisite: ECN 201 or ECN 210 or permission of instructor.

ECN 385 Industrial Organization (4)
The structure of American industry and the factors affecting it, with emphasis on economies of scale; barriers to entry; structure-behavior relationships, including pricing, product differentiation and technical change; evaluation of performance, antitrust and regulation.
Prerequisite: ECN 201 or ECN 210 or permission of instructor.

ECN 405 Econometrics (4)
Estimation and testing of economic models using regression techniques. Includes experience with computer "packages," analytical report writing and case studies. Topics include dealing with violations of regression assumptions, binary variables, autoregressive and distributed lag models and the structure of "large" simultaneous equations models.
Prerequisite: QMM 250 and ECN 301, or permission of instructor.

ECN 409 Urban Economics (4)
Survey of urban economics, location theory and migration patterns. Includes analysis of local public services and public finance, housing, quality of life, transportation and employment patterns. Not open to students who have taken ECN 309.
Prerequisite: QMM 250 and ECN 301, or permission of instructor.

ECN 414 Engineering Economics (2)
Financial accounting models, relevant costs, capital budgeting, present value, rate of return, payback, taxes, depreciation. Not open to business or economics majors.
Prerequisite: MTH 256 or APM 257.

ECN 418 Seminar in Economic Policy (4)
Analysis of economic policy. Topics vary but may include resource allocation, macroeconomic stability, economic growth, energy, public choice, global economic interdependence and the environment.
Prerequisite: ECN 301 and QMM 250, or permission of instructor.

ECN 456 Public Finance (4)
The role and impact of the public sector in a market economy. Includes expenditure determination, the basis of taxation in terms of equity, efficiency and flexibility, timing of cash flows, revenue source analysis, financing public debt and discussion of current problems.
Prerequisite: QMM 250 and ECN 301, or permission of instructor.

ECN 467 Economics of Health Care (4)
Application of the tools of economic analysis to the health care industry and government health care policy. Examines the impact of the special characteristics of health care and the medical services industry on the pattern of health care produced, its distribution and resource allocation within the industry.
Prerequisite: QMM 250 and ECN 301, or permission of instructor.

ECN 468 Labor Economics (4)
Economic analysis of the functioning of labor markets, with emphasis on investment in human capital, the role of education, unemployment, labor market differentiation by race, sex and age, the geographic and occupational mobility of labor, and the inflation/unemployment trade-off.
Prerequisite: QMM 250 and ECN 301, or permission of instructor.

ECN 473 Theory of International Trade and Finance (4)
An intensive approach to international specialization and the open economy. Topics include modern developments in trade models, trade and welfare, impacts of trade policies, open economy macroeconomics, balance-of-payments analysis, stability, the determination of exchange rates under different regimes.
Prerequisite: QMM 250 and ECN 301, or permission of instructor.

ECN 480 Seminar in Economic Theory (4)
Survey of topics in economic theory using mathematical models. Recommended for students planning graduate work in economics.
Prerequisite: QMM 250, ECN 301 and ECN 302, or permission of instructor.

ECN 490 Independent Study (2, 4)
Qualified and highly motivated students may engage in individual research, directed readings, or group study under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

FINANCE

FIN 322 Managerial Finance I (4)
The basic elements of managerial finance. Topics include: capital budgeting techniques, financial structure and analysis, the cost of capital and working capital management.
Prerequisite: ECN 201, ACC 200, QMM 250 and major standing.

FIN 419 International Accounting and Financial Management (4)
The application of the tools of accounting and financial analysis to cases and the problems of firms that have operations in several countries.
Prerequisite: FIN 322, ECN 373 and major standing.

FIN 421 Investment Analysis (4)
Study of the aspects of security analysis and portfolio theory. Four areas are covered: investment management and the money and capital markets; the analytical procedures for appraising securities; portfolio analysis; and the assessment of capital market efficiency.
Prerequisite: FIN 322 and major standing.

FIN 422 Managerial Finance II (4)
The application of the tools of financial analysis to specific cases in the financial management of corporate businesses and nonprofit enterprises.
Prerequisite: FIN 322 and major standing.

FIN 490 Independent Study (2,4)
Qualified and highly motivated students may engage in individual research, directed readings or group study, under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

MANAGEMENT

MGT 423 Managing the Multinational Firm (4)
Analysis of the scope, structure and environment — legal, social, political and economic — of the multinational firm, with emphasis on management strategies of planning, marketing, location and finance across cultural and national boundaries.
Prerequisite: ECN 301 or ECN 373 and major standing.

MGT 424 Business Law (4)
The study of the legal framework in which business decisions are made and the types of economic conflict and political activity that have created this framework. Topics include contracts, antitrust legislation, conflict resolution and regulatory agencies.
Prerequisite: ECN 201 or ECN 210, major standing and senior standing.

MGT 433 Labor/Management Relations (4)
Analysis of management/employee relations in modern industry. Topics include factors influencing the supply and demand for labor, evolution and governance of trade unions, collective bargaining and public policy.
Prerequisite: ECN 201, ORG 331 and major standing.

MGT 435 Management Strategies and Policies (4)
Managerial problem perception and the application of economics, statistics, organizational behavior, accounting, finance, marketing and quantitative methods to the systematic analysis of case studies.
Prerequisite: Major standing, completion of core program and senior status.

MGT 468 Health Care Management (4)
Application of the management tools of economics, statistics, organizational behavior, marketing, finance and quantitative methods to the systematic analysis of the management of health care institutions.
Prerequisite: Completion of management core program, ECN 467 and major standing.

MGT 480 Seminar: Current Business Topics (4)
The analysis of topics of current interest in management. Outside faculty and managers will participate in the seminar as an integral part of the course.
Prerequisite: Completion of the management core and major standing.

MGT 490 Independent Study (2, 4)
Qualified and highly motivated students may engage in individual research, directed readings or group study under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

MANAGEMENT INFORMATION SYSTEMS

MIS 300 Management Information Systems (2)
Examination of information support systems from the perspective of the manager as a user. Survey of the behavioral, organizational and systems theory foundations; the systems development process; and the integration of data processing, decision support systems, office, automation and telecommunications..
Prerequisite CSE 125, QMM 250 and major standing.

MIS 316 Systems Analysis (4)
Theory and practice of designing information systems to meet user needs, including problem investigation and the analysis, design and implementation of systems. Topics include the systems development cycle, system modeling techniques, interface to data base management systems, monitoring and control, review and maintenance, and project management. Includes case studies.
Prerequisites: MIS 300, CSE 130, ECN 301 and major standing, or permission of instructor.

MIS 400 Analysis of Complex Systems (4)
Modeling, instrumentation and control of complex systems. Emphasizes design, implementation and testing of information and control systems in unstructured and realistic contexts. Includes specification, evaluation and selection of hardware and software systems, ranging from applications in microcomputers to mainframes.
Prerequisite: ECN 301, MIS 316 and major standing.

MIS 404 Data Base Management/Data Communication (4)
Examination of the technology, organization, use, economics and administration of data base management systems (DBMS) and data communication systems. Topics include the logical organization, implementation and capabilities of a DBMS; the technology, design, control and use of wide areas and local area networks. Includes exercises using dBASE II or R:base 5000 or equivalent.
Prerequisite: CSE 130, MIS 300 and major standing.

MIS 407 Computer Systems for Problem Solving (4)
An advanced communications and problem solving course in which students learn to specify and design systems for computers. Consists of field studies by teams of students leading to computerized solutions of real world problems.
Prerequisite: MIS 316, eight credits in higher-level programming languages and major standing.

MIS 436 Information Processing and Decision Making (4)
Examines the design and implementation of decision support systems from the viewpoint of behavioral and organizational theory. Includes a critical review of theory and case studies taken from recent MIS literature.
Prerequisite: MIS 300, ORG 331 and major standing.

MIS 444 Simulation in Management (4)
Computer simulation models using GPSS or an equivalent simulation language, plus simulation exercises using standard programming languages. Implications of models and sensitivity analysis for forecasting, planning and decision making in the management environment are explored.
Prerequisite: CSE 130, MIS 300 and major standing.

MIS 490 Independent Study (2, 4)
Qualified and highly motivated students may engage in individual research, directed readings or group study under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

MARKETING

MKT 302 Marketing (4)
Analysis of the principles of marketing, marketing concepts and trends, and their relationship to other business principles. Special emphasis is placed on the study of the marketing mix.
Prerequisite: ECN 210 or ECN 201.

MKT 353 Marketing Management (4)
A study of the overall marketing strategies pertaining to problems experienced in today's economy. Uses the case study method to analyze these problems.
Prerequisite: MKT 302 and major standing.

MKT 404 Consumer Behavior (4)
Study of factors influencing consumer behavior, structuring and managerial use of consumer decision-making models. Examination of social, psychological and economic variables of buying behavior, including learning, motivation, attitude, personality, small group dynamics, demographic and economic factors and culture.
Prerequisite: MKT 302 and major standing.

MKT 405 Marketing Research (4)
Focuses on the generation and management of information in marketing decisions. Covers the evaluation of additional marketing information, how it is acquired and used, the manager's role in market research and the researcher's role in supplying marketing information.
Prerequisite: MKT 302, QMM 250 and major standing.

MKT 406 Promotional Strategy (4)
A study of the promotional tools of advertising, public relations, sales and sales promotion. Emphasis on identifying the factors that become the basis for promotional decisions.
Prerequisite: MKT 302 and major standing.

MKT 420 Distribution Channels Management (4)
Examination of the management of marketing channel relationships. Focuses on the characteristics and social, economic and political relationships among wholesalers, agents, retailers and the other agencies that comprise distribution channels.
Prerequisite: MKT 302 and major standing.

MKT 430 Sales Management/Sales Promotion (4)
Examination of the function of sales management. Emphasis on the role of analysis, decision making, strategy formation and the impact of the "suction" or pull strategy provided by sales promotion.
Prerequisite: MKT 302 and major standing.

MKT 450 International Marketing (4)
The application of marketing principles to problems associated with marketing products and services to different nations. Cases in international marketing will be analyzed.
Prerequisite: MKT 302, ECN 373 and major standing.

MKT 480 Seminar in Marketing (4)
Study of a selected topic or current marketing interest relevant to marketing management. Topics may include industrial marketing, retail management or any area not covered by a specific course.
Prerequisite: MKT 302 and major standing.

MKT 490 Independent Study (2,4)
Qualified and highly motivated students may engage in individual research, directed readings or group study under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

ORGANIZATIONAL BEHAVIOR

ORG 330 Introduction to Organizational Behavior (4)
The theoretical and empirical issues surrounding organizational management as it relates to individual and organizational processes; including perception, learning, motivation, communication, decision making, leadership, power and authority.
Prerequisite: Junior standing; QMM 250 recommended.

ORG 331 Organizational Behavior Applied to Management (4)
Examination of the theoretical and applied issues relevant to managing organizations, with an emphasis on the organizational topics of structure, planning, management information, control and decision making. Heavy emphasis is placed on managerial problem solving. A project analyzing and making recommendations for a real organization is required.
Prerequisite: ORG 330 and major standing.

ORG 334 Human Development in Organizations (4)
Examination of the organizational behavior field for non-business majors. Topics include human resources management, as well as applications of organizational behavior theory. For non-business majors only: Business majors should take ORG 434.
Prerequisite: Junior standing.

ORG 430 Organizational Research Methods (4)
Use of various behavioral research strategies as input for managerial problem solving. Review of data collection and feedback procedures, including formal research designs and action research.
Prerequisite: ORG 331, QMM 250 and major standing.

ORG 431 Leadership and Group Performance (4)
Comprehensive examination of selected theories of leadership. Emphasis on relevant empirical evidence and application of the theories to case studies that involve leadership behavior and group functioning.
Prerequisite: ORG 331 and major standing.

ORG 432 Motivation and Work Behavior (4)
Analysis of individual and organizational factors affecting employee motivation, performance and satisfaction in the work environment. Topics include the role of leadership, job design, environmental variation, compensation policies, goal-setting techniques and group influences, as each affects employee attitudes and behavior.
Prerequisite: ORG 331 and major standing.

ORG 434 Management of Human Resources (4)
Exploration and analysis of the role of the personnel function in modern organizations. Topics include job analysis, manpower planning, recruitment, selection and placement, performance analysis and appraisal, compensation policies and practices, employee information systems and personnel research techniques.
Prerequisite: ORG 331, QMM 250 and major standing.

ORG 480 Topics in Organizational Management (4)
Intensive study of a selected topic relevant to organizational behavior and/or human resource management. Topics will vary from term to term and may include career development, compensation, men and women at work, industrial health and safety, management across cultures and power in organizations. May be repeated for credit.
Prerequisite: ORG 331 and major standing.

ORG 490 Independent Study (2, 4)
Qualified and highly motivated students may engage in individual research, directed readings or group study under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

QUANTITATIVE METHODS

QMM 250 Statistical Methods (6)
Statistical techniques useful in management and economic analysis. Emphasis on statistical description, hypothesis testing, statistical quality control, time series analysis, ANOVA, estimation and regression techniques. Includes extensive computer exercises.
Prerequisites: MTH 122 or MTH 154, and CSE 125 or CSE 130.

QMM 343 Operations Management (4)
Analysis of problems and case studies in production management in general manufacturing and service industries. Management science methods will be used to solve problems of inventory management, material requirements planning, acceptance sampling, quality control, capacity planning, facility location and operations scheduling. Includes computer exercises.
Prerequisite: QMM 250, ECN 301 and major standing.

QMM 440 Management Science (4)
Overview of models and applications of management science. Includes acceptance sampling, statistical quality control, decision analysis, Bayesian analysis, inventory models, PERT and CPM, queueing models, simulation and linear programming. Includes computer exercises.
Prerequisite: QMM 250, ECN 301 and major standing.

QMM 448 Project Management Techniques (4)
An examination of the various math-based techniques for managing projects. The topics include Program Evaluation Review Technique (PERT) and Critical Path Method (CPM). Includes computer exercises.
Prerequisites: MTH 122 and major standing.

QMM 452 Forecasting (4)
Survey of analytical forecasting methods. Also covers simple econometric and distributed-lag models, seasonality, autocorrelation, qualitative methods and the assessment of commercial forecasting services. Extensive use of computer "packages" to prepare written and oral forecasts based on real data.
Prerequisite: QMM 250 and major standing, or permission of instructor.

QMM 490 Independent Study (2, 4)
Qualified and highly motivated students may engage in individual research, directed readings or group study under the supervision of a faculty member. Offered every term.
Prerequisite: An overall grade point average of 3.00 or better, major standing and an approved contract prior to registration.

SCHOOL OF ENGINEERING AND COMPUTER SCIENCE

Acting Dean: *John J. Metzner*

Office of the Dean: *Nan K. Loh, associate dean for graduate studies and research; Bhushan L. Bhatt, acting associate dean for administration; Lisa M. Birkby, assistant to the dean; Gail Innis, academic adviser/program coordinator; Frederick J. Lutz, engineering cooperative education coordinator*

General Information

The School of Engineering and Computer Science offers instruction leading to the degrees of Bachelor of Science in Engineering, with majors in computer, electrical, mechanical and systems engineering, and Bachelor of Science, with a major in computer science. In addition, programs leading to the Bachelor of Science degree in engineering chemistry and engineering physics are offered jointly with the College of Arts and Sciences.

Through its engineering programs, the School of Engineering and Computer Science prepares students for careers in an industrial-based society. Recognizing that today's engineers must be able to solve complex, highly focused problems, as well as those transcending narrow fields of specialization, the School of Engineering and Computer Science blends an interdisciplinary core with specialized study in the elected major for each program.

Oakland University engineering graduates are prepared to enter the traditional fields of government, product design, development, manufacturing, sales, service and systems analysis — as well as specialized areas, such as robotics, transportation, pollution control, energy systems, computer engineering, communications, medical electronics and automotive engineering. They are also prepared to pursue graduate study for careers in research and teaching. A growing number of students find their undergraduate engineering education is excellent preparation for careers in business, law and medicine.

The baccalaureate program in computer science provides a solid foundation for a career in that field. Since both the engineering and computer science programs are offered within the school, computer science majors are exposed to the hardware as well as the software aspects of the profession. Thus, students in the computer science program prepare themselves for careers in the traditional fields of systems programming, data processing and systems analysis, as well as in such interdisciplinary fields as artificial intelligence, robotics, computer architecture, computer graphics, pattern recognition and scientific computation.

By selecting appropriate concentrations and minors, students can combine their studies in engineering and/or computer science with advanced preparation in a number of related fields.

The School of Engineering and Computer Science also offers a minor in computer science for nonmajors.

The Master of Science and Doctor of Philosophy Degrees

The School of Engineering and Computer Science offers programs leading to the Master of Science degree in electrical and computer engineering, mechanical engineering, systems and industrial engineering, computer and information science, and the Doctor of Philosophy degree in systems engineering. In addition, a Master of Science program in engineering management is offered in cooperation with the School of Business Administration.

For more information, see the *Oakland University Graduate Catalog.*

Center for Robotics and Advanced Automation

The School of Engineering and Computer Science has a Center for Robotics and Advanced Automation. Founded in 1981, it has since become a center of research excellence. The main goals of the center are to contribute to the demand for high technology and industrial productivity in the United States and to create a partnership among industries, government and academic communities to solve problems of common interest, particularly in intelligent robotics, intelligent machine vision and automated manufacturing.

Cooperative Education

Students in the School of Engineering and Computer Science who want to combine relevant work experience with their college educations are encouraged to participate in the university's cooperative education program. Co-op employment provides practical training that is related to a student's field of study and forms an integral part of the educational program. It enables students to relate their academic studies with practical applications; and it gives them early contact with practitioners in their fields.

Beginning in the junior year, co-op students alternate four-month semesters of full-time study with equal periods of paid, full-time employment in business, industry or government. The program coordinator and the employer work together to ensure that the practical training becomes progressively more challenging and carries increasingly greater responsibility as students advance through the curriculum.

Accreditation

All academic programs of Oakland University are accredited by the North Central Association of Colleges and Schools. In addition, the university's undergraduate programs in computer, electrical, mechanical and systems engineering have been fully accredited by the Accreditation Board for Engineering and Technology (ABET), the professional accrediting agency for engineering programs in the United States.

Preparation for Admission

Entering freshmen planning to major in engineering or computer science should have taken at least three years of high school mathematics, including trigonometry. A solid background in English composition is essential for all majors. Additional preparation should include course work in chemistry and physics. Drafting and machine shop practice courses are useful, but not necessary. Normally, a B average is required for admission to programs in the School of Engineering and Computer Science.

A student planning to transfer into one of the engineering programs should present the following: four semester courses in analytic geometry and calculus, including linear algebra and differential equations; two semester courses in introductory college physics using calculus; and one or two semester courses in chemistry. Other credits in mathematics, science or engineering will be evaluated with reference to engineering graduation requirements. Technician course credits generally do not apply to these requirements.

Community college students who plan to transfer into an engineering program are advised to follow the transfer program prescribed by the Michigan Engineering College/Community College Liaison Committee. Brochures describing the program are available from community colleges or the School of Engineering and Computer Science. Generally, community college students with associate degrees have satisified the general education requirements of Oakland University's School of Engineering and Computer Science.

Students planning to transfer into the computer science program should complete one year of course work in calculus and one course in linear algebra and two semester courses in introductory college physics using calculus. A course in programming in a high-level language, such as PASCAL or PL/1, and a course in assembly programming are desirable. Whenever possible, further course work in computer science should be planned with an Oakland University adviser to ensure compatibility with university requirements.

Academic Policies of the School of Engineering and Computer Science

Transfer policy

The programs offered by the School of Engineering and Computer Science are designed to meet accreditation criteria, as well as to reflect the Oakland University philosophy of education. The programs are more than an assemblage of courses; they are designed to blend theory and experiment, and to integrate fundamental mathematical and scientific background into advanced analysis and design work.

To ensure the integrity of its programs, the School of Engineering and Computer Science has adopted the following transfer policy. Records of students transferring to Oakland University from other academic institutions are evaluated and transfer credit is granted as appropriate. Once matriculated at Oakland, students are expected to complete all remaining course work for the degree at Oakland University. Students who plan to take courses at other universities must have prior written consent of the chair of the student's major. Students who have completed 62 semester hours of credit from any accredited institution, including Oakland University, may not transfer additional credits or course equivalents from community or junior colleges.

Internal transfer

Oakland University students seeking admission to the School of Engineering and Computer Science from other programs will be considered after they have completed the following courses: MTH 154, MTH 155, PHY 151 and PHY 152. Normally an overall grade point average of 3.00 and good performance in the above courses are required for internal transfer.

Academic advising and plans of study

Each student of the School of Engineering and Computer Science is assigned a faculty adviser who helps the student plan a program of study that is academically and professionally sound. Students are encouraged to consult their faculty advisers in the selection of majors, minors or the choice of elective professional subjects.

In addition, the school's academic advising office (159A Dodge Hall) oversees specific program requirements. Students who have questions about transfer credit, academic standing, major standing, petitions or the details of degree requirements should consult the academic advising office.

Engineering and computer science majors are encouraged to complete a Plan of Study form, which is a timetable of courses to be taken for undergraduate credit. Students should complete the form in consultation with their advisers; the plan of study must be approved by the chair of the selected major.

The form should be submitted no later than the end of the semester in which a student completes 48 credits. Transfer students should submit the form when they enter Oakland University, regardless of the number of credits they have already earned.

Students are responsible for updating their plans regularly, preferably each semester. Although advisers are obligated to help students plan their programs, the responsibility for fulfilling degree requirements remains with students.

Course load

Students should strike a balance between their course load and other commitments. In general, students carrying a full load of 16 credits per semester should not be employed for more than 20 hours per week. Students who are employed 40 hours per week generally should not carry a course load of more than 4 credits per semester.

The university's maximum course load policy is detailed on page 30.

Academic standing

The performance of students in the School of Engineering and Computer Science will be reviewed at the end of each semester to determine academic progress.

Good academic standing in the school requires a cumulative grade point average of at least 2.00 in: a) courses required for the major; b) cognate courses in mathematics and science; and c) all courses taken at Oakland University. Students whose cumulative grade point averages fall below 2.00 in one or more of the three categories will be placed on provisional status.

While on provisional status, students must have their programs of study approved by the chair of their major. Students who fail to remove provisional conditions after one semester are generally ineligible to continue their programs. However, provisional status may be continued if a student is judged to be making substantial progress toward correcting the deficiency. (For part-time students, 12 consecutive credits of course work will be considered equivalent to one semester.)

Students on provisional status may not serve on committees of the School of Engineering and Computer Science.

Students who become ineligible to continue enrollment in the School of Engineering and Computer Science may transfer to another school or college within the university.

The above rules were established by the committee on instruction of the School of Engineering and Computer Science. Students wishing to appeal a ruling on their academic status must address a written petition to the committee. Petitions may be submitted to the associate dean for administration or the academic adviser.

Unsatisfactory performance

Unsatisfactory (U) grades and grades less than 2.0 are considered substandard. A student within the School of Engineering and Computer Science who repeats a course in which a grade below 2.0 has been earned must repeat that course at Oakland University. Courses in which a grade below 2.0 has been earned may not be subsequently passed by competency examination or independent study.

Prerequisites

In planning their schedules, students should ensure that they satisfy prerequisite and corequisite conditions for courses. Students will have their registrations cancelled if they register for courses for which they do not meet the conditions. Students will be liable for any financial penalties incurred by such cancellation.

Independent study and project courses

Independent study and project courses numbered 490 and 494 are available to provide enrichment opportunities to qualified students. They are not intended as substitutes for regular course offerings; rather, they allow students to investigate areas of interest outside the scope of regular courses, examine subjects more deeply than can be accommodated in regular courses, or gain educational experiences beyond that of regular course work.

To register for an independent study or project course, a student must first submit a plan of work to the faculty member who will supervise the course. The plan must be approved by the faculty member and the chair of the major before a student may register for the course.

Application forms are available in the advising office, 159A Dodge Hall.

Requirements of the cooperative education program

Students interested in the cooperative education program in engineering or computer science should apply through the Office of the Cooperative Education Coordinator, 248 Dodge Hall.

To be admitted, a student must:

1. Be granted major standing in engineering or computer science (see page 223), or file an approved plan for achieving major standing, signed by the chair of the major. In addition, engineering students must have completed the mathematics sequence appropriate to their major.
2. Normally, have a cumulative grade point average of at least 2.80.
3. Have the approval of the School of Engineering and Computer Science, the cooperative education coordinator for the school and the employer.

Transfer students must have completed at least one semester of full-time study at Oakland University before acceptance into the program.

To remain in good standing in the cooperative education program, students must:

1. Complete alternate semesters of full-time study and full-time work.
2. Complete at least 12 credits of work appropriate to their elected major during each semester of study, maintaining a cumulative grade point average of at least 2.80.
3. Complete EGR 391 during the semester following each co-op assignment.
4. Submit a satisfactory training report (as part of the requirements for EGR 391) within four weeks of the beginning of the semester following each co-op assignment.
5. Receive a satisfactory employer evaluation for each assignment.

The grade assigned in EGR 391 will give added weight to the employer's evaluation, the student's written training report, a progress interview with the coordinator and the student's participation in regularly scheduled classes.

Students who do not meet the conditions for good standing will be subject to dismissal from the co-op program.

The co-op program is administered by the Department of Placement and Career Services.

Academic conduct

Students are expected to abide by the principles of truth and honesty, which are essential to fair grading. Academic misconduct in any form is not permitted.

Students who are found guilty of academic misconduct in any course offered by the school, as determined by the university academic conduct committee, may be subject to penalties ranging from a reduced grade for the assignment, to a grade of 0.0 for the entire course, to academic probation, to suspension or dismissal from the university.

All assignments must be the independent work of each student, unless the professor of the course gives explicit permission relaxing this requirement.

For a detailed description of the university academic conduct policy, see the *Schedule of Classes*, the "Oakland University Student Handbook" or pages 32-33 of this catalog.

Petitions

Waivers of specific academic requirements may be initiated by submitting a petition of exception, as described on page 30.

Students seeking a review of their academic standing within the school or students who wish to make a formal complaint should submit a written petition to the chair of their major or to the associate dean for administration. Petitions will be processed according to established university procedures.

Degree Requirements and Regulations

General requirements for the degrees of Bachelor of Science in Engineering and Bachelor of Science

The following general requirements must be met by a student seeking a bachelor's degree in computer engineering, electrical engineering, mechanical engineering, systems engineering, engineering chemistry, engineering physics or computer science.

Each student must:

1. Complete at least 128 credits for all engineering programs and at least 124 credits for the computer science program. At least 32 credits must be in courses at the 300-level or above.
2. Complete at least 32 credits at Oakland University. (Refer to the transfer policy of the School of Engineering and Computer Science for further clarification.) The credits taken at Oakland must include the following for students majoring in:
   a) computer, electrical, mechanical or systems engineering, at least 24 credits in engineering core or professional subjects required for the major;
   b) engineering chemistry and engineering physics, at least 16 credits in required engineering courses, and 16 credits in chemistry or physics courses required for the major;
   c) computer science, at least 20 credits in computer science courses required for the major.
3. Take, at Oakland University, the last 8 credits needed to complete baccalaureate requirements.
4. Demonstrate writing proficiency by meeting the university standard in English composition (see page 25).
5. Fulfill the university general education requirement (see pages 25-28).
6. Be admitted to major standing in the major of the student's choice.
7. Complete the requirements specified for the elected major.
8. Earn a cumulative grade point average of at least 2.00 in courses taken at Oakland University.
9. Complete an Application for Degree card at the Office of the Registrar and pay the graduation service fee.
10. Be in substantial compliance with all legal curricular requirements.

Graduation check

To ensure they have met all requirements, students are encouraged to participate in a final program audit the semester preceding the one in which they expect to graduate. Application may be made in the advising office, 159A Dodge Hall.

Suggested sequence for the freshman year

Following is an example of a suggested sequence of courses for freshmen entering the School of Engineering and Computer Science with the necessary preparation.

Engineering majors

First semester: EGR 101, MTH 154, CHM 144 or CHM 164, CSE 132, English composition or general education course. Second semester: CSE 171, MTH 155, PHY 151, general education course.

Computer science majors

First semester: CSE 132, MTH 154, English composition or general education course. Second semester: CSE 262, MTH 155, PHY 151, general education course. Computer science majors are encouraged to take the 1-credit course EGR 101 as a free elective.

Scheduling for subsequent years depends on students' selected majors or minors, but should be tailored to promptly meet requirements for admission to major standing. For sample schedules, refer to the department listings or to the student handbook of the School of Engineering and Computer Science.

Students who are not prepared to enter these mathematics and science courses without additional preparation in the subject areas must modify their schedules accordingly. Such students

may require additional time to complete degree requirements, unless they correct the deficiencies by enrolling during the spring and summer sessions following the freshman year.

Admission to major standing

To enroll in 300- or 400-level courses and to become candidates for the baccalaureate degree, students of the School of Engineering and Computer Science must gain major standing in their selected majors. An application for major standing should be submitted during the semester in which a student completes all requirements for admission.

Students lacking major standing may enroll in 300- or 400-level engineering or computer science courses only by presenting at registration an approval form signed by either the academic adviser or the chair of the major. The purpose of this process is to ensure that the student can correct and is working to correct outstanding deficiencies preventing admission to major standing. Forms may be obtained in the academic advising office, 159A Dodge Hall.

Admission to major standing in each of the programs of the School of Engineering and Computer Science requires certification in English composition, and satisfactory completion of course work in mathematics, science and the major, as designated below.

Computer science and computer engineering

Mathematics: MTH 154-155, MTH 256, APM 263. Science: PHY 151, PHY 152. Major: EGR 101 (for computer engineering majors only) CSE 132, CSE 171, CSE 262, CSE 280.

Electrical engineering and systems engineering

Mathematics: MTH 154-155, MTH 256, APM 257. Science: CHM 144 or CHM 164, PHY 151, PHY 152. Major: EGR 101, CSE 132, CSE 171 and ME 221.

Mechanical engineering

Mathematics: MTH 154-155 and either MTH 254 or both MTH 256 and APM 257. Science: CHM 144 or CHM 164, PHY 151, PHY 152. Major: EGR 101, CSE 132, CSE 171, ME 221.

Engineering physics

Mathematics: MTH 154-155, MTH 254. Science: CHM 144-145 or CHM 164-165, PHY 151, PHY 152, PHY 158. Major: EGR 101, CSE 132, CSE 171, EE 222.

Engineering chemistry

Mathematics: MTH 154-155, MTH 254. Science: CHM 144-145 or CHM 164-165, CHM 149, APM 257. Major: EGR 101, CSE 132, CSE 171, ME 221.

To satisfactorily complete the requirements for major standing a student must a) have an average of at least 2.00 in each of the mathematics, science and major course groupings; b) have no more than two grades below 2.0 in the required courses; c) not have repeated any course more than twice; and d) not have repeated more than three different courses. Courses in which a W (withdrawal) grade is recorded will not be counted.

Transfer students may satisfy the requirements for major standing by using transfer credits.

Double major

To earn two majors in engineering or in engineering and computer science, students must complete all requirements of both programs. Further, in addition to the credit hours needed for one major, the student must complete a minimum of 12 credit hours in pertinent technical courses applicable to the second major.

Students seeking two degrees should consult the requirements on page 29.

Approved science electives

Approved science electives for majors in computer science and in computer, electrical, mechanical and systems engineering are: biology courses numbered 190 and higher; CHM 145, CHM 165 (CHM 144 for computer science majors) and chemistry courses numbered 225 and higher, except CHM 497; physics courses numbered 317 and higher, except PHY 341; and ENV 308 and ENV 373. Special topics and independent study courses require prior approval.

Free electives ineligible for credit toward the degree

Students entering the School of Engineering and Computer Science are expected to have adequate preparation for the required introductory courses in mathematics, physics and chemistry. Courses in these areas that are more elementary than MTH 154, PHY 151 and CHM 144 may not be presented for credit toward a degree in engineering and computer science. Specifically, the following courses and their equivalents are not recognized for credit toward the degree: MTH 100, MTH 111,* MTH 112,* MTH 121-122, MTH 141, PHY 101, PHY 102, CHM 104, CHM 110 and CHM 140.

New courses in mathematics, physics or chemistry that may be introduced in the future will be added to the list if the content warrants. A current list of disallowed courses is maintained in the office of the academic adviser, 159A Dodge Hall, and is available for inspection.

*See special information concerning these courses on page 97.

Concentrations and Minors

Students who wish to add an established minor or concentration or otherwise participate in an interdepartmental program must apply for admission and assistance in planning a program. Application may be made to the coordinator of the appropriate program committee or department involved.

Described below are the requirements for minors and concentrations that have been approved for engineering and computer science majors. Students planning medical, dental or optometry careers are advised to take the concentration in preprofessional studies in medicine, dentistry and optometry (see page 184).

Accounting

Coordinator: *David D. Sidaway*

For computer science majors, 20 credits. To obtain a minor in accounting, a student must complete the following courses with a grade of at least 2.0 in each course: ACC 200, ACC 210 and 12 additional credits in accounting (ACC) courses for which the student has the prerequisites.

Applied mathematics

Coordinator: *Jerrold W. Grossman*

For engineering and computer science majors, 22 credits. To obtain a minor in applied mathematics, a student must complete the following courses with a grade of 2.0 or better in each: MTH 254, MTH 256, APM 331, STA 226 or another approved statistics course, and two courses chosen from APM 257, APM 263 and courses labeled MTH, APM, STA or MOR with a number of 300 or higher (with the exception of MTH 414 and MTH 497). Students should consult an adviser in the Department of Mathematical Sciences when planning their programs.

Applied statistics

Coordinator: *Harvey Arnold*

For engineering and computer science majors, 16 credits. To obtain a concentration in applied statistics, a student must complete at least 16 credits in statistics with an average grade of at least 2.0. Courses must include STA 226 or another approved introductory course, STA 322, STA 323 and STA 324. Students should consult an adviser in the Department of Mathematical Sciences when planning their programs.

Biology

Coordinator: *Nalin J. Unakar*

For computer science majors, 20 credits. To obtain a liberal arts minor in biology, a student must take a minimum of 20 credits in biology, including BIO 190, BIO 195 and BIO 200. At least 8 credits must be in courses numbered 300 or higher.

Chemistry

Coordinator: *Paul Tomboulian*

For computer science majors, 26 credits. To obtain a liberal arts minor in chemistry, a student must take CHM 144-145, CHM 149, CHM 225, CHM 203-204 or CHM 234-235 and CHM 342. This minor is also available for engineering majors, 24 credits. Engineering majors must complete the following courses with an average grade of 2.0 or better: CHM 144-145, CHM 149, CHM 203 or CHM 225, CHM 342, CHM 470 and CHM 471.

Economics

Coordinator: *Ronald L. Tracy*

For engineering and computer science majors, 18-20 credits. To obtain a minor in economics (offered by the School of Business Administration), a student must complete the following courses with a grade of at least 2.0 in each course: ECN 150 or ECN 210 or ECN 200-201, and 12-16 additional credits in economics (ECN) courses for which the student has the prerequisites. Students who have taken ECN 150 need 16 additional credits to earn a minor.

Environmental studies

Coordinator: *Paul Tomboulian*

For engineering majors, 24 credits. To obtain a concentration in environmental studies, a student must complete the following courses: a) CHM 203, ENV 308 and EGR 407; b) 8 credits of electives chosen from ENV 362, ENV 372, ENV 373, ENV 481 and BIO 301; and c) 4 credits of EGR 490 or EGR 494 on an approved environmental engineering topic.

Finance

Coordinator: *Karl D. Gregory*

For computer science majors, 22 credits. To obtain a minor in finance, a student must complete the following courses and any prerequisites required: ACC 200, QMM 250, FIN 322 and 8 additional credits in finance (FIN) courses. A grade of at least 2.0 in each course is required.

Linguistics

Coordinator: *William Schwab*

For computer science majors, 20 credits. To obtain a liberal arts minor in linguistics, a student must complete the following courses with an average grade of at least 2.0: ALS 176 or one 200-level LIN course, LIN 301, and at least 12 linguistics (LIN) credits at the 300 or 400 levels, 4 of which must be at the 400 level.

Management

Coordinator: *Scott A. Monroe*

For engineering and computer science majors, 22-24 credits. To obtain a minor in management, a student must complete the following courses with a grade of at least 2.0 in each course: ECN 210 or ECN 200-201, ACC 200, ORG 330, and 8 additional credits chosen from 300- or 400-level courses in ACC, FIN, MGT, MIS, MKT, ORG or QMM for which the student has met the prerequisites.

Physics

Coordinator: *Norman Tepley*

For computer science majors, 20 credits. To obtain a liberal arts minor in physics, a student must complete the following courses with an average grade of at least 2.0: PHY 151-152, PHY 158, and at least 10 credits in physics courses numbered 300 or higher.

Quantitative methods

Coordinator: *David P. Doane*

For computer science majors, 17-18 credits. To obtain a minor in quantitative methods, a student must complete the following courses with a grade of at least 2.0 in each course: QMM 250, STA 226 or SYS 317; 8 additional credits chosen from QMM 343, QMM 440, QMM 448, QMM 452, ECN 405, STA 323 and STA 324.

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Acting chair: *Richard E. Haskell*

Professors: *David E. Boddy, Richard E. Haskell, Glenn A. Jackson, Janusz W. Laski, Thomas G. Windeknecht*

Associate professors: *Subramanian Ganesan, Ronald J. Srodawa, Sarma R. Vishnubhotla*

Assistant professors: *Frank A. Cioch, Syed M. Mahmud, Fatma Mili, Christian C. Wagner*

Special instructor: *Jerry E. Marsh*

Adjunct professor: *Michael Marcotty*

Adjunct associate professor: *Osman D. Altan*

Major in Computer Engineering

Major technological advances are being made in the computer field at a rapid pace, and it is essential that computer engineering students are not only aware of these advances but prepared to work in this changing environment. Students should gain a strong background in the fundamentals of computer engineering and develop a willingness to accept and thrive on change.

The computer engineering program at Oakland University is designed to provide students with the basic knowledge and skills needed to function effectively in computer-related activities in the years ahead. A balance between theoretical and practical experience and an emphasis on the software and hardware aspects of computers are key elements to the university's computer engineering major.

To earn the Bachelor of Science degree with a major in computer engineering, students must complete 128 credits. They must demonstrate proficiency in writing (see page 25) and meet the following requirements:

		Credits
General education (excluding mathematics and science):		24
Mathematics and science:		
MTH 154-155	Calculus	8
MTH 256	Introduction to Linear Algebra	3
APM 257	Introduction to Differential Equations	3
APM 263	Discrete Mathematics	4
CHM 144	General Chemistry	4
PHY 151-152	Introductory Physics	8
Approved science elective		4
		34
Computer science and engineering core:		
CSE 132	Introduction to Computer Science	4
CSE 171	Introduction to Digital Logic and Microprocessors	4
CSE 262	Data Structures	4
CSE 280	Computer Organization and Assembly Language Programming	4
		16

Engineering core:		
EGR 101	Introduction to Engineering	1
EGR 401	Professional Engineering	1
EE 222	Introduction to Electrical Circuits	4
EE 384	Electronic Materials and Devices	4
ME 221	Statics and Dynamics	4
ME 241	Thermodynamics	4
SYS 317	Engineering Probability and Statistics	3
SYS 325	Lumped Parameter Linear Systems	3
		24
Professional subjects:		
Required		
EE 326	Electronic Circuit Design	4
CSE 388	Computer Hardware Design	4
CSE 464	Computer Organization and Architecture	4
		12
Electives — 12 credits chosen from:		
CSE 343	Foundations of Computer Science (4)	
Any 400-level CSE course (4-12)		
EE 426	Advanced Electronics (4)	
EE 437	Introduction to Communication Systems (4)	
SYS 422	Intelligent Robotics (4)	
SYS 431	Automatic Control Systems (4)	
SYS 463	Foundations of Computer-Aided Design (4)	
SYS 469	Simulation in Engineering (4)	
ECN 414	Engineering Economics (2)	
EGR 490*	Senior Project (2-4)	
EGR 494*	Independent Study (2-4)	
		12
Free electives (may be used to satisfy writing proficiency):		6
For limitations on free electives see page 224.		
	Total	128

**Needs prior permission of the chairperson of the Department of Computer Science and Engineering.*

Economics requirement:

The economics requirement may be met by completion of ECN 414 as a professional elective or by completion of ECN 150, ECN 200 or ECN 210 as a part of the general education requirement.

Performance requirements:

In addition to the previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.0 within each group: namely, mathematics and science, core subjects and professional subjects. Within professional subjects, at most two grades below 2.0 are permitted, at most two different courses may be repeated, and a total of three repeat attempts is permitted.

Sample computer engineering schedule

Students entering the School of Engineering and Computer Science with the required background may follow a schedule such as the one indicated below. However, students will need additional time to complete the program if they do not have the required background upon entrance to the program.

Freshman year — fall semester: EGR 101, MTH 154, CHM 144, CSE 132, English composition or general education, 17 credits; winter semester: MTH 155, PHY 151, CSE 171, general education, 1-credit free elective, 17 credits.

Sophomore year — fall semester: MTH 256, PHY 152, CSE 262, general education, 1-credit free elective, 16 credits; winter semester: APM 263, EE 222, CSE 280, general education, 16 credits.

Junior year — fall semester: APM 257, ME 221, SYS 317, EE 326, general education, 18 credits; winter semester: ME 241, CSE 388, SYS 325, general education, 15 credits.

Senior year — fall semester: EE 384, CSE 464, professional elective, science elective, 16 credits; winter semester: two professional electives, EGR 401, 4-credit free elective, 13 credits.

Major in Computer Science

The program in computer science leading to a Bachelor of Science degree prepares students for professional practice in systems programming, software design and computer applications, or for graduate study in computer science. The program provides a solid foundation based on the organization, processing and display of information. Through choice of minor, students may broaden their areas of expertise to include such diverse subjects as applied mathematics, business applications, management science or other areas that utilize computers in everyday operations.

To earn the Bachelor of Science degree with a major in computer science, students must complete 124 credits, demonstrate writing proficiency (see page 25) and meet the following requirements:

		Credits
General education (excluding mathematics and science):		24
Mathematics and science:		
MTH 154-155	Calculus	8
MTH 256	Introduction to Linear Algebra	3
APM 263	Discrete Mathematics	4
STA 226	Applied Statistics (or approved substitute)	4
PHY 151-152	Introductory Physics	8
PHY 158	General Physics Laboratory	2
Approved science elective		4
		33
Computer science and engineering core:		
CSE 132	Introduction to Computer Science	4
CSE 171	Introduction to Digital Logic and Microprocessors	4
CSE 262	Data Structures	4
CSE 280	Computer Organization and Assembly Language Programming	4
		16
Professional subjects:		
Required:		
Three programming language laboratories from groups B and C (see page 243) with at least one from Group B and one from Group C		3
CSE 335	Programming Languages	4
CSE 343	Foundations of Computer Science	4
CSE 450	Operating Systems	4
		15
Electives — 12 credits chosen from:		
Any 300- or 400-level CSE course (4-12)		
SYS 463	Foundations of Computer-Aided Design (4)	
SYS 469	Simulation in Engineering (4)	
EGR 490*	Senior Project (2-4)	
EGR 494*	Independent Study (2-4)	
		12
Approved minor:		20
Free electives (may be used to satisfy writing proficiency)		4
For limitations on free electives see page 224.		
	Total	124

**Needs prior approval of the chairperson of the Department of Computer Science and Engineering.*

Performance requirements:

In addition to previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.0 within each group: namely, mathematics and science, core subjects, professional subjects and approved minor. Within professional subjects, at most two grades below 2.0 are permitted, at most two different courses may be repeated and a total of three repeat attempts is permitted.

Approved minors

Computer science students must complete an approved minor with an average grade point of at least 2.00. Approved minors are: accounting, applied mathematics, applied statistics, biology, chemistry, economics, finance, linguistics, management, physics and quantitative methods (see page 224).

Other minors or alternate programs may be approved by petition. Students must apply to the coordinator of the program for assistance in planning their minors and to obtain certification. Courses used to satisfy minor requirements may also be used to meet other program requirements.

Sample computer science schedule

Students entering the School of Engineering and Computer Science with the required background may follow a schedule such as the one indicated below. However, students will need additional time to complete the program if they do not have the required background upon entrance to the program.

Freshman year — fall semester: MTH 154, CSE 132, general education, English composition or general education, 1-credit free elective, 17 credits; winter semester: MTH 155, PHY 151, CSE 262, general education, 16 credits.

Sophomore year — fall semester: MTH 256, PHY 152, PHY 158, CSE 171, programming lab, 14 credits; winter semester: APM 263, CSE 280, course in minor, general education, programming lab, 17 credits.

Junior year — fall semester: STA 226, CSE 335, course in minor, general education, programming lab, 17 credits; winter semester: CSE 343, course in minor, general education, free elective, 16 credits.

Senior year — fall semester: CSE 450, professional elective, course in minor, science elective, 16 credits; winter semester: two professional electives, course in minor, free elective, 15 credits.

Minor in computer science for nonengineering majors

The School of Engineering and Computer Science offers a minor in computer science to students with majors other than engineering or computer science.

Students must earn 20 credits in computer science (CSE) courses, including: a minimum of 8 credits taken from CSE 335, CSE 340, CSE 343, CSE 345 or any 400-level CSE course approved by an adviser; a maximum of 8 credits from CSE 125, CSE 130 and CSE 132; a maximum of 8 credits from CSE 220, CSE 248, CSE 280 and CSE 262; and a maximum of 4 credits in "Programming Language Labs." A grade point average of at least 2.00 is required in courses counted toward a minor.

Students seeking a minor must obtain permission from the Department of Computer Science and Engineering in order to register for CSE courses at the 300 and 400 levels.

DEPARTMENT OF ELECTRICAL AND SYSTEMS ENGINEERING

Acting chair: *Tung H. Weng*

John F. Dodge Professor: *Nan K. Loh*

Professors: *David H. Evans, Keith R. Kleckner, John J. Metzner, Tung H. Weng, Howard R. Witt*

Associate professor: *Andrzej Rusek*

Assistant professors: *Hoda S. Abdel-Aty-Zohdy, Ka C. Cheok, Manohar Das, Robert P. Judd, Robert P. Van Til, Mohamed A. Zohdy*

Visiting assistant professor: *You L. Gu*

Adjunct professors: *Donald R. Falkenburg, Reuben Hackam*

Adjunct associate professor: *Ronald R. Beck*

Major in Electrical Engineering

Electrical engineering is a broad field encompassing a number of disciplines. Oakland University's undergraduate program in electrical engineering is designed to provide students with the basic knowledge and skills needed to function as electrical engineers in the coming decades. Students obtain solid grounding in the fundamentals of analog and digital circuits, electronics, electromagnetics and electronic devices. In addition, a strong laboratory component of the program offers numerous design opportunities and allows students to relate theoretical ideas to practical problems.

Electrical engineering faculty members are engaged in research related to new developments in the field. Their activities contribute to a well-developed, up-to-date curriculum.

To earn the Bachelor of Science degree with a major in electrical engineering, students must complete 128 credits, demonstrate writing proficiency (see page 25) and meet the following requirements:

		Credits
General Education (excluding mathematics and science)		24
Mathematics and science:		
MTH 154-155	Calculus	8
MTH 254	Multivariable Calculus	4
MTH 256	Introduction to Linear Algebra	3
APM 257	Introduction to Differential Equations	3
CHM 144	General Chemistry	4
PHY 151-152	Introductory Physics	8
Approved science elective		4
		34
Engineering core:		
EGR 101	Introduction to Engineering	1
EGR 401	Professional Engineering	1
CSE 132	Introduction to Computer Science	4
CSE 171	Introduction to Digital Logic and Microprocessors	4
EE 222	Introduction to Electrical Circuits	4

EE 384	Electronic Materials and Devices	4
ME 221	Statics and Dynamics	4
ME 241	Thermodynamics	4
SYS 317	Engineering Probability and Statistics	3
SYS 325	Lumped Parameter Linear Systems	3
		32

Professional subjects:

Required:

EE 326	Electronic Circuit Design	4
EE 345	Electric and Magnetic Fields	4
EE 351	Electromechanical Energy Conversion	4
EE 378	Design of Digital Systems	4
EE 437	Introduction to Communication Electronics	4
SYS 431	Automatic Control Systems	4
		24

Electives — 8 credits chosen from:

Any 400 level course with an EE, CSE or SYS designation (4-8)

EGR 490*	Senior Project (2-4)	
EGR 494*	Independent Study (2-4)	
ME 454	Solar and Alternate Energy Systems (4)	
PHY 472	Quantum Mechanics I (4)	
ECN 414	Engineering Economics (2)	
		8

Free electives (may be used to satisfy writing proficiency): 6

For limitations on free electives, see page 224.

Total 128

**Needs prior approval of the chairperson of the Department of Electrical and Systems Engineering.*

Depth Areas

Electrical engineering students desiring depth in a particular area should consider the following professional elective pckages: Electronics — EE 426, EE 487; Control systems — SYS 422, SYS 433; Computers — EE 470, EE 472; Power systems — SYS 458, ME 454.

Economics Requirement

The economics requirement may be met by completion of ECN 414 as a professional elective or by completion of ECN 150, 200 or 210 as a part of the general education requirement.

Performance requirements:

In addition to previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.0 within each required group: namely, mathematics and science, core subjects, and professional subjects. Within professional subjects, at most two grades below 2.0 are permitted, at most two different courses may be repeated and a total of three repeat attempts is permitted.

Major in Systems Engineering

Systems engineering is a broad discipline with roots in a diverse spectrum of engineering fields. The coordination of engineering tasks and the assembly of a complex array of subsystems, such as in the Apollo and Space Shuttle programs, are typical of the systems approach to problem solving and design.

Oakland University's systems engineering program contains two options: dynamic systems and control, and manufacturing.

The dynamic systems and control program prepares students for the field of control engineering. The curriculum combines courses from electrical and mechanical engineering, along with a systems engineering control sequence. It is designed to teach the fundamentals of mechanical systems, control system design techniques, and the practical matter of implementing the controllers in modern electronic hardware.

The manufacturing program emphasizes the important role of the computer in systems design. This curriculum is anchored by a strong computer science component which, along with professional courses, prepares a student for a career in simulation, computer-assisted design and systems optimization.

To earn the Bachelor of Science degree with a major in systems engineering, students must complete 128 credits, demonstrate writing proficiency (see page 25) and meet the following requirements:

		Credits
General education (excluding mathematics and science):		24
Mathematics and science		
MTH 154-155	Calculus	8
MTH 256	Introduction to Linear Algebra	3
APM 257	Introduction to Differential Equations	3
APM 263*	Discrete Mathematics (4) or	
MTH 254*	Multivariable Calculus (4)	4
CHM 144	General Chemistry	4
PHY 151-152	Introduction to Physics	8
Approved science elective		4
		34
Engineering core:		
EGR 101	Introduction to Engineering	1
EGR 372	Properties of Materials	4
EGR 401	Professional Engineering	1
CSE 132	Introduction to Computer Scienc	4
CSE 171	Introduction to Digital Logic and Microprocessors	4
EE 222	Introduction to Electrical Circuits	4
ME 221	Statics and Dynamics	4
ME 241	Thermodynamics	4
SYS 317	Engineering Probability and Statistics	3
SYS 325	Lumped Parameter Linear Systems	3
		32
Professional subjects for dynamic systems and control option (32 credits)		
Required:		
EE 326	Electronic Circuit Design	4
EE 351	Electromechanical Energy Conversion	4
EE 378	Design of Digital Systems	4
ME 321	Dynamics and Vibrations	4
SYS 431	Automatic Control Systems	4
SYS 433	Modern Control System Design	4
		24
Electives — 8 credits chosen from:		
Any 400-level course with EE, CSE, SYS or ME designation (4-8)		
EGR 490**	Senior Engineering Project (2-4)	
EGR 494**	Independent Study (2-4)	
ECN 414	Engineering Economics (2)	
		8
Professional subjects for manufacturing option (32 credits)		
Required:		
CSE 262	Data Structures	4
CSE 418	Applied Numerical Methods: Matrix Methods	4
SYS 410	Systems Optimization and Design	4
SYS 463	Foundations of Computer-Aided Design	4
SYS 469	Simulation in Engineering	4
SYS 483	Production Systems	4
		24

Electives — 8 credits chosen from:

Any 400-level course with the SYS, CSE, EE or ME designation (4-8)		
EGR 490**	Senior Project (2-4)	
EGR 494**	Independent Study (2-4)	
ECN 414	Engineering Economics (2)	
		8
Free Electives (may be used to satisfy writing proficiency)		6
For limitations, on free electives see page 224.		
	Total	128

**MTH 254 is required for dynamic systems and control option; and APM 263 is required for manufacturing option.*
***Needs prior permission of the chairperson of the Department of Electrical and Systems Engineering.*

Economics requirement:

The economics requirement may be met by completing ECN 414 as a professional elective or by completing ECN 150, ECN 200 or ECN 210 as part of the general education requirement.

Performance requirements:

In addition to previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.0 within each group: namely mathematics and science, core subjects and professional subjects. Within professional subjects, at most two grades below 2.0 are permitted, at most two different courses may be repeated and a total of three repeat attempts is permitted.

Sample electrical engineering and systems engineering schedules

Students entering the School of Engineering and Computer Science with the required background may follow a schedule such as the one indicated below. However, students will need additional time to complete the program if they do not have the required background upon entrance to the program.

Freshman year — fall semester: EGR 101, MTH 154, CHM 144, CSE 132, English composition or general education, 17 credits; winter semester: MTH 155, PHY 151, CSE 171, general education, 1-credit free elective, 17 credits.

Sophomore year — fall semester: MTH 254, PHY 152, ME 221 or ME 241, general education, 16 credits; winter semester: APM 257, EE 222, ME 221 or ME 241, general education, 1-credit free elective, 16 credits.

Junior year — fall semester: MTH 256, SYS 317, EGR 372 or EE 384, SYS 325, general education, 17 credits; winter semester: two professional subjects, one science elective, one free elective, 16 credits.

Senior year — fall semester: three professional subjects, EGR 401, 13 credits; winter semester: three professional subjects, general education, 16 credits.

DEPARTMENT OF MECHANICAL ENGINEERING

Chair: *Joseph D. Hovanesian*

Professors: *Robert H. Edgerton, William G. Hammerle, Joseph D. Hovanesian, Yau Y. Hung, Gilbert L. Wedekind*

Associate professor: *Bhushan L. Bhatt*

Assistant professors: *Ren-Jyh Gu, Chin L. Ko, Brian P. Sangeorzan*

Adjunct professors: *Martin A. Erickson, Joseph S. Rice*

Adjunct associate professor: *Steven L. Plee*

Adjunct assistant professor: *Ranjit K. Roy*

Major in Mechanical Engineering

The field of mechanical engineering offers a broad spectrum of career opportunities in such areas as design, analysis, test development, research and the manufacturing of numerous products.

Oakland University offers a program in mechanical engineering leading to a Bachelor of Science degree. The curriculum provides a foundation in the mechanics of solids, thermodynamics, fluid mechanics, transfer and rate mechanisms, materials, design of mechanical systems and electrical theory. A strong laboratory experience is interwoven through the curriculum. Opportunities are provided to allow students to relate theoretical ideas to practical problems.

The option of selecting several of the senior-level courses allows for greater flexibility in the choice of option areas of specialization within mechanical engineering.

To earn the Bachelor of Science degree with a major in mechanical engineering, students must complete 128 credits, demonstrate writing proficiency (see page 25) and meet the following requirements:

		Credits
General Education (excluding mathematics and science):		24
Mathematics and science:		
MTH 154-155	Calculus	8
MTH 254	Multivariable Calculus	4
MTH 256	Introduction to Linear Algebra	3
APM 257	Introduction to Differential Equations	3
CHM 144	General Chemistry	4
PHY 151-152	Introductory Physics	8
Approved science elective		4
		34
Engineering core:		
EGR 101	Introduction to Engineering	1
EGR 372	Properties of Materials	4
EGR 401	Professional Engineering	1
CSE 132	Introduction to Computer Science	4
CSE 171	Introduction to Digital Logic and Microprocessors	4
EE 222	Introduction to Electrical Circuits	4

ME 221	Statics and Dynamics	4
ME 241	Thermodynamics	4
SYS 317	Engineering Probability and Statistics	3
SYS 325	Lumped Parameter Linear Systems	3
		32

Professional subjects:

Required:

ME 321	Dynamics and Vibrations	4
ME 331	Introduction to Fluid and Thermal Energy Transport	4
ME 361	Mechanics of Materials	4
		12

Professional design requirements:

Choose one course from Group A and one from Group B:

Group A

ME 461	Analysis and Design of Mechanical Structures (4)	
ME 486	Machine Design (4)	
ME 487	Mechanical Engineering CAD/CAM Systems (4)	

Group B

ME 454	Solar and Alternate Energy Systems (4)	
ME 482	Fluid and Thermal Energy Systems (4)	
		8

Professional options:

1. General mechanical engineering option (12 credits)

Professional electives (chosen from the following if not taken to satisfy design requirements):

ME 438	Fluid Transport (4)	
ME 448	Thermal Energy Transport (4)	
ME 449	Numerical Techniques in Heat Transfer and Fluid Flow (4)	
ME 454	Solar and Alternate Energy Systems (4)	
ME 456	Energy Systems Analysis (4)	
ME 461	Analysis and Design of Mechanical Structures (4)	
ME 472	Material Properties and Processes (4)	
ME 482	Fluid and Thermal Energy Systems (4)	
ME 486	Machine Design (4)	
ME 487	Mechanical Engineering CAD/CAM Systems (4)	
ECN 414	Engineering Economics (2)	

Not more than 4 credits from:

EGR 407	Environmental Engineering (4)	
EGR 490*	Senior Engineering Project (2-4)	
EGR 494*	Independent Study (2-4)	
SYS 431	Automatic Control Systems (4)	
SYS 469	Simulation in Engineering (4)	
SYS 483	Production Systems (4)	
CSE 417	Applied Numerical Methods: Approximations (4)	
CSE 418	Applied Numerical Methods: Matrix Methods (4)	
		12

2. Fluid and thermal systems option (12 credits)

Required subject:

ME 482	Fluid and Thermal Energy Systems (4)	

Professional electives (chosen from the following if not taken to satisfy design requirements):

ME 438	Fluid Transport (4)	
ME 448	Thermal Energy Transport (4)	
ME 449	Numerical Techniques in Heat Transfer and Fluid Flow (4)	
ME 454	Solar and Alternate Energy Systems (4)	
ME 456	Energy Systems Analysis (4)	
EGR 490*	Senior Engineering Project (2-4)	
ECN 414	Engineering Economics (2)	

No more than 4 credits from

EGR 494*	Independent Study (2-4)	
SYS 431	Automatic Control Systems (4)	
CSE 417	Applied Numerical Methods: Approximations (4)	
CSE 418	Applied Numerical Methods: Matrix Methods (3)	
		12

3. Computer-aided design option (12 credits)

Required subjects:

ME 461	Analysis and Design of Mechanical Structures (4)	
ME 487	Mechanical Engineering CAD/CAM Systems (4)	

Professional electives (chosen from the following if not taken to satisfy design requirements):

ME 449	Numerical Techniques in Heat Transfer and Fluid Flow (4)	
ME 472	Material Properties and Processes (4)	
ME 486	Machine Design (4)	
EGR 490*	Senior Engineering Project (2 to 4)	
EGR 494*	Independent Study (2 to 4)	
ECN 414	Engineering Economics (2)	

No more than 4 credits from:

SYS 463	Foundations of Computer-Aided Design (4)	
CSE 417	Applied Numerical Methods: Approximations (4)	
CSE 418	Applied Numerical Methods: Matrix Methods (4)	
		12

4. Production and manufacturing processes option (12 credits):

Required subjects:

ME 472	Material Properties and Processes (4)	
ME 486	Machine Design (4)	

Professional electives (chosen from the following if not taken to satisfy design requirements):

ME 461	Analysis and Design of Mechanical Structures (4)	
ME 482	Fluid and Thermal Energy Systems (4)	
ME 487	Mechanical Engineering CAD/CAM Systems (4)	
ME 665	Experimental Stress Analysis (4) (requires instructor approval)	
EGR 490*	Senior Engineering Project (2-4)	
EGR 494*	Independent Study (2-4)	
SYS 422	Intelligent Robotics (4)	
SYS 483	Production Systems (4)	
ECN 414	Engineering Economics (2)	

No more than 4 credits from:

SYS 431	Automatic Control (4)	
CSE 470	Microprocessors and Microcomputers (4)	
		12

Free electives (may be used to satisfy writing proficiency and programming recommendations): 6

For limitations on free electives see page 224.

Total 128

**Needs prior permission of the chairperson of the Department of Mechanical Engineering.*

Economics requirement

The economics requirement may be met by completion of ECN 414 as a professional elective or by completion of ECN 150, ECN 200 or ECN 210 as part of the general education requirement.

Programming Recommendations

In addition to the required computer courses, it is recommended that students have some experience in Fortran language, such as CSE 232, and word processing, spread sheets and simple graphics such as CSE 201.

Performance Requirements

In addition to previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.0 within each group: namely, mathematics and science, core subjects, and professional subjects. Within professional subjects, at most two grades below 2.0 are permitted, at most two different courses may be repeated and a total of three repeat attempts is permitted.

Sample mechanical engineering schedule

Students entering the School of Engineering and Computer Science with the required background may follow a schedule such as the one indicated below. However, students will need additional time to complete the program if they do not have the required background upon entrance to the program.

Freshman year — fall semester: EGR 101, MTH 154, CHM 144, CSE 132, English composition or general education, 17 credits; winter semester: MTH 155, PHY 151, CSE 171, general education, 1-credit free elective, 17 credits.

Sophomore year — fall semester: MTH 254, PHY 152, ME 221 or ME 241, general education, 16 credits; winter semester: APM 257, EE 222, ME 221 or ME 241, general education, 1-credit free elective, 16 credits.

Junior year — fall semester: MTH 256, ME 331, EGR 372, general education, 15 credits; winter semester: SYS 325, ME 321, ME 361, science elective, 15 credits.

Senior year — fall semester: SYS 317, EGR 401, two professional electives, general education, 16 credits; winter semester: three professional electives, free elective, 16 credits.

ENGINEERING SCIENCES PROGRAMS

Major in Engineering Chemistry

Coordinator: *Chin L. Ko*

The program in engineering chemistry, offered jointly by the School of Engineering and Computer Science and the College of Arts and Sciences, leads to the Bachelor of Science degree. It provides for intensive study in chemistry, along with basic preparation in engineering.

To earn the Bachelor of Science degree with a major in engineering chemistry, students must complete 128 credits, demonstrate writing proficiency (see page 25) and meet the following requirements:

		Credits
General education (excluding mathematics and science):		24
Mathematics and physics:		
MTH 154-155	Calculus	8
MTH 254	Multivariable Calculus	4
APM 257	Introduction to Differential Equations	3
PHY 151-152	Introduction to Physics	8
		23
Chemistry:		
CHM 144-145	General Chemistry	8
CHM 149	Chemistry Laboratory	2
CHM 234-235	Organic Chemistry	8
CHM 237	Separations and Spectroscopy Laboratory	2
CHM 342-343	Physical Chemistry	8
CHM 348	Physical Chemistry Laboratory	2
CHM 471	Macromolecular Chemistry	3
Plus 6 credits from:		
CHM 462-463	Inorganic Chemistry (4)	
CHM 470	Industrial Chemistry (3)	
CHM 472	Macromolecular Chemistry II (3)	
CHM 477	Molecular Laboratory (2)	6
		39
Engineering:		
EGR 101	Introduction to Engineering	1
EGR 401	Professional Engineering	1
CSE 132	Introduction to Computer Science	4
CSE 171	Introduction to Digital Logic and Microprocessors	4
EE 222	Introduction to Electrical Circuits	4
ME 221	Statics and Dynamics	4
ME 241	Thermodynamics	4
ME 331	Introduction to Fluid and Thermal Energy Transport	4
SYS 325	Lumped Parameter Linear Systems	3
		29
Plus 8 credits from:		
ME 438	Fluid Transport (4)	
ME 448	Thermal Energy Transport (4)	
ME 449	Numerical Techniques in Heat Transfer and Fluid Flow (4)	
ME 456	Energy Systems Analysis (4)	

ME 482	Fluid and Thermal Energy Systems (4)	
SYS 431	Automatic Control Systems (4)	
		8
Free electives (may be used to satisfy writing proficiency):		5

For limitations, on free electives see page 224.

Total 128

Performance requirements

In addition to the previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.0 in the courses taken to satisfy the engineering, chemistry and mathematics and physics requirements.

Major in Engineering Physics

Coordinator: *Hoda Abdel-Aty-Zohdy*

The program in engineering physics, offered jointly by the School of Engineering and Computer Science and the College of Arts and Sciences, leads to broad education in physics and mathematics, along with basic preparation in engineering.

To earn the Bachelor of Science degree with a major in engineering physics, students must complete 128 credits, demonstrate writing proficiency (see page 25), and meet the following requirements:

		Credits
General education (excluding mathematics and science)		24
Mathematics and science:		
MTH 154-155	Calculus	8
MTH 254	Multivariable Calculus	4
APM 257	Introduction to Differential Equations	3
CHM 144-145	General Chemistry	
or (CHM 164-165)		8
PHY 151-152	Introductory Physics	8
PHY 158	Physics Laboratory	2
PHY 317	Modern Physics Laboratory	2
*PHY 341	Electronics	
or (EE 326)		(4)
PHY 351	Intermediate Theoretical Physics	4
PHY 361	Mechanics I	4
PHY 371	Modern Physics	4
One of:		
PHY 331	Optics	
PHY 381	Electricity and Magnetism I	
PHY 472	Quantum Mechanics I	4
		51-55
Engineering:		
EGR 101	Introduction to Engineering	1
EGR 401	Professional Engineering	1
CSE 132	Introduction to Computer Science	4
CSE 171	Introduction to Digital Logic and Microprocessors	4
EE 222	Introduction to Electrical Circuits	4
EE 326 or	Electronic Circuit Design	
(PHY 341)		(4)
ME 241	Thermodynamics	4
SYS 317	Engineering Probability and Statistics	3
SYS 325	Lumped Parameter Linear Systems	3
Plus three 4-credit, 400-level engineering electives of the same designation, at least two of which must be chosen from the list of approved design electives.		12
		36-40

Technical electives (additional 7 to 8 credits chosen from the following):

MTH 256	Introduction to Linear Algebra (3)	
APM 263	Discrete Mathematics (4)	
PHY 318	Nuclear Physics Laboratory (2)	
PHY 331	Optics (4)	
PHY 372	Nuclear Physics (4)	
PHY 381	Electricity and Magnetism I (4)	
PHY 418	Modern Optics Laboratory (2)	
PHY 472	Quantum Mechanics I (4)	
PHY 482	Electricity and Magnetism II (4)	
EE 351	Electromechanical Energy Conversion (4)	
EE 384	Electronic Materials and Devices (4)	
ME 331	Introduction to Fluid and Thermal Energy Transport (4)	
ME 361	Mechanics of Materials (4)	
Any EGR, EE, ME or SYS 400-level courses (4-8)		7-8
Free electives (can be used to satisfy writing proficiency):		5-6
For limitations, on free electives see page 224.		
	Total	128

**Students taking PHY 341 who plan to take advanced EE courses should also take PHY 347. For these students, PHY 347 may be counted as part of the technical elective requirement.*

Approved design electives for engineering physics (Two courses are required as part of the engineering core of the degree program.):

EE 426	Advanced Electronics (4)
EE 437	Introduction to Communication Electronics (4)
EE 470	Microprocessors and Microcomputers (4)
EE 472	Microcomputer-Based Control Systems (4)
ME 454	Solar and Alternate Energy Systems (4)
ME 482	Fluid and Thermal Energy Systems (4)
ME 486	Machine Design (4)
ME 487	Mechanical Engineering CAD/CAM Systems (4)
SYS 410	Systems Optimization and Design (4)
SYS 483	Production Systems (4)

An approved EGR 490 or PHY 490 may count for one of the design electives.

Students should note that some approved design electives have prerequisites that are not automatically met by completion of the required courses in engineering. Thus, careful selection of technical electives is essential to preserve choice in later selection of design electives.

Performance requirements:

In addition to the previously stated requirements, satisfactory completion of the program requires an average grade of at least 2.0 in the engineering and computer science courses and also in the mathematics and science courses taken to meet program requirements.

Course Offerings

Courses offered through the School of Engineering and Computer Science carry the following designations: computer science and engineering courses, CSE; electrical engineering courses, EE; systems engineering courses, SYS; mechanical engineering courses, ME. Courses offered under the general title of engineering are listed under EGR.

To register for 300- and 400-level courses, students must have attained major standing.

ENGINEERING

EGR 101 Introduction to Engineering (1)

Introduction to the various disciplines of engineering. The course will be a series of weekly lectures on topics in engineering. (Graded S/U)

EGR 106 Machine Shop Practice (2)

Introduction to basic machining principles and machine shop techniques, uses of lathes, milling machines and other power machines. Emphasis is on practical experience.

EGR 108 Engineering Drawing (2)
Introduction to the use of drafting instruments and procedures. Geometric construction and projection, dimensioning, tolerancing and graphic symbols.

EGR 372 Properties of Materials (4)
The atomic, molecular and crystalline structure of solids, including a description of x-ray analysis, metallography and other methods of determining structure; correlation of structure with the electric, magnetic and mechanical properties of solids. With laboratory.
Prerequisite: CHM 144, PHY 152 and major standing.

EGR 391 Cooperative Engineering and Computer Science (1)
A seminar course for cooperative engineering and computer science students to be taken in the semester following a cooperative training assignment. A report of the training assignment must be submitted within four weeks of the beginning of the course. May be repeated up to three times.
Prerequisite: Consent of the cooperative education coordinator.

EGR 400 Engineering Seminar (1)
Lectures and discussions conducted by faculty, graduate students and speakers from industry and other universities. Emphasis is on current research interests of the school. May be taken twice.

EGR 401 Professional Engineering (1)
Seminars of professional interest to engineers, including such topics as professionalism, ethics, engineering law, engineering economics and technical communications. (Graded S/U)
Prerequisite: Senior status in engineering.

EGR 407 Environmental Engineering (4)
A design course that includes consideration of resources and recycling in terms of available energy; economic/thermodynamic combined situations are illustrated through field trips and by guest speakers. A group or individual project is required.
Prerequisite: ME 241.

EGR 490 Senior Project (2 to 4)
Independent work on advanced laboratory projects. Topic must be approved prior to registration. May be taken more than once.

EGR 494 Independent Study (2 to 4)
Advanced individual study in a special area. Topic must be approved prior to registration. May be taken more than once.

EGR 495 Special Topics (2 to 4)
Advanced study of special topics in engineering. May be taken more than once.

COMPUTER SCIENCE AND ENGINEERING

CSE 115 Natural and Artificial Languages (4)
A study of the similarities and differences among the languages of men, beasts and machines. Topics will include general characteristics of communication, human linguistic abilities, computer languages and human/computer interfaces. Identical to LIN 115. *Satisfies the university general education requirement in mathematics, logic and computer science.*

CSE 125 Introduction to Computer Use (4)
A first course in computer usage for non-engineering and computer science majors. The principal objective is to introduce the student to computer hardware, software and business applications. Topics include word processing, spreadsheets, data base management, data communications and graphics software. Programming concepts in data base languages. Problem solving methodology is emphasized. Instruction is divided evenly between lecture and computing laboratory. *Satisfies the university general education requirement in mathematics, logic and computer science.*
Prerequisite: MTH 112* or equivalent.

CSE 130 Introduction to Computer Programming (4)
Introduction to digital computers and algorithmic programming in a language such as PASCAL. Topics covered include data storage and manipulation, control structures and subprogramming. Engineering and computer science majors should enroll in CSE 132. Offered every semester. *Satisfies the university general education requirement in mathematics, logic and computer science.*
Prerequisite: MTH 112* or equivalent.

*See special information concerning this course on page 97.

CSE 132 Introduction to Computer Science (4)
Introduction to an algorithmic language such as PASCAL, numerical methods, and data structures including stacks, queues, linked lists and trees. Emphasis is on applications in engineering and computer science.
Corequisite: MTH 154.

CSE 171 Introduction to Digital Logic and Microprocessors (4)
Introduction to digital logic and microprocessors. Machine language programming of microprocessors. Use of microcomputers for laboratory data acquisition and analysis.
Prerequisite: CSE 132 and MTH 154.

CSE 201 Engineering Computer Use (1)
Microcomputer software of use to engineering and computer science students. Word processing, spreadsheets, data base management, data communications and graphics. Students cannot receive credit for both CSE 201 and CSE 125.

CSE 220 Computer-based Information Systems I (4)
Introduction to business data processing using the COBOL programming language. Emphasis is on structured programming and top-down development in an interactive environment.
Prerequisite: Ability to program in at least one high level language.

CSE 221 Computer-based Information Systems II (4)
Continuation of CSE 220. Advanced capabilities of the COBOL language are studied. Topics include report writer, relative, direct and indexed files, data dictionaries, debugging. Sophisticated business data processing systems will be programmed. Credit applies to graduation but not the major.
Prerequisite: CSE 220 or equivalent.

CSE 230-245 Programming Language Labs.
Group A:
CSE 230 Language Laboratory — BASIC (1)
CSE 231 Language Laboratory — LOGO (1)
Group B:
CSE 232 Language Laboratory — FORTRAN (1)
CSE 233 Language Laboratory — COBOL I (1)
CSE 234 Language Laboratory — COBOL II (1)
CSE 235 Language Laboratory — PASCAL (1)
(Students cannot receive credit for both CSE 235 and CSE 130 or CSE 132)
CSE 236 Language Laboratory — PL/1 (1)
CSE 237 Language Laboratory — ADA (1)
CSE 238 Language Laboratory — C (1)
CSE 239 Language Laboratory — Modula-2 (1)
Group C:
CSE 240 Language Laboratory — LISP (1)
CSE 241 Language Laboratory — FORTH (1)
CSE 242 Language Laboratory — APL (1)
CSE 243 Language Laboratory — SNOBOL (1)
CSE 244 Language Laboratory — PROLOG (1)
CSE 245 Language Laboratory — SMALLTALK (1)
Prerequisite: CSE 130 or CSE 132 or knowledge of one other high level language.

CSE 248 Systems Analysis and Design (4)
Function and responsibility of the systems analyst, including techniques in interview, charts, design, analysis, development, presentation and implementation. Other topics discussed include cost/benefit analysis, EDP auditing, COM and word processing.
Prerequisite: CSE 220.

CSE 262 Data Structures
Elementary data structures and their application in computer programming. Linear lists, arrays, trees, forests and generalized lists and their implementation using sequential and linked storage. Recursive and non-recursive algorithms for representative data structure operations. Searching and sorting.
Prerequisite: CSE 132.

CSE 280 Computer Organization and Assembly Language Programming (4)
Introduction to the internal structure and operation of a digital computer. Hardware organization, machine language, instruction execution, digital arithmetic, addressing techniques and digital representations of data. Assembly language programming; assemblers and linkers; loading relocatable modules.
Prerequisite: CSE 171.

CSE 315 Computer Parsing of Natural Language (4)
An examination of the syntactic and semantic properties of natural language and a survey of the techniques for computer parsing. Course work will include student projects in the computer analysis of language. Identical to LIN 315.
Prerequisite: LIN/CSE 115 or ALS 176, CSE 130 or CSE 132.

CSE 335 Programming Languages (4)
Fundamental concepts in programming languages studied by means of comparative language analysis. Several high-level languages are studied in some depth and their approaches to the fundamental issues in language design are compared. Issues include: data types and structures, control structures, binding times, run-time storage organization, flexibility vs. efficiency, compiled vs. interpreted languages, strong vs. weak typing, block structure and scope of names.
Prerequisite: CSE 262, CSE 280, MTH 256 and major standing.

CSE 340 File Systems Design (4)
Study of hardware configurations and software systems design for data-oriented applications. Characteristics of mass-storage devices and the impact of the characteristics on data processing algorithm design, standard file access techniques, file design for data processing applications.
Prerequisite: CSE 130 or CSE 132, junior standing.

CSE 343 Foundations of Computer Science (4)
An introduction to the theoretical foundations of computer science. Recursive functions, computability in programming languages, validity of algorithms, finite automata, Turing machines.
Prerequisite: APM 263, CSE 262 and major standing.

CSE 345 Data Base Design and Implementation (4)
An introduction to the systematic design, creation and implementation of a relational data base using microprocessor-based data base management systems such as R:base 5000 and dBase III. The course will emphasize the practical applications of data bases and the solution of real-world problems. This course is intended for people wishing a minor in computer science; it may not be used for credit toward a degree program offered by the Department of Computer Science and Engineering.
Prerequisite: CSE 130 or CSE 132, junior standing.

CSE 358 Microcomputer Systems Software (4)
Microprocessor architecture, machine code, assembly language design and programming. Detailed design of basic systems, such as I/O subroutines, monitors, text editors, assemblers, disassemblers, disk I/O, printer control, traces, relocators and hardware checkout. Software development using threaded interpretive languages.
Prerequisite: CSE 280, major standing.

CSE 388 Computer Hardware Design (4)
Boolean function minimization using Boolean algebra, Karnaugh Map and Quine McCluskey method. Combinational network design using multiplexers, decoders, encoders and priority encoders. Code converter design using adder circuits. Logical system design using PLAs and Gate arrays. Sequential system: State minimization using row matching, implication chart and next class table methods. Sequential processor design. Keyboard decoding system. Introduction to computer organization, microprogramming and microprogram-controlled computer design. Students cannot receive credit for both CSE 388 and EE 378.
Prerequisite: CSE 171, PHY 152 and major standing.

CSE 413 Pattern Recognition (4)
Applications of digital computer techniques to a variety of problems in pattern recognition. Linear decision functions, Bayes decision theory, maximum likelihood estimation, multivariate normal features, nonparametric techniques, feature selection, clustering and unsupervised learning. Applications include industrial inspection and the processing of remote sensing, biomedical and pictorial data.
Prerequisite: MTH 256, CSE 262, a course in statistics and major standing.

CSE 415 Expert Systems and Decision Support Systems (4)
Study of approaches and issues in the design of decision support systems and expert systems. Generators and building tools, knowledge representations, iterative design process, evaluation methods. A project will be assigned.
Prerequisite: CSE 262 and CSE 335.

CSE 416 Artificial Intelligence (4)
Introduction to artificial intelligence, including: 1) current techniques in AI for knowledge representation and use, search methods, means-end analysis, network systems, production systems, frames, expert systems, genetic and other learning algorithms; 2) existing applications of AI with MYCIN, NETL, DENDRAL, checker player, chess player, natural language understanding; 3) an AI project requiring the creation of a working intelligent system in the student's area of interest.
Prerequisite: CSE 335, CSE 262.

CSE 417 Applied Numerical Methods: Approximations (4)
Propagation of errors; classical methods for the solution of non-linear equations, summation of series, approximation of functions, numerical integration, numerical solution of differential equations and the Fast Fourier Transform. Emphasis on student development of general purpose subroutines for use in engineering and scientific applications.
Prerequisite: CSE 132, MTH 254 or MTH 256, and major standing.

CSE 418 Applied Numerical Methods: Matrix Methods (4)
Systems of linear and nonlinear equations, eigenvalue problems, optimization methods, statistical methods.
Prerequisite: MTH 256, CSE 131 or CSE 132, and major standing.

CSE 438 Verification of Computer Programs (4)
Introduction to systematic methods of program verification, including proving and testing. Topics include program correctness, formal verification of programs, program and system testing, software tools. A significant part of the course will be its lab component.
Prerequisite: CSE 262, APM 263 and major standing.

CSE 439 Software Engineering (4)
The course will study, in a realistic environment, the techniques and methodology of developing programs for user applications. Topics include specifications, top-down modular design, structured programming, documentation, testing and verification.
Prerequisite: CSE 262 and major standing.

CSE 445 Data Base Systems (4)
A study of the design and implementation of relational, hierarchical and network data base systems. Query/update data languages, conceptual data model, physical storage methods, data base system architecture. Data base security and integrity. Relational data base systems are emphasized. A project involving an on-line data base system is normally assigned.
Prerequisite: CSE 262 and major standing.

CSE 447 Computer Communications (4)
Emphasis on functional characteristics of digital components related to computer communications and the design of computer communications control software; telecommunication transmission facilities, signal and conversion devices, terminals, controllers, interfaces, error detection and correction, multiplexing and concentration, line control procedures and protocols, and control software; case studies include point-to-point connections between computer and terminals, local area networks and private networks, and value-added networks and digital support in the telephone system.
Prerequisites: CSE 450 or equivalent or permission of the instructor.

CSE 450 Operating Systems (4)
Introduction to computer operating systems. A multi-programming operating system is viewed as a collection of cooperating processes designed for efficient use of the resources of the computer. Process control and synchronization, memory management and device management are the major topics.
Prerequisite: CSE 262, CSE 280 and major standing.

CSE 455 Introduction to Computer Graphics (4)
An introduction to the software and hardware aspects of computer graphics systems. Vector and raster displays. Typical data structures and programming language requirements. Emphasis on real time-interactive graphics systems.
Prerequisite: CSE 262, MTH 256 and major standing.

CSE 459 System Programming (4)
Introduction to the organization of computer systems with equal emphasis on both hardware and software as complementary entities. Views a system as a multilayer, hierarchically nested family of virtual machines. Topics: machine language level; executive (kernel) level; assembly level; batch, multiprogramming and time-sharing systems; file systems; design of multilevel machines. Class project.
Prerequisite: CSE 262, CSE 280 and major standing.

CSE 464 Computer Organization and Architecture (4)
Stored program computers, organization of arithmetic-logic unit, central processing unit, main and auxiliary memory, input/output units and exercises in microprogramming. Central and distributed processing computer networks, architecture of some main frame computers and some microprocessors, parallel and pipeline processing.
Prerequisite: CSE 280 and CSE 388 or CSE 470.

CSE 465 Translation of Computer Languages (4)
The student is directed through development of a compiler for a simple language that can be executed on a simulated computer. Topics include: overview of grammars and languages; scanning input strings from a source language; parsing via bottom-up methods; internal forms for source programs; semantic routines; and symbol table organization. The compiler is constructed in a high-level language such as PL/1.
Prerequisite: CSE 262 and APM 263. Corequisite: CSE 335.

CSE 470 Microprocessors and Microcomputers (4)
Introduction to microprocessors and microcomputers; interfacing microprocessors with external systems; programming considerations; hands-on laboratory experience. Credit cannot be earned for both CSE 470 and EE 470.
Prerequisite: CSE 171, PHY 152 and major standing.

CSE 471 Design of Embedded Software Computer Systems (4)
The use of threaded interpretive languages in the design of board-level computer systems. Embedded software drivers for parallel and serial communications, A/D converters and other peripheral interface devices. Project-oriented course.
Prerequisite: CSE 470. Corequisite: CSE 241.

CSE 478 Switching Theory and Digital Logic (4)
Combinational switching functions, minimization and analysis, implementation using relay circuits, TTL, CMOS and other popular logic families. Symmetric functions, threshold logic and interactive circuits. Analysis and synthesis of clock mode, level mode and pulse mode sequential circuits. Design and implementation of digital systems. Turing machines and finite automata.
Prerequisite: CSE 388 and APM 263.

ELECTRICAL ENGINEERING

EE 222 Introduction to Electrical Circuits (4)
Resistive and dc circuits, Kirchhoff laws, Thevenin and Norton theorems, controlled sources, operational amplifiers, superpositions, source transformers. Transients in RC, RL and RLC circuits, reactance, impedance and phasors. With laboratory.
Prerequisite: MTH 155, CSE 171 and PHY 152.

EE 326 Electronic Circuit Design (4)
Semiconductor diodes; static and dynamic characteristics; diode models; applications in linear and nonlinear circuits, with diodes. Bipolar and unipolar transistors, static and dynamic characteristics; transistor models, applications of bipolar and unipolar transistors in linear amplifiers; design of small signal amplifiers; inverters. Introduction to integrated circuits; operational amplifiers and their basic applications. With laboratory.
Prerequisite: EE 222, MTH 155, PHY 152 and major standing.

EE 345 Electric and Magnetic Fields (4)
Fundamentals of electric and magnetic fields. Fundamental laws, basic postulates, Maxwell's equations, electrostatics, magnetic fields of steady currents, time varying fields and electromagnetic waves.
Prerequisite: MTH 254 and SYS 325.

EE 351 Electromechanical Energy Conversion (4)
Ferromagnetism and magnetic circuits, transformers, three-phase circuits, principles of eletromechanical energy conversion. Steady state operation of dc and ac machines.
Prerequisite: SYS 325.

EE 378 Design of Digital Systems (4)
Development of the components and techniques at the gate and flipflop level needed to design digital systems for instrumentation, communication, control and related fields. Topics include combinational logic circuits, memory devices, sequential circuits and organization of digital systems. Students cannot receive credit for both EE 378 and CSE 388.
Prerequisites: CSE 171 and EE 326.

EE 384 Electronic Materials and Devices (4)
Basic concepts of quantum mechanics as applied to electronic devices. Semiconductor physics, including carrier densities, diffusion and conduction mechanisms. Theory of P-N junction and junction devices. Also included are FET, CCD and MOS devices. Fabrication and fundamentals of integrated circuits.
Prerequisite: ECE 326.

EE 426 Advanced Electronics (4)
Transistor circuit analysis. Negative feedback in amplifiers, frequency response and stability of amplifiers, amplifier design. Linear and nonlinear amplifier circuits; analog active filters; broadband amplifiers; audio power amplifiers. Regulators in power supplies, design of regulators. Signal generators, multivibrators, function generators and their design.
Prerequisites: EE 326 and SYS 325.

EE 437 Introduction to Communication Electronics (4)
Analysis and design of analog and digital electronic data communication systems. Spectral analysis; amplitude and angle modulation; demodulation techniques; filtering; frequency- and time-division multiplexing. The sampling theorem and digital data transmission. With laboratory.
Prerequisites: SYS 325 and EE 326.

EE 470 Microprocessors and Microcomputers (4)
Introduction to microprocessors and microcomputers; interfacing microprocessors with external systems; programming considerations; hands-on laboratory experience. Credit cannot be earned for both EE 470 and CSE 470.
Prerequisite: EE 378 or CSE 418.

EE 472 Microcomputer-based Control Systems (4)
Microcomputer-aided control design techniques combined with single-chip and single-board microcomputer technology. Digital controller design and implementation; digital filtering/state estimator design and implementation; multiple processor systems and real-time applications.
Prerequisite: SYS 325, EE 326, EE 470 and programming experience.

EE 487 Integrated Electronics (4)
Crystal growth — bulk and epitaxial techniques. Fabrication of P-N junctions; ion implantation; integrated circuits technology; semiconductor materials; tunnel diodes, photodiodes; light-emitting diodes; semiconductor lasers; switching devices.
Prerequisite: EE 384.

MECHANICAL ENGINEERING

ME 221 Statics and Dynamics (4)
Introduction to mechanics, particle statics and dynamics, equilibrium, analysis of structures and dynamics of rigid bodies about fixed axes. With laboratory.
Prerequisite: MTH 155. Corequisite: PHY 151.

ME 241 Thermodynamics (4)
Introduction to the fundamental concepts, principles and analytical techniques of classical thermodynamics. Study of various forms of energy, its conversion from one form to another and the effects of both energy conversions and energy transfers on system and material properties. Macroscopic properties and thermodynamics property relationships are studied, along with the fundamental laws of thermodynamics. Application of the basic concepts and principles to engineering systems and processes. With laboratory.
Prerequisite: CHM 144 or CHM 164, MTH 155, PHY 151.

ME 321 Dynamics and Vibrations (4)
Kinematics and dynamics of systems of particles. Work and energy, impulse and momentum. Planar rigid body motion. Lagrange's equations of motion. Vibration of lumped mechanical systems. Comprehensive study of one-degree of freedom motion including torsional vibration. Applications to engineering problems.
Prerequisite: ME 221, APM 257. Corequisite SYS 325.

ME 331 Introduction to Fluid and Thermal Energy Transport (4)
Introduction to the fundamentals of fluid mechanics and heat transfer; conservation and momentum principles; viscuous and inviscid flow; laminar and turbulent flow; introduction to viscous and thermal boundary layer theory; one-dimensional conduction heat transfer and characteristics and dimensionless correlations of convection heat transfer; applications to problems of engineering interest. With laboratory.
Prerequisite: ME 221, ME 241, MTH 254 and major standing.

ME 361 Mechanics of Materials (4)
Introduction to the mechanics of deformable bodies: distribution of stress and strain in beams, shafts, columns, pressure vessels and other structural elements. Yield and fracture criteria of materials with applications to design. With laboratory.
Prerequisite: EGR 372, ME 221.

ME 438 Fluid Transport (4)
Continued study of the fundamentals of fluid mechanics and their applications, angular momentum principle; generalized study of turbomachines, potential flow of inviscid fluids, laminar and turbulent boundary layer theory, dimensional analysis and similitude, compressible flow.
Prerequisite: ME 241, ME 331 and APM 257.

ME 448 Thermal Energy Transport (4)
Continued study of basic concepts, properties and descriptions of conduction, convection and thermal radiation heat transfer; thermal boundary layer theory; forced and natural convection, convective heat transfer correlations, combined conduction convection. Thermodynamics of thermal radiation, radiation intensity, surface properties and energy exchange. With laboratory.
Prerequisite: ME 241, ME 331 and APM 257.

ME 449 Numerical Techniques in Heat Transfer and Fluid Flow (4)
Overview of practical numerical solution techniques. Major emphasis is on concepts, methodology, and physics associated with the formulation of the discretization equations appropriate for the representation and solution of linear and nonlinear partial differential equations governing heat transfer and fluid flow. Personal and mainframe computers will be used for the solution of a variety of problems.
Prerequisite: ME 438 and ME 448 or equivalent.

ME 454 Solar and Alternate Energy Systems (4)
The analysis and design of energy conversion systems. Principles of optimum power transfer and efficiency. Availability analysis of systems for heating, chemical conversion and electrical generation. Emphasis on solar applications and alternative energy technology.
Prerequisite: ME 241 and ME 331.

ME 456 Energy Systems Analysis (4)
The analysis of thermodynamic cycles including those applicable to: vapor power systems, gas turbine and reciprocating engines, and vapor-compression refrigerators and heat pumps. The concepts of available energy and irreversibility. The thermodynamics of reacting mixtures, including chemical equilibrium, applied to combustion systems.
Prerequisite: ME 241 and major standing.

ME 461 Analysis and Design of Mechanical Structures (4)
Use of methods of advanced mechanics of materials to design mechanical structures to meet elastic strength criteria. Topics include plates and shells, torsion of noncircular cross-sections, curved and composite beams, energy methods and mechanical stability.
Prerequisite: ME 361.

ME 472 Materials Properties and Processes (4)
Mechanical behavior of materials. True stress/strain properties of materials, plastic deformation and fracture of materials, failure theories, fatigue damage under cyclic loading, creep and high temperature application, destructive and nondestructive evaluation of material properties such as composites, ceramics and metals; behavior of materials during manufacturing processes such as stamping, drawing, extrusion, spinning, forging and others.
Prerequisite: ME 361 and EGR 372.

ME 482 Fluid and Thermal Energy Systems (4)
Study of systems involving fluid and thermal phenomena. Includes conventional and unconventional energy conversion, fluid and thermal energy transport. Analysis, design and optimization of systems are emphasized using basic integral, differential and lumped-parameter modeling techniques. The course bridges conventional engineering design disciplines.
Prerequisites: ME 241, ME 331 and APM 257.

ME 486 Machine Design (4)
Analysis and design of machine elements and systems. Stress, strain, strength and cost considerations. Design optimization criteria. Applications of fasteners, shrink-fits, springs, bearings, lubrication, power transmitting elements and complex structures subjected to static and/or dynamic loads.
Prerequisite: ME 361.

ME 487 Mechanical Engineering CAD/CAM Systems (4)
Introduction to the use of CAD/CAM systems in mechanical engineering design. Fundamentals of computer graphics, finite element techniques and interactive design. Use of finite elements to analyze static and dynamic mechanical systems.
Prerequisite: ME 361, ME 321 and MTH 256.

SYSTEMS ENGINEERING

SYS 317 Engineering Probability and Statistics (3)
Elements of probability for discrete and continuous random variables. Examples and problems from quality control, communication, reliability and other engineering areas.
Prerequisite: Major standing. Corequisite: MTH 254 or MTH 256.

SYS 325 Lumped-parameter Linear Systems (3)
Laplace transform methods, transfer functions and impedance concepts in the analysis of electrical and mechanical lumped-parameter linear systems. Natural and forced behavior of first- and second-order systems. Relationship between pole-zero pattern and dynamic response. Frequency response methods. Computer techniques for analysis and design.
Prerequisite: EE 222, APM 257 and major standing.

SYS 410 System Optimization and Design (4)
Introductory convexity theory, necessary and sufficient optimality conditions. Computer techniques for systems optimization and design. Direct and indirect search techniques, including line search, linear programming, unconstrained and constrained optimization. The course emphasizes a capstone design experience involving systems modeling, simulation and optimal design.
Prerequisite: MTH 256, knowledge of PASCAL or FORTRAN and major standing.

SYS 422 Intelligent Robots (4)
Overview of industrial robots and components. Geometry of robots and control. Machine intelligence. Programming languages for motion and vision. Laboratory experience with computer-controlled robots.
Prerequisite: SYS 325.

SYS 431 Automatic Control Systems (4)
Performance specifications for automatic control systems. Modeling transfer functions, signal flow graphs and Mason's gain formula. Static error coefficients, stability theory and Routh's criterion. The root locus method. Frequency response and the Nyquist criterion. Design of compensation networks.
Prerequisite: SYS 325.

SYS 433 Modern Control System Design (4)
Classical design methodology for control systems, state variable modeling, linear input/output systems, modal analysis, state feedback control, system design by pole-placement methods. The course emphasizes a capstone design project for which the student is required to model, design, implement and evaluate a controller for a physical system.
Prerequisite: SYS 431.

SYS 458 Electrical Energy Systems (4)
Generation and transmission of electrical energy systems. Analytical methods for solution of planning/operational problems with computer utilization. Analysis of synchronous machines, transformer excitation, prime mover governing, transmission networks and loads. System dynamic performance under disturbance conditions, line switching, and parameter variations with attention to frequency and voltage control strategies.
Prerequisite: SYS 325.

SYS 463 Foundations of Computer-aided Design (4)
The design of computer graphics software for electrical, mechanical and systems engineering. Raster graphics fundamentals, fill algorithms, transformations, curve generation, user input techniques and 2-D animation. Application programs using data structure are written in PASCAL.
Prerequisite: CSE 262 and major standing.

SYS 469 Simulation in Engineering (4)
Basic modeling and simulation methodology for discrete and continuous systems. The selection of input parameters and probability distributions. On-line user interactive graphical displays for output analysis and validation.
Prerequisite: CSE 262 and major standing.

SYS 483 Production Systems (4)
Computer manufacturing systems that control the flow of manufactured products from forecast to ordering; parts explosion, bill-of-material, Pareto distribution and inventory control, lead times, shop floor control, etc. All illustrated by a computer system.
Prerequisite: SYS 317.

SYS 485 Statistical Quality Control (4)
Fundamentals of statistical quality control with particular emphasis on applications. Control charts for mean and range for variable, control charts for attributes, cusum charts, runs and other process quality monitoring topics. Single, double and multiple sampling inspection plans, sequential sampling and related topics.
Prerequisite: SYS 317.

SCHOOL OF HEALTH SCIENCES

Interim Dean: *Joel W. Russell*

Office of the Dean: *Fred W. Stransky, associate dean for community health; Arthur J. Griggs, assistant to the dean; A. Jayne Hoskin, academic adviser*

Consulting professors: *Duane L. Block, David Jacknow, Joseph A. Rinaldo, Jr., Julius Rutzky, Michael R. Schwartz, Robert L. Segula, Robert R. Silver, John R. Ylvisaker, Richard J. Zunker*

Clinical professors: *Seymour Gordon, Myron M. LaBan, Gerald C. Timmis*

Clinical associate professors: *Ali A. Abbasi, George R. Gerber, Nasir Ul Haque, John R. Pfeifer, David R. Pieper, Alexander Ullman*

Clinical assistant professors: *Jaime V. Aragones, Arnold L. Brown, Nitin C. Doshi, Moufid Mitri*

The School of Health Sciences offers degree and non-degree programs in health and medically related fields. Currently, programs leading to the Bachelor of Science degree include industrial health and safety, medical physics, medical laboratory sciences, perfusion technology and physical therapy. A program leading to the Master of Science degree is offered in exercise science. Non-degree programs at the undergraduate level include exercise science and health behavioral sciences.

Health Science Core Curriculum

The health science core curriculum is a common component of introductory course work required for each of the baccalaureate programs offered through the School of Health Sciences. The core curriculum also represents an appropriate starting point for undecided health science students, since its flexibility allows for entry into any of the health science programs at Oakland University, as well as most health science degree programs at other universities.

Admission to major standing in medical laboratory sciences, perfusion technology and physical therapy is both selective and competitive. Completion of the health science core curriculum is one prerequisite for admission. Students planning to major in these areas will be classified as pre-laboratory sciences or pre-physical therapy majors until they have been granted major standing.

The programs in industrial health and safety and medical physics do not incorporate a pre-professional component; thus, students may declare either major upon entry to the university. In these cases, the core curriculum will be completed during the course of the baccalaureate program. Early completion of some of the core curriculum courses is recommended, since they are prerequisites to required advanced courses in the industrial health and safety or medical physics programs.

The academic requirements for each of the baccalaureate programs of the school are described in the pages that follow. In addition to the core curriculum, the requirements include additional prerequisite-level course work that complements the core curriculum, the program major course requirements, the university general education requirements and the university writing proficiency requirement.

Students completing the core curriculum course work at Oakland University may, in some instances, substitute equivalent or higher level courses for core curriculum courses; this action must be approved by the appropriate program director and the School of Health Sciences Committee on Instruction. Students transferring from other universities or colleges to Oakland University must have their transcripts evaluated by the School of Health Sciences to determine which core curriculum, general education or program course work requirements have been met.

Core curriculum courses*

BIO 190, 200, 321 or BIO 200, 205, 207
CHM 144-145
MTH 141 or 154
STA 225 or 226
PHY 101-102 or 151-152
HBS 200
HS 101
*See the academic requirements of the individual health science programs for core curriculum course preferences or requirements.

Course Offerings

HS 101 Careers in the Health-Related Professions (0)
Seminar/survey of professional opportunities in the various health fields such as medical technology, histotechnology, cytotechnology, nuclear medicine technology, exercise science, industrial health and safety, medical physics, physical therapy, perfusion technology, occupational therapy, respiratory therapy and pharmacy.

HS 201 Health in Personal and Occupational Environments—Ideas, Concepts, Issues and Applications (4)
Current information about the impact of environmental and life-style factors on health. Examination of issues related to human exposure to physical, chemical and biological stresses. The impact of exercise, weight control, substance abuse, nutrition and stress management on a person's ability to cope with environmental stresses will be analyzed. *Satisfies the university general education requirement in natural science and technology.*

HS 331 Pharmacology (2 or 3)
An introduction to the principles of pharmacology. Emphasis on actions of drugs affecting the cardiovascular system and commonly used in cardiac surgery. Jointly offered with NRS 230.
Prerequisite: BIO 207 or 321.

HS 361 Cardiovascular Physiology/Pathology (3)
Intensive study of the physiologic principles and disease mechanisms of the human cardiovascular system.
Prerequisite: BIO 207 or 321.

HS 363 Respiratory and Renal Physiology/Pathology (3)
Intensive study of the physiologic principles and disease mechanisms of the human respiratory and renal systems.
Prerequisite: BIO 207 or 321.

HS 400 Seminar (0)
Discussions of recent advances and topics of current interest. Graded S/U.
Prerequisite: Senior standing.

HS 401 Introductory Pathology (4)
Basic principles of human pathology appropriate for students pursuing curricula in the health related disciplines. Diseases of the major systems of the body are studied.
Prerequisites: BIO 200, 321.

HS 405 Special Topics (2, 3 or 4)
Prerequisite: Permission of instructor.

DEPARTMENT OF KINESIOLOGICAL SCIENCES

Chairperson: *Osa Jackson*

Exercise Science Program Director: *Larry S. Carr*

Physical Therapy Program Director: *Osa Jackson*

Exercise Science Graduate Program Coordinator: *John R. Stevenson*

Physical Therapy Clinical Coordinator: *Christine Pillow*

Associate professors: *Osa Jackson (Physical Therapy), Fred W. Stransky (Exercise Science)*

Assistant professors: *Larry S. Carr (Exercise Science), Kornelia Kulig (Physical Therapy), John R. Stevenson (Exercise Science)*

Special instructors: *Henry R. DeLorme (Exercise Science), Pamela A. Hilbers (Physical Therapy), Christine Pillow (Physical Therapy)*

Clinical professors: *A. Charles Dorando (Physical Therapy), Freddy M. Kaltenborn (Physical Therapy)*

Clinical associate professors: *Barry A. Franklin (Exercise Science), Murray B. Levin (Exercise Science)*

Clinical assistant professors: *Joseph A. Arends (Exercise Science), Allen L. Babcock (Physical Therapy), William R. Back (Exercise Science), John J. Karazim (Exercise Science), Frank Kava (Physical Therapy), Kristie S. Kava (Physical Therapy), John F. Kazmierski (Exercise Science), Frederick P. Maibauer (Physical Therapy), Creagh M. Milford (Exercise Science), Rajendra Prasad (Exercise Science), Thomas E. Schomaker (Exercise Science)*

Clinical instructors: *Cathy Larson (Physical Therapy), Robert C. Nestor (Exercise Science), Elizabeth Fromm Ross (Physical Therapy), Dorothy J. Smith (Physical Therapy)*

The Department of Kinesiological Sciences administers the programs in exercise science and physical therapy. These programs share many common goals in research, teaching and service that relate to the study of human motion.

Exercise Science Program

Director: *Larry S. Carr*

The exercise science program offers elective courses for students interested in the relationships among physical activity and weight control, disease prevention, stress management, nutrition and optimal health and performance.

Opportunities exist for students to establish personal programs of exercise, weight control, nutrition, stress management and substance abuse avoidance.

Disease prevention and quality of life are components of many of the course offerings. Selecting courses in exercise science can be especially meaningful to students entering a health-related career, with the recent emphasis placed on health promotion and disease prevention within the health care delivery system.

A description of the Master of Science in exercise science program is printed in the *Oakland University Graduate Catalog.*

Physical Therapy Program

Director: *Osa Jackson*

The physical therapy program has a three-fold purpose. The first is to provide an educational program that prepares students for the Bachelor of Science degree and a professional career in physical therapy. The second is to provide opportunities for the advancement of knowledge in physical therapy through research. The third is to provide service to the public. This is done, in part, through continuing education courses and lectures, and by providing a resource of physical therapy expertise. With its three-fold purpose, the physical therapy program is an integral part of the university, providing students opportunities to develop personal skills for productive citizenship, along with the professional skills of physical therapy.

Physical therapy itself is an integral part of the health care system. Physical therapists are concerned with the prevention and treatment of acute and chronic conditions that cause disorders of movement. In order to provide appropriate treatment, a thorough knowledge of the neuromusculoskeletal and cardiopulmonary systems is paramount so that patients can be knowledgeably evaluated and their problems identified. Following evaluation, a treatment program is developed to resolve the problems. Physical therapists work in concert with the referring physician and other members of the rehabilitation team.

Evaluation, prevention and treatment of movement disorders requires specific knowledge of basic and applied medical science. Such understanding is built upon a foundation of the basic sciences of biology, chemistry, physics, anatomy, physiology, kinesiology and pathology. Of equal importance is a background in the behavioral sciences, for this provides basic knowledge in the development of interpersonal relationships with patients, families and other health professionals.

Oakland University physical therapy students follow an academic program based on the educational guidelines of the American Physical Therapy Association.

Entry into the physical therapy program is competitive, and is contingent upon satisfactory completion of the health science core curriculum, required courses complementing the core curriculum, and the university general education requirement. Acceptance is based on academic performance, letters of recommendation, exposure to the profession and personal interviews. Application to the physical therapy program typically occurs in the winter semester of the sophomore year and may be initiated by Oakland University students or by students transferring from other institutions. Transfer students must demonstrate completion of a pre-professional curriculum equivalent to Oakland University's in terms of both content and semester hour total (71 semester hour credits). Transfer students are reminded that a maximum of 62 semester hour credits are transferable from a community or junior college (see page 8).

By 1990, Oakland University plans to modify the physical therapy program from its present baccalaureate curriculum to a master's degree program. Therefore, pre-physical therapy students entering Oakland University during the 1986-87 academic year should understand that the physical therapy program may change in character and requirements from its description in this catalog by the time they are eligible to apply for admission to the program. Students will be kept informed of these changes as well as any changes in prerequisites for application to the future master's-level program.

Requirements for the B.S. degree with a major in physical therapy

Students seeking the Bachelor of Science degree with a major in physical therapy must complete 162 credits through the following requirements:

1. Complete the writing proficiency requirement. In satisfying this requirement, students may need to complete RHT 100 and RHT 101 or their equivalent at another college or university. Credits associated with these courses are not included in the 162 credits required for this degree.

2. Meet the university general education requirements, as detailed on pages 25-28. In completing the health science core curriculum and major program requirements, physical therapy majors will automatically satisfy the field groups in mathematics, logic and computer science, in natural science and technology, and in social science.
3. Complete the health science core curriculum. The biology sequence of BIO 190, BIO 200 and BIO 321 is required for physical therapy majors. (Students with strong high school backgrounds in biology may place out of general biology courses. In those cases, it is strongly recommended that alternate, upper-division biology courses be substituted, such as BIO 250, 305, 323, 325 and 351.)
4. Complete BIO 322, PHY 158, PSY 100 and PSY 331, all of which complement the core curriculum.
5. Complete the major program, as follows: BIO 381 and 460; HS 331 and 401; EXS 304 and 320; PT 301, 321, 322, 323, 324, 331, 341, 342, 343, 351, 425, 432, 443, 444, 445, 446, 452 and 453.

Grade point policy

Students must maintain a 2.50 or better grade point average in course work applied to the physical therapy major. Students whose grades fall below 2.50 will be placed on probation and reviewed by the Physical Therapy Promotion and Graduation Committee. The review may result in remediation or dismissal from the program.

A final grade below 2.0 in any physical therapy course required for the major will place a student on probation. A method of remediation, to be determined by the committee, must be successfully completed in order for a student to continue in the program. All courses must be passed in sequence, and no student may advance in the program while on probation.

Students who earn a grade below 2.0 in two or more physical therapy courses will not be allowed to continue in the program.

Code of ethics

Since ethical conduct is critical to a health profession, students are required to abide by the Physical Therapy Code of Ethics and Guide for Conduct, published by the American Physical Therapy Association. Violations will be reviewed by the Physical Therapy Promotion and Graduation Committee and could result in dismissal from the program.

Course Offerings

EXERCISE SCIENCE

EXS 101 Exercise (jogging) and Health Enhancement (2)
An examination of lifestyle factors related to disease prevention and improved quality of life. This course combines regular exercise and health enhancement lectures. The mode of exercise in this course is walking-jogging. Course content in EXS 101, 102 and 104 includes the same lecture topics. Students who have received credit or who are currently enrolled in EXS 102 or 104 may not repeat the lecture material or final examination. An independent project and/or a different final examination must be completed before receiving credit.

EXS 102 Exercise (swimming) and Health Enhancement (2)
An examination of lifestyle factors related to disease prevention and improved quality of life. This course combines regular exercise and health enhancement lectures. The mode of exercise in this course is swimming. Course content in EXS 101, 102 and 104 includes the same lecture topics. Students who have received credit or who are currently enrolled in EXS 101 or 104 may not repeat the lecture material or final examination. An independent project and/or a different final examination must be completed before receiving credit.

EXS 103 Exercise (strength training) and Health Enhancement (2)
An examination of lifestyle factors related to disease prevention and improved quality of life. This course combines regular exercise and health enhancement lectures. The mode of exercise in this course is strength training.

EXS 104 Exercise (aerobics) and Health Enhancement (2)
An examination of lifestyle factors related to disease prevention and improved quality of life. This course combines regular exercise and health enhancement lectures. The mode of exercise in this course is aerobics. Course content in EXS 101, 102, and 104 includes the same lecture topics. Students who have received credit or who are currently enrolled in EXS 101 or 102 may not repeat the lecture material or final examination. An independent project and/or a different final examination must be completed before receiving credit.

EXS 180 Exercise (Judo) and Health Enhancement (2)
An examination of lifestyle factors related to disease prevention and improved quality of life. This course combines regular exercise and health enhancement lectures. The mode of exercise in this course is judo.

EXS 202 Introduction to Exercise Science (2)
An examination of graduate and occupational opportunities in exercise science. This course includes special topics in motor learning, exercise physiology, kinesiology and sports medicine.

EXS 204 Weight Control, Nutrition and Exercise (4)
Theories dealing with weight loss and nutrition including such topics as fundamental nutrition, the relationship of foods to weight control, the physiology of weight loss and the body's internal weight control mechanisms. Included are laboratory experiences to help students apply concepts. Recommended for students attempting to develop the necessary skills for successful weight loss and improved nutritional habits.

EXS 207 American Red Cross Advanced First Aid (4)
Understanding of procedures in the immediate and temporary care of victims of an accident or sudden illness. In addition, course content includes "safety-proofing" facilities and equipment.

EXS 211 American Red Cross Senior Lifesaving and Water Safety Instruction (4)
Principles and procedures for swimming, lifesaving and water safety with student participation. ARC certification upon successful completion of course.

EXS 215 Stress Management (2, 3 or 4)
Concepts and techniques to enable students to manage stress more effectively.

EXS 304 Exercise Physiology (4)
Effects of exercise and physical training on the physiological systems of the body, with emphasis on cardiorespiratory systems. Includes muscle contraction mechanisms, circulatory and respiratory adjustment during exercise, and nutrition for physical activity. Laboratory experiences are provided for insight into the dynamics of human performance.
Prerequisite: BIO 104.

EXS 320 Kinesiology (4)
This course deals with the study of the human musculoskeletal system and its functions, interrelationships, and involvement in the mechanics of human motion. Emphasis will be placed on normal function; topics in abnormalities and physical dysfunction may be included on a limited basis.
Prerequisite: Admission to Program in Physical Therapy.

EXS 350 Human Motion Analysis (4)
The study of basic mechanical and kinesiological principles and their functions, interrelationships,and involvement with the mechanics of human motion.
Prerequisite: BIO 205.

EXS 493 Independent Study and Research (1, 2, 3 or 4)
Special study areas and research in exercise science.
Prerequisite: Departmental permission.

PHYSICAL THERAPY

PT 301 Introduction to Physical Therapy (4)
Theory and practice of basic therapeutic techniques utilized in physical therapy. Includes medical emergencies, massage, mobility training, and basic communication skills.

PT 321 Physical Therapy and the Human Life Cycle I: Infancy through Adolescence (3)
This course explores human developmental progression from conception up to and including adolescence through classroom and experiential means.

PT 322 Physical Therapy and the Human Life Cycle II: Adulthood and Aging (2)
This course describes the normal age related changes from adulthood into old age in terms of physiology, psychology, sociology and environmental resources. The focus of this course is to highlight how patient assessment needs to be adapted in light of normal age related changes.

PT 323 Clinical Medicine and Physical Therapy (4)
Lecture series covering the etiology, signs and symptoms, course, treatment, and implications for physical therapy, of conditions managed by various medical specialties.

PT 324 Emotional Aspects of Disability (3)
Survey of the various factors impinging upon the patient, the family, and ultimately the patient-physical therapist relationship and what the physical therapist needs to consider when interacting with the patient or family.

PT 331 Evaluation Procedures (4)
Basic principles and techniques of manual muscle testing, goniometry, sensory and reflex testing, and neurodevelopmental assessment.

PT 341 Physical Agents (3)
Principles and use of superficial and deep heat, cold, infrared and ultraviolet radiation, and hydrotherapy in therapeutic evaluation and treatment.

PT 342 Electrotherapy (3)
Principles and use of AC and DC for therapeutic use and/or electrodiagnosis. Lecture/laboratory to include HVG's, TENS, Iontophoresis, FES, Electrodiagnosis, NCV and EMG.

PT 343 Therapeutic Exercise (4)
Theory and techniques of basic and traditional exercises including general and localized strengthening, relaxation, mobility, immobility, coordination and posture.

PT 351 Clinical Education (3)
Orientation to clinical education including the practice of basic evaluation and treatment skills through supervised experience in the clinical environment.

PT 402 Cardiac Rehabilitation and Physical Therapy (1, 2, 3 or 4)
Principles and techniques of implementing the physical therapy portion of a cardiac rehabilitation program. Includes certification in advanced cardiac life support.

PT 403 Orthopedic Physical Therapy (1, 2, 3 or 4)
Theory and techniques of orthopedic physical therapy.

PT 404 Orthopedic Physical Therapy Practicum (1, 2, 3 or 4)
A directed study dealing with the clinical application of orthopedic physical therapy.

PT 405 Special Topics (1, 2, 3 or 4)
Prerequisite: Departmental permission.

PT 406 Physical Therapy and Advanced Pediatrics (1, 2, 3 or 4)
Advanced theory and principles of physical therapy care of pediatric patients.

PT 407 Physical Therapy and Clinical Pediatrics (1, 2, 3 or 4)
A directed study dealing with the clinical application of advanced physical therapy techniques for the pediatric patient.

PT 408 Physical Therapy and Aging (1, 2, 3 or 4)
Theoretical and research perspectives of aging with emphasis on implications for physical therapy health care provision.

PT 409 Physical Therapy and Clinical Gerontology (1, 2, 3 or 4)
A directed study dealing with the clinical considerations of physical therapists working with a geriatric population.

PT 425 Physical Therapy Administration and Health Care Delivery (3)
Discussion and group experiences dealing with various aspects related to the administration of a physical therapy service including: patient care audit, policies and procedures, problem oriented medical record systems, and quality assurance.

PT 432 Research in Physical Therapy (4)
Theory and application of the principles of problem solving and the scientific method, with emphasis on current research in physical therapy, towards the completion of a small scale project.

PT 443 Cardiopulmonary System (3)
Theoretical, clinical and research perspectives to medical and surgical conditions involving the cardiopulmonary system as seen by physical therapists. Includes exercise prescription, ECG analysis, and use of clinical tools for individual assessment of a patient's cardiopulmonary status.

PT 444 Neuromuscular System (4)
Theory, principles, and application of neurophysiologic approaches to therapeutic exercise for neuromuscular problems.

PT 445 Rehabilitation Procedures (4)
Therapeutic program planning for the physically impaired (i.e. spinal cord injured, amputees, close head injured, stroke impaired) with emphasis on mobility training, activities of daily living, recreation, home evaluation, and family involvement. Includes principles and rationale for prescription of prosthetics and orthotics.

PT 446 Musculoskeletal Systems (3)
A lecture and laboratory series of medical and surgical conditions seen by physical therapists, with emphasis on orthopedic and athletic conditions.

PT 452 Clinical Education II (3)
Continuation of PT 351.

PT 453 Clinical Education III (12)
An 18-week full-time clinical experience. Occurs during the winter semester in a variety of locations. Students must provide their own transportation and living expenses.

DEPARTMENT OF LABORATORY SCIENCES

Chairperson: *Lynne Williams*

Medical Laboratory Sciences Program Director: *Lynne Williams*

Medical Physics Program Director: *Abraham R. Liboff*

Perfusion Technology Program Director: *Harry R. Hoerr, Jr.*

Medical Physics Associate Director: *Michael Chopp*

Medical Laboratory Sciences Clinical Coordinator: *Mary L. Sherman*

Perfusion Technology Clinical Coordinator: *Michael Kraemer*

Cytotechnology Directors: *Allan J. Levine (William Beaumont Hospital) and Richard J. Pollard (Harper Hospital)*

Histotechnology Director: *Abdul A. Al Saddi*

Nuclear Medicine Technology Medical Director: *Michael M. Joh*

Cytotechnology Associate Director: *Edward G. Bernacki (William Beaumont Hospital)*

Professors: *Abraham R. Liboff (Medical Physics), Norman Tepley (Medical Physics)*

Associate professors: *Michael Chopp (Medical Physics), Lynne Williams (Medical Laboratory Sciences)*

Special instructors: *Harry R. Hoerr, Jr. (Perfusion Technology), Michael Kraemer (Perfusion Technology), Mary L. Sherman (Medical Laboratory Sciences)*

Clinical professors: *Jay Bernstein (Cytotechnology and Histotechnology), Howard J. Dworkin (Medical Physics), Harold D. Portnoy (Medical Physics), Gerald C. Timmis (Medical Physics), Richard H. Walker (Medical Technology)*

Clinical associate professors: *Donovan M. Bakalyar (Medical Physics), Michael Chopp (Medical Physics), Wayne L. Eaton (Medical Technology), Norman H. Horwitz (Medical Physics), James J. Humes (Medical Technology), Barbara J. Jenkins (Medical Technology), John H. Libcke (Medical Technology), Kenneth R. Meyer (Medical Technology), Sundara B.K. Raman (Medical Technology), Taljit S. Sandhu (Medical Physics), Boris K. Silberberg (Medical Technology)*

Clinical assistant professors: *Abdul A. Al Saadi (Histotechnology), Morris I. Bank (Medical Physics), Billy B. Baumann (Medical Laboratory Sciences), William B. Fuqua (Medical Laboratory Sciences), Evelyn R. Hansen (Medical Laboratory Sciences), Michael B. Smith (Medical Physics)*

Clinical instructors: *Lois A. Beerbaum (Medical Technology), Raymond A. Carlson (Medical Physics), Mara Christiansen (Medical Technology), Dorothy Cummings (Histotechnology), Susan Dingler (Cytotechnology), James R. Ewing (Medical Physics), Deanna Dupree Klosinski (Medical Technology), Margaret M. Kluka (Medical Technology), Ross L. Lavoie (Cytotechnology), Charlene Rencher (Nuclear Medicine Technology), Joyce Salancy (Medical Technology), Carolyn A. Shalhoub (Medical Technology), Deborah Thompson (Medical Technology), John T. Waugh (Medical Technology), Robert Weimer (Histotechnology)*

The Department of Laboratory Sciences administers the programs in medical laboratory sciences, medical physics and perfusion technology.

Medical Laboratory Sciences Program

The medical laboratory sciences program is designed to prepare students for professional opportunities in a variety of clinically related fields. The four specializations within the program are cytotechnology, histotechnology, medical technology and nuclear medicine technology. All specializations are designed to provide students with a strong background in both basic and clinical sciences.

The curriculum of each specialization meets basic requirements for entry into post-baccalaureate professional programs. In clinical settings, medical laboratory scientists perform many routine and specialized laboratory tests for the purpose of developing data for the determination of the presence and extent of disease, as well as implications pertaining to the cause of disease. Cytotechnologists and histotechnologists are involved in the diagnosis of disease based on cellular or tissue alterations. Medical technologists perform a wide range of diagnostic procedures, including the various chemical, microscopic, bacteriological and immunological procedures used in the diagnosis and study of disease. Nuclear medicine technologists utilize small amouts of radioactive materials for diagnostic evaluations of the anatomic or physiologic conditions of the body and to provide therapy with radioactive sources.

Admission to the professional part of these programs is restrictive and selective, and occurs in the winter semester of the sophomore year, either by progression of students enrolled at Oakland University or by transfer from other institutions. Acceptance into the professional part of the programs is contingent upon satisfactory completion of the health science core curriculum, required courses complementing the core curriculum and the university general education requirements.

The medical laboratory sciences programs have enrollment quotas that are filled with preference to applicants judged to be best qualified to complete the programs. Admission is based on grades, personal interviews and, where appropriate, letters of recommendation.

Requirements for the B.S. degree with a major in medical laboratory sciences

Students seeking the Bachelor of Science degree with a major in medical laboratory sciences must complete 136 credits through the following requirements:

1. Complete the writing proficiency requirement. In satisfying this requirement, students may need to complete RHT 100 and RHT 101, or their equivalents, at another college or university. Credits associated with these courses are not included in the 136 credits required for this degree.
2. Meet the university general education requirements, as detailed on pages 25-28. In completing the health science core curriculum, medical laboratory sciences majors will automatically satisfy the field groups in mathematics, logic and computer science, and in natural science and technology.
3. Complete the health science core curriculum.
4. Complete BIO 322, CHM 149, CHM 203-204 and MLS 201, all of which complement the core curriculum.
5. Complete the major course requirements specified under one of the four medical laboratory sciences specializations (cytotechnology, histotechnology, medical technology or nuclear medicine technology).

Academic standing

To be accepted to major standing, students should have at least a 3.00 overall grade point average. Students with lower grade point averages may be admitted to provisional major standing pending completion of fall semester, junior year course work, in which a semester grade point average of 2.70 or higher shall be earned, with no course grade below 2.0.

Cumulative grade point

Students must maintain a cumulative grade point average of 2.70 in all course work applied o the medical laboratory sciences major.

Probationary status/non-continuation in the program

Students in the major program (specialization) will be placed on probation if they earn a rade less than 2.0 in any course or if their cumulative grade point average in major course work alls below 2.70. Students who earn a second grade less than 2.0 must have their programs reviewed y the faculty to determine remediation or termination from the program.

In order to remove probationary status, students must raise their major grade point average o 2.70 or higher.

Specialization in cytotechnology

Directors: *Allan J. Levine (William Beaumont Hospital) and Richard J. Pollard (Harper Hospital)*

Associate Director: *Edward G. Bernacki (William Beaumont Hospital)*

A cytotechnologist is a trained medical laboratory technologist who detects cell disease by ght microscopic examination of cell samples from all areas of the human body.

Students may be accepted into the cytotechnology program after completing the health cience core curriculum, the courses that complement the core curriculum and the university eneral education requirements. In the junior year, students follow the prescribed academic pro- ram at Oakland University. The senior year consists of a 12-month internship at either William eaumont Hospital School of Cytotechnology or Harper Hospital School of Cytotechnology. he program includes an integrated presentation of didactic material, microscopic study, specimen reparation, clinical observation, cytogenetics, laboratory management and a research project.

Cytotechnology specialization course requirements

Students accepted into the cytotechnology specialization must complete the following courses: IO 205, 305, 306, 307, 325, 326, 341, 393 and 423; MLS 312; and 28 credits in clinical courses, T 401 and 402.

Specialization in histotechnology

Director: *Abdul Al Saadi*

Histotechnologists perform a variety of diagnostic and research procedures in the anatomic iences. Basic histologic techniques involve the processing and staining of tissue specimens iat have been removed from humans or animals by biopsy or autopsy. Advanced techniques ivolve the use of the electron microscope, immunofluorescence microscopy, autoradiography, ytogenetics and medical photography.

Students may be accepted into the histotechnology specialization after completing the health cience core curriculum, the courses that complement the core curriculum and the university eneral education requirements. In the junior year, students follow the prescribed academic pro- ram at Oakland University. The senior year consists of a 12-month affiliation at William Beau- ont Hospital School of Histotechnology.

Histotechnology specialization requirements

Students accepted into the histotechnology specialization must complete the following ourses: BIO 205, 305, 306, 307, 325, 341, 423 and 429; MLS 312; and 28 credits in clinical ourses, HT 401, 402, 403 and 404.

Specialization in medical technology

Medical technologists perform a wide range of diagnostic procedures, including procedures in hematology, clinical chemistry, microbiology, serology, urinalysis and immunohematology (blood banking).

Students may be accepted into the medical technology program after completion of the health science core curriculum, the courses that complement the core curriculum and the university general education requirements. The junior year consists of the prescribed academic program at Oakland and the senior year consists of a 12-month affiliation at an approved hospital school of medical technology. Upon completion of the internship, the student must pass a national certification examination to become a registered medical technologist.

Currently, the following hospitals are affiliated with Oakland University: Detroit Receiving Hospital, Detroit; Garden City Osteopathic Hospital, Garden City; Harper Hospital, Detroit; Pontiac General Hospital, Pontiac; Providence Hospital, Southfield; St. John Hospital, Detroit; St. Joseph Hospital, Flint; and William Beaumont Hospital, Royal Oak. Internships have also been arranged with other Michigan hospital programs under individually approved agreements.

Medical technology specialization requirements

Students accepted into the medical technology specialization must complete the following courses: BIO 365, 421, 422, 423, 325 and 408 (or CHM 453, 454 and 457); MT 313, 314, 316, 317, 326, 327, 328; and 28 credits in clinical courses, MT 415, 416, 418, 421, 423 and 428.

Specialization in nuclear medicine technology

Medical Director: *Michael M. Joh*

Program Coordinator: *Charlene Rencher*

Nuclear medicine technologists utilize small amounts of radioactive materials for diagnostic evaluations of the anatomic or physiologic conditions of the body and to provide therapy with radioactive sources.

Students are accepted into the nuclear medicine technology program after completion of the health science core curriculum, the courses that complement the core curriculum and the university general education requirements. The junior year consists of the prescribed academic program at Oakland University. The senior year consists of a 12-month affiliation at St. John Hospital School of Nuclear Medicine Technology.

Nuclear medicine technology specialization requirements

Students accepted for nuclear medicine technology major standing must complete the following courses: BIO 325, 381, 423; PHY 158 and one additional physics course (number to be assigned); PHL 318; HS 331, 401; MLS 312; MT 326, 328; 28 credits in clinical courses, MNT 401, 402.

Medical Physics Program

Director: *Abraham R. Liboff*

Associate Director: *Michael Chopp*

The baccalaureate program in medical physics is offered jointly by the School of Health Sciences and the College of Arts and Sciences, Department of Physics.

Medical physics, a developing health-related professional field, is concerned with the use of physical techniques to diagnose and treat disease. In the past, medical physics played a vital part in the development of radiation therapy. Today, it also includes the physical aspects of x-ray diagnosis, nuclear medicine, radiation safety, ultrasonics, lasers, thermography, image intensifica

tion, EKG and EEG. Medical physics is involved in related areas, such as patient monitoring and general medical instrumentation. Much of the progress made in the last decade both in diagnosing and treating cancer can be traced directly to the increasing use of physics in medicine.

In addition to clinical duties surrounding those techniques, medical physicists engage in research and development, consultation and service, and teaching residents, hospital personnel and undergraduate students.

The medical physics program is based on a group of physics courses, with relevant biology, chemistry and mathematics courses added.

In the senior year, students take courses in the physics of diagnostic radiology and the physics of nuclear medicine. In addition, students are placed in hospitals as medical physics interns. During their internships, students assist the resident medical physicists in providing clinical medical physics support, and thereby gain direct experience in a clinical environment.

Students interested in the medical physics program should consult with the associate director for specific information and counseling.

Requirements for the B.S. degree with a major in medical physics

Students seeking the Bachelor of Science degree with a major in medical physics must complete 128 credits through the following requirements:

1. Complete the writing proficiency requirement. Up to seven credits of rhetoric course work may be counted toward the credits required for this degree.
2. Meet the university general education requirements, as detailed on pages 25-28. In completing the health science core curriculum, medical physics majors will automatically satisfy the field groups in mathematics, logic and computer science, and in natural science and technology.
3. Complete the health science core curriculum. For medical physics majors, the following courses within the core curriculum are required: BIO 200, 205, 207; MTH 154; STA 226; and PHY 151-152.
4. Complete MTH 155, MTH 254, APM 257, CHM 149, 4 additional credits in chemistry at a level not below CHM 144 and PHY 158, all of which complement the core curriculum.
5. Complete the courses required for the major, PHY 317, 318, 341, 347, 351, 361, 371, 372, 381, 441, 442, 443 and 444.

Perfusion Technology Program

Program Director: *Harry R. Hoerr, Jr.*

The perfusion technology program is a cooperative program between Oakland University and Psicor, Inc. of Brighton, Michigan. Psicor provides program support in such areas as educational staff, laboratory equipment and supplies and provision of internship sites and clinical instruction. Oakland University remains responsible for the program curriculum, selection of faculty, admission of students, approval of students recommended for degrees and all other aspects of the program concerned with academic standards.

The program in perfusion technology prepares students for careers as the professional members of surgical support teams who are responsible for extracorporeal circulation functions. Perfusion technologists work under the supervision of a physician to select appropriate equipment and techniques during any medical situation where it is necessary to support or temporarily replace a patient's circulatory or respiratory function. In this capacity, perfusion technologists monitor physiological functions and administer prescribed blood products, anesthetic agents or other drugs through the extracorporeal circuit. Perfusion technologists are knowledgeable in the use of a variety of techniques, such as hypothermia and hemodilution, as adjuncts to extracorporeal circulation.

Admission to the professional part of the program is restrictive and selective, and occurs in the winter semester of the sophomore year, either by progression of students currently enrolled

at Oakland University or by transfer from other institutions. Acceptance into the program is contingent upon satisfactory completion of the health science core curriculum, required courses that complement the core curriculum, and a sufficient portion of the university general education program to allow the student to complete the total requirement while completing the professional program.

The perfusion technology program limits each entering junior class to 24 students, with preference to applicants judged to be best qualified to complete the program. Admission is based on grades, letters of recommendation and personal interviews.

Requirements for the B.S. degree with a major in perfusion technology

Students seeking the Bachelor of Science degree with a major in perfusion technology must complete 136 credits through the following requirements:

1. Complete the writing proficiency requirement. In satisfying this requirement, students may need to complete RHT 100 and RHT 101 or their equivalents at another college or university. Credits associated with these courses are not included in the 136 credits required for this degree.
2. Meet the university general education requirements, as detailed on pages 25-28. In completing the health science core curriculum, perfusion technology majors will automatically satisfy the field groups in mathematics, logic and computer science, and in natural science and technology.
3. Complete the health science core curriculum. The biology sequence of BIO 200, 205 and 207 is required for perfusion technology majors.
4. Complete BIO 206 and CHM 203-204, which complement the core curriculum.
5. Complete the major program, including: BIO 325, MT 327; MLS 312 and 318; HS 331, 361, 363 and 401; and PFT 301, 302, 303, 310, 311, 320, 451, 452 and 453.

Academic standing

To be accepted to major standing, students should have at least a 2.50 overall grade point average. Students with lower grade point averages may be admitted to provisional major standing pending completion of fall semester, junior year course work, in which a semester grade point average of 2.50 or higher shall be earned, with no course grade below 2.0.

Probationary status/non-continuation in program

A 2.50 grade point average in the perfusion technology major course work must be maintained. A student falling below 2.50 will be placed on probation with review by the perfusion technology faculty. The review may result in a method of remediation or dismissal from the program.

A final grade below 2.0 in a perfusion technology major course places the student on probation. A method of remediation must be enacted prior to continuance in the program. All courses must be passed in sequence, and no student may advance in the program while on probation. A student earning a grade below 2.0 in two or more perfusion technology major courses cannot continue in the program.

Course Offerings

CYTOTECHNOLOGY

CT 401 Clinical Internship (14)
Microscopic study of cellular alterations indicative of cancer and precancerous conditions, bacterial, viral and parasitic infections, and hormonal abnormalities; cytogenetics; and a research project.

CT 402 Clinical Internship (14)
Continuation of CT 401.

HISTOTECHNOLOGY

HT 401 Basic Histotechnique and Histochemical Staining Methods (12)
Didactic and practicum experience in preparing histologic sections for light microscopy, including the study of over 50 different histologic and histochemical staining methods and their specific applications.

HT 402 Basic Electron Microscopy (8)
Didactic and practicum experience in basic biological electron microscopy. Electron microscopic histochemistry and special techniques are also covered. Emphasis is on the electron microscope as a medical diagnostic tool.

HT 403 Immunohisto-cytochemistry (4)
A course designed to teach basic and advanced procedures of fluorescent and enzyme-labeled antibody techniques. The course includes the preparation of tissues, staining with labeled antibodies and the use of the fluorescence microscope in clinical medicine and research.

HT 404 Cytogenetics (4)
An intensive course in human cytogenetics. Human chromosome methodology, chromosome identification and chromosomal abnormalities and their application in clinical medicine.

MEDICAL LABORATORY SCIENCE

MLS 201 Careers in Medical Laboratory Sciences (0)
An introductory seminar in medical laboratory sciences, including career opportunities in clinical settings (medical technology, histotechnology, cytotechnology, industrial sales and/or research and development, basic medical research, and education). Graded S/U.

MLS 312 Hematology/Cellular Pathophysiology (3)
Topics include current concepts of hematopoiesis, including selected topics in red blood cell, white blood cell, and platelet morphogenesis, physiology and pathophysiology; an introduction to the basic principles involved in cellular disease mechanisms.
Prerequisite: BIO 207 or 321; permission of instructor.

MLS 318 Immunohematology/Hemostasis (2)
Survey of immunohematology and hemostasis for non-medical laboratory sciences majors.
Prerequisite: BIO 207 or 321.

MLS 405 Special Topics (1, 2, 3 or 4)
Prerequisite: Permission of instructor.

MLS 451 Clinical Education (6)
Prerequisite: Permission of instructor.

MLS 490 Individual Laboratory Work (2, 3, 4)
Prerequisite: Permission of instructor.

MLS 497 Apprentice College Teaching (2)
Directed teaching of selected undergraduate courses. May be repeated for credit. Graded S/U.
Prerequisite: Permission of instructor.

MEDICAL TECHNOLOGY

MT 313 Immunohematology (2)
Discussion of the immunologic and genetic basis for the study of red cell antigen/antibody systems, including physiologic and pathophysiologic consequences of foreign antigen exposure. Laboratory included.
Prerequisite: BIO 207 or 321; permission of instructor.

MT 314 Hemostasis (2)
In depth study of the basic physiology and pathophysiology of the human hemostatic system. Laboratory included.
Prerequisite: BIO 207 or 321; permission of instructor.

MT 316 Medical Hematology (4)
Theory and techniques in hematology, including red blood cell, white blood cell and platelet morphogenesis, physiology, and pathophysiology.
Prerequisite: BIO 207 or 321; permission of instructor.

MT 317 Hematology Laboratory (1)
To accompany MT 316.
Prerequisite: Permission of instructor.

MT 326 Instrumentation and Analytical Concepts (2)
An introduction to the theoretical and practical aspects of clinical instrumental analysis. Includes practical experience in the calibration, operation, and preventive maintenance of laboratory instruments. Laboratory included.
Prerequisite: Permission of instructor.

MT 327 Clinical Chemistry (3)
A theoretical introduction to the fundamentals of clinical chemistry with emphasis on pathophysiology and clinical correlations.
Prerequisite: BIO 325.

MT 328 Clinical Chemistry Laboratory (1)
Provides practical experience in the application of clinical instrumentation and current clinical methodologies to the performance of clinical chemistry assays.
Prerequisite: Successful completion of MT 326 with grade of 2.0 or better.

MT 415 Clinical Practicum — Urinalysis/Coagulation (3)
Didactic and practicum experience at an affiliated hospital school of medical technology, in the fields of urinalysis and coagulation.
Prerequisite: Permission of instructor.

MT 416 Clinical Practicum — Hematology (5)
Didactic and practicum experience at an affiliated hospital school of medical technology, in the area of hematology.
Prerequisite: Permission of instructor.

MT 418 Clinical Practicum — Immunohematology (4)
Didactic and practicum experience at an affiliated hospital school of medical technology, in the field of immunohematology.
Prerequisite: Permission of instructor.

MT 421 Clinical Practicum — Microbiology (7)
Didactic and practicum experience at an affiliated hospital school of medical technology, in the field of medical microbiology, including parasitology and mycology.
Prerequisite: Permission of instructor.

MT 423 Clinical Practicum — Serology (2)
Didactic and practicum experience at an affiliated hospital school of medical technology, in the field of serology.
Prerequisite: Permission of instructor.

MT 428 Clinical Practicum — Chemistry (7)
Didactic and practicum experience at an affiliated hospital school of medical technology, in the field of clinical chemistry.
Prerequisite: Permission of instructor.

NUCLEAR MEDICINE TECHNOLOGY

NMT 401 Clinical Internship I (14)
Prerequisite: Permission of instructor.

NMT 402 Clinical Internship II (14)
Continuation of NMT 401.

PERFUSION TECHNOLOGY

PFT 301-303 Perfusion Technology Seminar (2 each)
Introduction to perfusion technology including such topics as: role, operating room environment, aseptic techniques, and blood handling and processing.

PFT 310 Principles of Perfusion Technology (5)
Components of extracorporeal circuit, relationship between circuit and patient, gas transfer, filter theory and design, cardiovascular fluid dynamics, hemodilution, hypothermia, myocardial protection and pediatric perfusion.

PFT 311 Perfusion Technology Laboratory (3)
Laboratory to accompany PFT 310.
Corequisite: PFT 310.

PFT 320 Perfusion Monitoring Systems (4)
Biomedical monitoring systems for cardiac patient care and surgery; systems functions, reliability and maintenance; basic principles of electronics.
Prerequisites: HS 331 and 363.

PFT 451-453 Clinical Education I-III (6 each)
Didactic and practicum experience at an affiliated hospital. Each practicum runs 12 weeks and is at a different hospital.
Prerequisites: PFT 310, 311 and 320.

OTHER ACADEMIC PROGRAMS

Health Behavioral Sciences Program

Director: *Carl R. Vann*

Professors: *Philip Singer, Carl R. Vann*

Visiting associate professor: *Robert W. Jarski*

Clinical professor: *Daniel E. DeSole*

Clinical associate professor: *Ruben S. Kurnetz*

Clinical assistant professors: *Michael N. Musci, Anthony R. Thersigni*

Courses in health behavioral sciences are recommended as electives for students pursuing degree programs offered by the School of Health Sciences. Students interested in a program in health services administration should consult the Department of Political Science in order to combine courses in health behavioral sciences with a program in public administration.

Concentration in Health Behavioral Sciences

The concentration in health behavioral sciences should be taken in conjunction with a regular departmental major or independent major. Its purpose is to offer a multidisciplinary perspective of the behavioral sciences on the many and varied aspects of the health disciplines, problems and concerns. It provides a cross-cultural as well as an American perspective. It is especially relevant to students seeking careers in health-related fields and it offers significant insights and opportunities for study to students pursuing programs in general education, administration and law.

The requirement for the concentration in health behavioral sciences is successful completion of 20 credits, chosen from: HBS 200, 250, 251, 300, 400 and 499; AN 333 and 420; ECN 467; PS 359; PA 568 and 569; and SOC 368.

Students in the premedical program and majors in any of the natural sciences may, with an adviser's approval, count 4 credits of their major course work toward this concentration.

Course Offerings

HBS 200 Health Care Dimensions (4)
Development, present status, and dynamics of the American health care system emphasizing structure of the various health professions and the problems, opportunities, and constraints of health care delivery, and professionalism. Other topics are relationships between the health care cultures and personality and professional roles of health care practitioners, and issues involving hospitals and health care.

HBS 250-251 Health Behavioral Sciences (4 each)
Human behavior, institutions, and professions in the health-medical fields. Emphasis on concepts of health and illness, death and dying, the sick role, doctor-patient relationships, organization and delivery of health care.

HBS 300 Independent Study in the Health Behavioral Sciences (4, 8, 12 or 16)
A semester of off-campus independent study and applied research. Projects are developed with and supervised by faculty within the framework of methodology and explanation in the behavioral sciences.

HBS 359 Public Policy and Health Care (4)
An examination of the status and evolution of public policies relating to health and health care, the policy-making processes in health care and the various implications of trends in health care policy. Identical with PS 359.

HBS 400 Field Practicum in Health Behavioral Sciences (4, 8, 12 or 16)
Primarily for students seeking careers in health-related fields, this course is a supervised field placement combined with academic content and individually guided research. Students are placed with hospitals, government and voluntary health agencies, comprehensive medical service organizations, etc.

HBS 499 Senior Seminar in Health Behavioral Sciences (4)

Industrial Health and Safety Program

Program director: *Uwe Reischl*

Associate professor: *Use Reischl*

Assistant professor: *Richard Rozek*

Clinical associate professor: *Joseph P. Chu*

Clinical assistant professors: *Joseph A. Calcaterra, Daniel Fink, May C. Ng, David S. Sugano*

The Bachelor of Science degree program in industrial health and safety addresses the interests and aspirations of students seeking responsible involvement in the field of occupational health and safety. State-of-the-art concepts in industrial hygiene and occupational safety are presented with relevant exposure to the basic physical, chemical, biological and behavioral science disciplines. The program is multidisciplinary in nature and provides advanced specialized perspectives in the form of three course groupings: physical/life science, social/behavioral science and work organization.

The curriculum is designed as a four-year baccalaureate program. However, students can obtain certificates after completing the industrial health and safety core sequence of courses. This normally involves the successful completion of the first four semesters of course work.

A one-semester internship is required for both the certificate and the Bachelor of Science degree. This internship provides first-hand field experience in the practice of industrial hygiene and occupational safety. Internship placements will be the responsibility of the program and will include labor, industry and government settings.

Graduates of the program will find employment opportunities within industry, labor, and local, state and federal health agencies. Many courses in this program are scheduled in the evening to accommodate part-time students.

Requirements for the Bachelor of Science degree with a major in industrial health and safety

Students seeking the Bachelor of Science degree with a major in industrial health and safety must complete 136 credits through the following requirements:

1. Complete the writing proficiency requirement. Up to six credits of rhetoric course work may be counted toward the credits required for this degree.
2. Meet the university general education requirements, as detailed on pages 25-28. In completing the health science core curriculum, industrial health and safety majors will automatically satisfy the field groups in mathematics, logic and computer science, and in natural science and technology.
3. Complete the health science core curriculum. The biology sequence of BIO 200, BIO 205 and BIO 207 is preferred.
4. Complete CHM 203-204 and PHY 158, which complement the core curriculum.
5. Complete the major courses: HS 201 (or IHS 100 and IHS 110), and IHS courses numbered 201, 202, 211, 212, 303, 304, 330, 420 and 440.
6. Complete HST 302.
7. Earn 16 credits in one of the three perspective options: physical/life science, social/behavioral science, or work organization. Perspective courses may not be counted toward both the general education requirements and this requirement.

Industrial health and safety program perspectives

As a requirement for the Bachelor of Science degree in industrial health and safety, students must successfully complete 16 credits in one of three perspective options. Twelve or more of the credits must be in courses at the 300-level or above. (This, along with the 20 credits of 300-level or above courses required in the curriculum, satisfies the university requirement of completing 32 credits at the 300-level or above.)

The option programs are designed to be flexible. The School of Health Sciences continuously revises the list, with close consultation of the involved areas. Introductory (100-level) courses listed in options B and C may be waived for some students who have demonstrated preparation for upper-level courses.

Students should seek an adviser's counseling and guidance when selecting a program perspective and when planning the courses to fulfill the requirement.

Option A: Physical/life science perspective: Choose from BIO 319, BIO 325, BIO 341, EXS 304, CHM 225, ENV 308, ENV 312, ENV 355, ENV 372, ENV 373, ENV 390, ENV 461, ENV 484, ENV 486, PHY 241, PHY 242, PHY 243, CSE 125, IHS 313, IHS 421, IHS 450, IHS 451, IHS 452 and IHS 453.

Option B: Social/behavioral sciences perspective: Choose from HBS 400, AN 333, AN 392, AN 420, PSY 100, PSY 350, PSY 351, PT 324, CSE 125, SOC 100, SOC 345 and SOC 357.

Option C: Work organization perspective: Choose from ECN 150, ECN 309, ECN 310, ECN 326, ECN 328, ECN 338, ECN 347, ORG 330, PS 350, IHS 431 and CSE 125.

Grade point policy

Industrial health and safety majors must achieve minimum course grades of 2.0 in required IHS courses. A final course grade below 2.0 places a student on probation, which requires a meeting with the program director or his designated representative to discuss a method of remediation. In most cases, the method of remediation involves repeating the course in which the unsatisfactory grade was earned.

Certificate option

A certificate in industrial health and safety may be issued to students who complete the core sequence and basic science courses. A minimum of 68 credits must be completed, including the following courses: HS 201 (or IHS 100 and IHS 110), IHS 201, IHS 202, IHS 211, IHS 212, IHS 240, IHS 304, MTH 141, CHM 144-145, PHY 101, PHY 102, PHY 158, RHT 100 and RHT 101.

Minor in industrial health and safety

Students seeking the Bachelor of General Studies who complete the requirements for the certificate option in industrial health and safety are eligible to receive a minor in industrial health and safety. Students should apply for this minor with forms available from the general studies office.

Course Offerings

IHS 100 Industrial Hygiene I (4)

Introduction to current concepts and issues in industrial hygiene and occupational health. Principles of recognition, evaluation, and control of hazards in the work environment. Environmental standards, environmental and biological monitoring, OSHA, worker productivity, threshold limit values.

IHS 110 Industrial Safety I (4)

Introduction to current concepts in safety engineering. OSHA standards, human factors, accident investigation techniques, fault-tree analysis, legal aspects of safety.

IHS 201 Industrial Hygiene II (4)
Methods of environmental testing. Evaluation of occupational stresses found in selected work environments. Noise, heat, ventilation, microwave radiation, ionizing radiation, illumination. The role of labor and management in controlling environmental quality.
Prerequisites: IHS 100 or HS 201, CHM 144.

IHS 202 Industrial Hygiene III (4)
Advanced methods of environmental testing. Focus on air contaminants in the work environment. Analysis of toxic fumes and gases, dusts, and fibers. Analytical techniques for laboratory and field applications.
Prerequisites: IHS 100 or HS 201, CHM 145, MTH 141 or 154.

IHS 211 Industrial Safety II (4)
Safety assessment for occupational environments. Analytical techniques. structural analysis, strength of materials, electrical safety, fire life-safety, medical management of injuries, personal protective clothing.
Prerequisite: IHS 110 or HS 201.

IHS 212 Industrial Safety III (4)
Introduction to concepts in security and protection of property, disaster response planning, hazardous materials handling during transport. Safety planning and management. Report preparation, writing, and oral presentations.
Prerequisite: IHS 110 or HS 201.

IHS 240 Industrial Health and Safety Internship (4)
Practical training and field exposure to industrial work settings. Intended only for students seeking the certificate in IHS.
Prerequisite: Departmental permission.

IHS 303 Industrial Toxicology (3)
Introduction to the basic concepts and techniques of toxicology with special attention given to industrial work environments. Evaluation of the effects of toxic substances on the human body. Focus on responses of various systems within the body to selected toxic agents.
Prerequisites: IHS 202, CHM 204, BIO 207.

IHS 304 Introduction to Epidemiology (3)
An introduction to the uses of epidemiology in public health practice, using selected diseases to illustrate the development of knowledge on disease causation and the application of such knowledge to disease control.
Prerequisite: IHS 202.

IHS 312 School Safety and Health (2)
Analysis of accident causation and prevention in school facilities. Study of federal, state and local codes which apply to safety and health in schools. Review of concepts, methodology and procedures for assessment of safety and health hazards in school science laboratories and vocational education and training facilities. Identical with VTE 312.
Prerequisite: Departmental permission.

IHS 313 Fire Prevention and Protection (2)
Fundamentals of flame generation and propagation; fire behavior in open and confined spaces; theory of fire fighting methods; methods and devices for fire detection and suppression.
Prerequisites: IHS 202, IHS 212.

IHS 330 Environmental Standards (3)
Examines ambient and work place air, noise, radiation, water and pesticide standards. Topics will be analyzed in terms of standard development, enforcement at state and federal levels, and the validity of the standard's ability to protect health.
Prerequisites: IHS 202, IHS 212, PHY 102, PHY 158.

IHS 403 Industrial Toxicology II (3)
Detailed discussions on how various environmental and industrial toxicants affect animal models and humans. Major areas of concentration will center around environmental pollutants, industrial chemicals, solvents, and metals, and how various systems within the body respond to these toxic agents.
Prerequisite: IHS 303.

IHS 405 Special Topics (2, 3 or 4)
Prerequisite: Permission of instructor.

IHS 420 Public Health Engineering (3)
Planning, design, and survey of factors related to the physical aspects of environmental health with particular reference to industrial pollution control for water and air, waste, and life-safety in buildings.
Prerequisites: IHS 202, CHM 144, MTH 141 or 154.

IHS 421 Human Factors in Lighting (2)
Presents information related to the basic science of light and vision with emphasis on the relationship between light and work. The course is designed to provide knowledge of lighting fundamentals and to provide lighting design skills relevant to industrial work settings.

IHS 431 Regulatory Aspects of Safety (3)
Survey of regulatory basis of accident prevention requirements; federal laws, codes, standards, court judgments, and procedures; case studies; worker influences.
Prerequisites: IHS 212, IHS 330.

IHS 440 Advanced Industrial Health and Safety Internship (4)
Field training in industrial safety and health in close collaboration with professional industrial hygiene and safety personnel. Exposure to health and safety program planning and evaluation. Graded S/U.
Prerequisite: Departmental permission.

IHS 450 Robotic Safety (2)
Information and issues related to worker safety in industrial environments where robots are used will be presented. The state-of-the-art of advanced automation will be surveyed with emphasis on system safety and injury prevention features required to assure an adequate worker/robot interface.
Prerequisite: Departmental permission.

IHS 451 Industrial Ventilation (2)
Design and control applications for reducing worker exposure to airborne contaminants. Concepts and principles of dilution and local exhaust ventilation will be presented. Methods for assessment of industrial ventilation systems required to prevent the accumulation of flammable or explosive concentrations of gases, vapors, or dusts.
Prerequisite: Departmental permission.

IHS 452 Industrial Noise Control (2)
Concepts in engineering controls required in the management of noise overexposure in industrial environments. Analysis of engineering design options and mechanical modifications effective in controlling worker exposure to undesirable industrial noise will be presented.
Prerequisite: Departmental permission.

IHS 453 Radiation Safety (2)
Safety aspects of occupational hazards associated with the use of ionizing radiation in industry will be presented. Methods for the identification, evaluation, and control of potential worker overexposure conditions will be reviewed. Biological effects of acute and chronic worker exposure will also be reviewed.

IHS 490 Independent Study (1, 2, 3 or 4)
Student initiated and problem-oriented independent study focusing on occupational health and safety issues. Graded S/U.
Prerequisite: Departmental permission.

SCHOOL OF HUMAN AND EDUCATIONAL SERVICES

Dean: *Gerald J. Pine*

Office of the Dean: *Donald M. Miller, associate dean; Nancy Collins, coordinator, advising center; Jean Goebel, adviser; Jean Kirsch-Sullivan, administrative assistant to the dean*

Continuum Center: *Elinor Waters, director; Roberta "Jeff" Daily, coordinator of volunteers; Jane Goodman, associate director; Judith Hoppin, counselor/trainer; Nancy Schochetman, counselor/trainer; Mary Lou Stone, coordinator, Older Adult Project*

Ken Morris Labor Studies Center: *David Cooper, director; Dee Lyons, assistant director; Joseph Bosbous, program specialist, Health and Safety Program; Irene Lopez, program specialist, Union Minorities/Women Leadership Training Project; Symantha Myrick, program specialist; Victor Negrete, program specialist; James Pauley, assistant administrator, Union Minorities/Women Leadership Training Project*

Lowry Early Childhood Center: *Gerald G. Freeman, director; Stephanie C. Riley, program coordinator*

Office of Research and Development: *Edward A. Bantel, co-director; Donald M. Miller, co-director*

Office of School and Field Services: *Harry T. Hahn, director; Geraldine Palmer, coordinator*

Resource Center; *Laura Snider-Feldmesser, director*

Professors: *Edward A. Bantel, Jane M. Bingham, Harold C. Cafone, George E. Coon, Ronald L. Cramer, Gerald G. Freeman, Sidney W. Graber, Harry T. Hahn, W. Dorsey Hammond, James W. Hughes, Jacqueline I. Lougheed, Donald M. Miller, William F. Moorhouse, Gerald J. Pine, Roderic E. Righter, Howard H. Splete*

Associate professors: *John W. Atlas, Richard F. Barron, Gloria T. Blatt, Marc E. Briod, Robert W. Brown, Robert J. Christina, F. James Clatworthy, Anne Cairns Federlein, William C. Fish, Patrick J. Johnson, William H. Jones, David P. Meyer, Billy Jo Minor, Mary L. Otto, Robert G. Payne, James C. Schmidt, Robert M. Schwartz, Ronald M. Swartz, Carol A. Swift*

Assistant professors. *L. DiAnne Borders, David C. Housel, Anne P. Jaworski, John Orehovec, Lou Ellen Ramey*

Adjunct associate professors: *Jeffery A. Kottler, Elinor Waters*

Board of Visitors

The Board of Visitors of the School of Human and Educational Services is composed of outstanding leaders in the field of education and human services. The Board of Visitor's role is to advise and counsel the dean and faculty of the school. The board also assists the school in providing programs responsive to the learning and training needs of the public schools and human service agencies as they cope with changing society in the complex technological and diverse culture of southeastern Michigan.

Members of the Board of Visitors are:

Lillian Bauder, president, Cranbrook Educational Community
Edwin Crandall, consultant, Rochester Community Schools
Beverly Geltner, associate superintendent, Southfield Public Schools

William G. Keane, superintendent, Oakland Intermediate School District
Byron K. Love, deputy superintendent, Pontiac School District
Robert Lutz, superintendent, Macomb Intermediate School District
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Linda Novotney, director, corporate training and development, J.L. Hudson Company
John Pagen, superintendent, Warren Consolidated Schools
Dana Whitmer, special assistant to the president, Oakland University
Charles T. King, professional development/human rights department, Michigan Education Association

Continuum Center

The Continuum Center is an adult counseling center that assists men and women of all ages in personal exploration and planning. Workshops for personal, career and professional development are offered, as well as individual counseling. Workshops and training in such areas as assertiveness training, career or retirement planning and communications also are offered on a contractual basis.

Lowry Early Childhood Center

The Lowry Early Childhood Center provides care to young children, toddlers through kindergarten-age. The center is a research facility for students and faculty concerned about child growth and development. It is a training site for students enrolled in the School of Human and Educational Service human development and child studies programs.

Ken Morris Labor Studies Center

The Ken Morris Labor Studies Center sponsors daytime and evening courses for union members and the general public in both on- and off-campus locations. It also offers occasional residential conferences. A special leadership training program for union minorities and women and a health and safety program are supported by state grants.

Office of Research and Development

The Office of Research and Development facilitates action research and professional development conducted in collaboration with schools, school districts, education service agencies and other institutions and organizations. Field-based studies on teaching and learning are carried out in cooperation with school building and program teams at the preprimary, elementary and secondary school levels. Examinations are made of alternative practices in instruction, curriculum and professional development. Outstanding practitioners are occasionally affiliated as teacher-researchers for selected studies and projects.

Office of School and Field Services

The Office of School and Field Services is responsible for the coordination of all off-campus sections of graduate education courses, as well as the placement of pre-service interns and special education practicum students. Special credit offerings, educational forums and conferences also are coordinated through this office.

Resource Center

The Resource Center provides support for the academic, research and development activities of the School of Human and Educational Services. Patrons are provided with a functional set-

ting for the examination, study, research, development, production and evaluation of instructional materials and technologies. Workshops, seminars and consultation services in instructional technology are available.

Graduate Studies

The School of Human and Educational Services offers programs leading to the Doctor of Philosophy in reading, the Education Specialist in education administration, the Master of Arts in counseling, and the Master of Arts in Teaching in four areas: early childhood; curriculum, instruction and leadership, reading and language arts education; and special education.

In addition, programs leading to Master of Arts in Teaching degrees in mathematics and English are offered jointly by the School of Human and Educational Services and the College of Arts and Sciences. The School of Economics and Management also offers a Master of Business Administration degree for superior undergraduate students in any major. Oakland University undergraduate students studying for a major in an area other than management may earn both an undergraduate degree and the M.B.A.

For information on these programs, see the *Oakland University Graduate Catalog.*

Undergraduate Curriculum

The School of Human and Educational Services offers programs designed to prepare students for careers in teaching and related human service activities. The programs include a Bachelor of Science in elementary education, teaching certification for secondary education in social studies or music, and a Bachelor of Science in human resources development with specialization in human development and child studies, youth and adult services, and training and development.

Advising

All students must meet with an adviser to plan their programs. The Elementary Education and Secondary Social Studies Advising Office is in 402 O'Dowd Hall, 370-4182. The Human Resource Development Advising Office is in 137 O'Dowd Hall, 370-3066 or 370-4170.

The elementary education program

The elementary education program enables students to secure Michigan teaching credentials that certify them to teach all subjects in grades K-8 and the ninth-grade subject areas of students' major or minor fields.

The program is approved by the National Council for Accreditation of Teacher Education (NCATE).

A suggested sequence for freshmen planning to major in education follows:

Fall semester: RHT 100, MTH 111,* general requirement in international studies, ALS 176. Winter semester: RHT 101, MTH 112,* general requirement in fine arts, and one of ENG 100, ENG 224 or ENG 241.

*See information concerning these courses on page 97.

Admission to the major

Application for admission to the elementary education major occurs during the fall or winter semester of the pre-elementary (sophomore) year. Students wishing to be considered for admission must file an application with the Department of Curriculum, Instruction and Leadership. Students seeking admission also will be required to take the Pre-professional Skills Test prior to admission. Candidates should contact the Department of Curriculum, Instruction and Leadership for the scheduled testing times during the semester they file their applications.

Minimum criteria for admission to the elementary education program:

1. Admission to and retention in Oakland University.
2. Minimum grade point average of 2.50 in non-professional course work.
3. Completion of ED 110, ED 210, ED 215 and SCS 105, with a minimum grade of 2.8 in each course. However, because space in the program is limited, a 2.8 grade point does not guarantee admission.
4. Results of the Pre-professional Skills Test must be on file.
5. Completion of an application for major standing.

Continuation in the major

Once admitted to the major, a student is considered a pre-service teacher.

Minimum criteria for continuation in the elementary education program:

1. Students are expected to demonstrate the characteristics of and to conduct themselves as members of the teaching profession.
2. Students must earn a minimum grade of 2.8 in each professional course.

Requirements for the Bachelor of Science degree in elementary education

To earn a Bachelor of Science degree with a major in elementary education, students must:

1. Complete 124 credits.
2. Complete at least 32 credits at Oakland University.
3. Complete at least 32 credits in courses at the 300-level or above.
4. Take at Oakland University the last 8 credits needed to complete the baccalaureate degree requirements.
5. Have a cumulative grade point average of at least 2.50.
6. Satisfy the writing proficiency requirement as described on page 25.
7. Complete the university general education requirement of 32 credits, as described on pages 25-28.
8. Be in substantial compliance with all legal curricular requirements.
9. Complete or place out of by examination MTH 112*; pass the School of Human and Educational Services writing competency exam.
10. Complete a professional program of 54 credits.
11. Complete a major concentration of 36 credits or two minor concentrations of 24 credits each in a field outside education.
12. Complete ED 455.
13. Complete a media competency requirement.

* See information concerning this course on page 97.

Additional general education requirements for elementary education majors

Within the mathematics field group for general education credits, students seeking elementary certification must take one course listed plus an additional course approved by the academic adviser. All of these courses carry a prerequisite proficiency in algebra at the same level as MTH 111* or MTH 112.* An examination must be taken to demonstrate proficiency or the appropriate prerequisite class must be taken, with the credit not counting toward minimal graduation requirements.

Within the natural sciences field group for general education credits, students seeking elementary education certification must take BIO 300 or an equivalent approved by the academic adviser.

In addition, students must take SCS 105 prior to admittance to the School of Human and Educational Services.

* See information concerning these courses on page 97.

Professional program courses

Courses offered as part of the professional program are: ED 110, ED 210, ED 215, ED 302, ED 331, ED 333, ED 354, ED 355, ED 396, ED 414, ED 420, ED 455, ED 163, SCS 305 and SS 470.

Majors and minors

One major or two minors are required as part of the elementary education program. Group majors (36 credits) and minors (24 credits) are offered in fine arts, history/social science, language arts, modern language, science. A major (30 credits) and minor (20 credits) also are offered in math.

Lists of approved courses are available in the education advising office, 402 O'Dowd Hall.

Teaching Certification for Secondary Education

Students interested in a secondary teaching major should consult the chair or chief adviser of the major department in which they are interested.

At present, the College of Arts and Sciences offers Bachelor of Arts degrees with certification for secondary teaching credentials provided by the School of Human and Educational Services in two areas: social studies and music.

Teaching minors are available in the following subject areas: biology, chemistry, English, history, mathematics, modern languages, music, physics, political science, psychology, science, social studies, sociology, speech (see communication arts).

NOTE: Teaching minors in political science, psychology and sociology are available for social studies majors only.

Sponsorship for Michigan Teacher Certification

The Michigan Department of Education certifies teachers in the state. It issues provisional certification to candidates deemed qualified by colleges and universities. This provisional certificate can be converted to a continuing certificate after a period of teaching and additional studies. (For information, see the *Oakland University Graduate Catalog.*)

Oakland University sponsors its graduates for the provisional elementary and provisional secondary certificates when certain requirements are met.

The requirements for sponsorshop for the provisional elementary certificate are the same as the degree requirements for a Bachelor of Science in elementary education. Further, students must complete ED 455 (internship) with a grade of 2.5 or better.

The requirements for sponsorship for the secondary certificate in social studies or music follow: Students must complete a university baccalaureate degree with an approved teaching major and one approved teaching minor, as well as successfully complete ED 110, ED 344, ED 345, ED 338, ED 427 and ED 428. Social studies majors must also complete ED 370 and ED 354. Further, all students must complete ED 455 (internship) with a grade of 2.5 or better.

Human Resources Development

The School of Human and Educational Services offers a program in human resources development (HRD) leading to a Bachelor of Science degree.

This program prepares students for service-action careers related to human problems, services and social change. It provides students with an opportunity to acquire knowledge and skills usable in a wide range of human service activities. Students may select a major specialization in youth and adult services, training and development or human development and child studies.

A primary goal of the program is to develop potential leaders who have the analytic abilities, communication and organization skills, and experimental know-how to respond to human needs

in an era of rapid social change. The basic approach to the program is joining understanding, skills and service. Problem-solving and decision-making abilities are developed through field experiences and on-the-job internships.

Requirements for the Bachelor of Science degree in human resources development

To earn a Bachelor of Science degree with a major in human resources development, students must:

1. Complete 124 credits.
2. Complete at least 32 credits at Oakland University.
3. Complete at least 32 credits in courses at the 300-level or above.
4. Take at Oakland University the last 8 credits needed to complete the baccalaureate degree requirements.
5. Have a cumulative grade point average of at least 2.50.
6. Satisfy the writing proficiency requirement as described on page 25.
7. Complete the university general education requirement of 32 credits, as described on pages 25-28.
8. Be in substantial compliance with all legal curricular requirements.
9. Complete a specialization of at least 64 credits in human development and child studies, training and development, or youth and adult services. The specialization must consist of: 24-32 credits in a specified core of courses; 24-28 credits in supporting cognate courses; and 8-12 credits in internships.
10. Complete 20-28 credits in elective courses.

Specialization in human development and child studies

Coordinator: *Edward Bantel*

Committee: *Anne Federlein, Gerald Freeman*

The human resources development degree program with specialization in human development and child studies develops competencies for design, evaluation and licensure of child care facilities and direction of child care centers, family and day care and group day care homes. The program also provides education for training parents and paraprofessionals in the care and education of young children, as well as for dealing effectively with young children and their development in a variety of settings.

Requirements for admission to the specialization

Students may apply for admission to the human development and child studies program after satisfactory completion of ED 220 and ED 221. To be admitted, students must have a grade point average of at least 2.50 for a minimum of 16 graded credits and a minimum grade of 2.5 in ED 220 and ED 221. Courses that carry no numerical or letter grades are excluded from the calculation of the grade point average.

Students who wish to enter the program but whose grade in ED 220 or ED 221 is lower than 2.5 must repeat the course and earn at least a 2.5 before applying for admission to the program. ED 220, ED 221 and admission to the program are prerequisites for all other human development and child studies courses.

Specialization course requirements

Students seeking a specialization in human development and child studies must:

1. Earn 30 credits in a specified core of courses, including ED courses numbered 220, 221, 223, 224, 225, 320, 324, 325 and 326;
2. Earn 24 credits in cognate courses including a) PSY 271 and one course chosen from AN 305, PSY 326, SOC 335 or a family-oriented social science course; and b) additional courses

related to the development of children, selected with adviser assistance; suggested choices are ED 320 or ED 450.

3. Earn 12 credits of internship by successfully completing ED 456. The internship may not be taken with any other courses.

Requirements for continuation in the specialization

Grades in courses submitted for credit in the human development and child studies program must be 2.0 or better. To continue in the program, students must maintain a minimum overall grade point average of 2.50. Students whose grades fall below the minimum may request a review by the specialization faculty before registering for the next semester. Students who do not request a review will be dropped from the program.

Students will not be permitted to register for the internship unless they have attained a minimum overall grade point average of 2.50 at the time of application and have completed all the specialization courses. Students who do not meet this requirement may request a review by the early childhood faculty before registering for student teaching.

Specialization in youth and adult services

Coordinator: *Luellen Ramey*

Committee: *Billy Minor, John Atlas*

This specialization has been developed in cooperation with agency and industry employers in the community. It prepares students for a wide variety of human service occupations in such fields as employment and training, probation and corrections, guidance, mental health, substance abuse, youth or family services and services for older persons.

Students develop helping profession competencies through human interaction courses, special topic courses in human resources development and field experiences, culminating in the internship.

Requirements for admission to the specialization

Students may apply for admission to the youth and adult services program after satisfactory completion of at least 32 semester hours of credit at an accredited college or university with a grade point average of 2.50 or better. Courses that carry no numerical or letter grades (such as S or U) are excluded from the calculation of the grade point average. Before applying, students must also have completed HI 261 or an equivalent course, HI 361 and HI 363 with a minimum grade of 2.5 in each course.

Before completing the above requirements, students may enroll as pre-HRD majors. Grades in courses submitted for credit in the specialization in youth and adult services must be 2.0 or better.

To continue in the program, students must maintain a minimum overall grade point average of 2.50.

Specialization course requirements

Students seeking a specialization in youth and adult services must:

1. Earn 32 credits in core courses, including HI 261, HI 360, HI 361, HI 363, HRD 362 and 16 credits in other HI or HRD courses.
2. Earn 22-24 credits in cognate courses at the 200-level or above, including a) two advanced courses in psychology, sociology or anthropology; b) a course dealing with social change chosen from: HRD 401, ECN 309, ECN 338, PS 305, SOC 205, SOC 314, SOC 336, SOC 346, SOC 460 and SOC 350; c) a course in research, evaluation or statistics chosen from: HRD 402, PSY 250, PSY 311, SOC 202 or SOC 203 (those who intend to pursue a Master of Social Work degree should consult with an HRD adviser regarding cognate statistics requirements); d) remaining advanced courses in behavioral science chosen from: GRY 400, HRD 301, HRD

302, SCN 114, SCN 115, WS 300, WS 400 or a course in economics, management, organizational behavior, health behavioral sciences, political science, psychology, sociology/anthropology, or speech communication.

3. Earn 8 or 12 credits of internship by successfully completing HRD 490 during one semester of the senior year.

Specialization in training and development

Coordinator: *Robert Payne*

Committee: *James Clatworthy, David Meyer*

Training and development is the process of systematically developing human resources within a work organization to create motivation and increase efficiency. The specialization in training and development requires course work in behavioral sciences, human relations, training and program delivery. These courses provide preparation for a variety of careers in government, health and human services, and in business and industry.

An internship during one semester of the senior year provides work experience in an appropriate setting.

Requirements for admission to the specialization

Students may apply for admission to the training and development specialization after completion of a minimum of 32 semester hours of credit at an accredited college or university with a minimum grade point average of 2.50; completion of HI 360 and HI 361 or HI 363 with a minimum grade point average of 2.50; and completion of the university writing proficiency requirement.

Before applying for admission, students may enroll as pre-HRD majors. Grades in courses submitted for credit towards the specialization must be 2.0 or better. To continue in the program, students must maintain an overall grade point average of 2.50 or better.

Specialization course requirements

Students seeking a specialization in training and development must:

1. Earn 24 credits in core courses, including one in each of the following six categories: a) human relations and effective interaction (prerequisite: HI 261 or equivalent): HI 360 and HI 361 or HI 363, HI 461 or HI 463; b) assessment of individuals: HRD 362 or PSY 311; c) adult learning theory and design of training programs: HRD 310; d) career development: HRD 364, HRD 467, HRD 469 or SOC 455; e) adult instruction: HRD 420 and HRD 421 or HRD 422; f) human development process: HI 464, HRD 368, HRD 369 or HRD 440.
2. Earn 22-24 credits in cognate courses. The requirement may be satisfied by completing a minor in management (22 credits) or by earning one course in each of the following six categories (24 credits): a) writing skills for instruction: RHT 335 (ENG 482 may be substituted when RHT 335 is not offered); b) organizational theory: HRD 401, ORG 330, ORG 331 or ORG 334; c) economics: ECN 150, ECN 200, ECN 201, ECN 338 or ECN 468; d) planning and evaluation: HRD 402, HRD 390, PSY 250, SOC 202 or SOC 203; e) labor relations and employee involvement: MGT 433, HRD 467, HRD 469, HST 302, SOC 350, SOC 354, SOC 357 or PHL 316; f) computer literacy: CSE 125, CSE 130 or ED 396.
3. Successfully complete an 8- or 12-credit internship, HRD 490, during one semester of the senior year.
4. Earn 8-10 additional credits, to make a total of 64 credits for the specialization in training and development. The credits must be in additional courses chosen from the following categories: a) any course that counts toward the requirements for a minor in management; b) any course listed above under either the cognate or core courses; c) any additional course up to the approved maximum in HRD 369, HRD 390 or HRD 490; d.) any HI or HRD course.

Occupational/technical education within the training and development specialization

Coordinator: *William Moorhouse*

Committee: *Robert Payne, Roderic Righter*

Approval is pending for Oakland University to recommend Bachelor of Science candidates majoring in human resources development for teacher certification in occupational/technical areas. Applications for admission will be considered only upon approval of this program; however, guidelines for admission and certification appear below.

Admission to candidacy for teacher certification in an occupational/technical area is selective. Students seeking candidacy must:

1. Earn a minimum cumulative grade point average of 2.50 in courses taken at Oakland University and all previous colleges or universities.
2. Complete, at an accredited college, an associate degree that includes 50 semester-hour credits in an occupational/technical area.
3. Submit a written statement that describes the student's: a) successful work experience in the occupational/technical specialty; b) experience in teaching or in the design or delivery of training to others, including on-the-job training; c) other preparation in the occupational/technical specialty.
4. Submit two or more references from experts in an occupational/technical area attesting to the applicant's high competency in that area.

Occupational course credit and experience

Candidates for certification in an occupational/technical area may apply the 50-credit occupational/technical content area in lieu of the cognate course requirement and elective courses. Candidates must present verification of two years of work experience in a related occupational area, or must complete a planned equivalent program through registration in VTE 401.

Occupational/technical education core courses

The following courses are required and may be applied as substitutions for certain requirements within the specialization in training and development, as approved by an HRD adviser: ED 338, ED 355, VTE 300, VTE 310, VTE 312, VTE 420, VTE 421 and VTE 490.

Minor in Human Resources Development

Coordinator: *David Meyer*

The School of Human and Educational Services offers a minor in human resources development for students who wish to combine their majors with an introduction to human interaction skills and knowledge and techniques in human resources development.

To obtain a minor in human resources development, students must earn at least 24 credits in human interaction (HI) and human resources development (HRD) courses, including a minimum of 8 credits in each area; the plan of study must be subject to the approval of an HRD adviser. Courses counted towards the minor must have a cumulative grade point average of 2.50 or better and no course may carry a grade less than 2.0.

Related minors and concentrations

Normally, students seeking the Bachelor of Science with a major in human resources development may not earn more than one minor or concentration. Students who wish to obtain more than one must obtain the approval of the human resources development program adviser.

The gerontology concentration, co-sponsored by the School of Human and Educational Services and the College of Arts and Sciences, is recommended for HRD students planning careers

of service to older people. A description of the concentration is on page 183.

HRD students may also consider the following concentrations or minors, which supplement the HRD major and may further their educational or career goals. Minors: applied statistics, management, psychology. Concentrations: environmental studies, health behavioral sciences, labor studies (see below), social justice and corrections, social services, urban studies, women's studies.

Concentration in Labor Studies

Coordinator: *William Moorhouse*

Committee: *Dee Lyons (Ken Morris Labor Studies Center), David Meyer (human resources development), Billy Minor (human resources development), Robert Payne (human resources development)*

Labor studies is an interdisciplinary concentration designed to meet the interests of students who wish to identify and focus a portion of their course work on knowledge and skills that will provide an introductory background for leadership roles in union activities.

This concentration is open to any student who has been admitted to Oakland University. Students who wish to seek the concentration must contact an adviser to design a degree plan and to select appropriate courses. (The following course selections are subject to prerequisite requirements, as well as departmental policies.)

Students must submit applications for the labor studies concentration. Applications are available from the human resources development or general studies advising offices. Admission to the concentration requires completion of at least two courses in labor studies or labor/management relations and a background of experience or knowledge in the labor field, as approved by the HRD adviser.

Students seeking a concentration in labor studies must earn 24 credits distributed as follows:

1. Core courses: 8 credits chosen from HI 363, HRD 467 and HRD 469. Note: Workshop and seminar topics must be approved by a human resources development adviser. Typical topics include leadership skills for union leaders, conflict resolution and intervention techniques.
2. One course in organizational theory and practice, chosen from HRD 401, ORG 330, ORG 334, SOC 353 and SOC 381.
3. One course in work life improvement process skills practices, chosen from HI 463, HI 464, IHS 100, IHS 110, ORG 434, SCN 304, SOC 350 and SOC 354.
4. One course in community and society chosen from HST 302, HRD 331, HRD 335, HRD 364, PS 110, PSY 235, PSY 326, SOC 331 and SOC 357.
5. One course in personal development chosen from the following (or an additional course selected from one of the areas above): ENG 382, HI 261, HRD 301, HRD 302, HRD 369, HRD 390, HRD 402, MGT 433, PHL 103, PSY 325 and PSY 331.

Course Offerings

EDUCATION

ED 100 Tutoring Experience in Secondary Education (2)
Students work with teachers and secondary students in schools. Students commit 60 to 80 hours as tutors, teacher aides and leaders of group discussions. To be taken in the freshman year, or for transfer students, during the first semester, upon entering the secondary social studies program.
Corequisite: ED 200.

ED 110 Public Education for the Future (4)
To help beginning elementary education students make career decisions. Students work at least four hours per week in educational institutions. An additional two hours per week of class time is spent examining school practices and evaluating students' professional capabilities.
Prerequisite: Oakland University writing proficiency. Corequisite: ED 210, ED 215.

ED 163 Physical Activity for the Young Child (2)
This course deals with basic knowledge and concepts involved in the acquisition and teaching of motor skills, physical activities and principles of fitness for young children. Emphasis is placed on the practical application of knowledge in the physical activity setting and basic knowledge concerning development and maintenance of physical fitness for an improved lifestyle.

ED 200 Micro-Teaching in Secondary Education (2)
Students identify areas of inquiry related to secondary schools and design personal learning plans which include personal goals for working effectively in a public school. Current educational literature is used to inquire into creativity, self-perception, critical thinking, educational philosophy, motivation and learning theory.
Corequisite: ED 100.

ED 210 Social and Philosophical Issues in Elementary Education (4)
Introduction to the use of philosophical and social science skills in analyzing and resolving education problems.
Corequisites: ED 110, ED 215.

ED 215 Educational Psychology for Elementary Teachers (4)
Incorporates and places into perspective learning theories, developmental theories, biological theories and evaluation, with emphasis on the effects of varied qualities of experience during childhood.
Corequisites: ED 110, ED 210.

ED 220 Early Childhood Development — Experiences with the Young Child (4)
Child development. Instruction, observation and experience with focus on children and their developmental needs during infancy and early childhood, especially in the context of particular settings. Students must register concurrently for ED 221.

ED 221 Early Childhood Development Experience Block (1, 2, 3 or 4)
Experience in a setting with young children. One credit must be taken concurrently with ED 220 and 224. Students who take additional credits of ED 221 must be taking another early childhood course concurrently.

ED 223 Physical and Social Environment in Early Childhood Programs (4)
Various aspects of the social and physical environment for young children. Includes analysis of what makes a healthful, pleasant physical environment and how the roles and relationships of various staff members contribute to this environment.
Prerequisite: Admission to early childhood program taken with no more than one other early childhood course.

ED 224 Early Childhood Programming Activities for the Young Child (4)
Uses of various media and materials, supportive play activities, and specific art, music, science, language and other educational activities for young children. Provides a basic repertoire of skills for the early childhood staff member.
Prerequisite: ED 220 or equivalent. Corequisite: ED 221 and admission to the program.

ED 225 Health and Nutrition — Childhood (4)
Includes knowledge of basic health and safety requirements and basic nutritional and dietary needs for early childhood.
Prerequisite: Admission to early childhood program taken with no more than one other early childhood course.

ED 302 Teaching Mathematics in the Elementary School (4)
This course assists prospective teachers in developing sound pedagogical strategies and instructional techniques for teaching mathematics in the elementary school. Emphasis is placed on the use of a diagnostic-prescriptive model of teaching.
Prerequisite: ED 110, 210, 215, 331, 333, 354, 355 and admission to major.

ED 320 Topics in Early Childhood Curriculum (2 or 4)
Selected curriculum topics relevant to early childhood teachers, with focus on specific curriculum areas identified by advanced early childhood students or special groups working in this field.
Prerequisite: Completion of at least two 200-level early childhood courses.

ED 322 Introduction to Early Childhood: Theory and Practice (4)
Introduction to the field of early childhood: growth and development of infants and young children, optimal learning environments for the young child, and methods and materials. For students who wish some backbground in early childhood but who are not HRD/ED majors. Students must register concurrently for ED 221.
Prerequisite: ED 210 and 215 or permission of instructor.

ED 324 Parent and Community Involvement in Early Childhood Programs (4)
In-depth study of home/school coordination and education. Development of skills and sensitivities in the areas of parent education, parent-teacher conferences, utilization of parents in the classroom and working with parents in the home.
Prerequisite: At least two 200-level childhood courses, or permission of instructor.

ED 325 Learning Environment in Early Childhood (4)
In-depth study of the learning environment and curriculum in early childhood education, including theoretical and practical aspects. Analysis of curriculum areas as they relate to individual children's needs and to the total learning environment.
Prerequisite: At least two 200-level early childhood courses, to be taken with no more than one other early childhood course.

ED 331 Teaching of Reading (4)
Intensive preparation for the teaching of reading skills in the elementary grades. Identification of reading readiness, problems of program construction and a variety of teaching methods are included. Corequisites: ED 333, ED 354 and ED 355.
Prerequisite: ED 110, 210, 215 and admittance to the major.

ED 332 Literature for Children (4)
The ability to evaluate children's literature critically, to understand its history, to assess children's needs and developmental levels, and to be able to select and use quality literature effectively with children are major objectives of the course.
Prerequisite: RHT 101 or equivalent.

ED 333 Teaching the Language Arts (4)
Preparation for teaching language arts in the elementary, middle and early secondary schools. Topics include teaching composition, creative writing, oral language development, listening, spelling, reading and the application of linguistic principles. Corequisites: ED 331, 354, and 355.
Prerequisites: ED 110, 210, 215 and admission to the major.

ED 338 Teaching Reading in the Content Areas (4)
A basic course in reading for prospective secondary teachers. Content will deal with the nature of the reading process and methods and materials for teaching the reading of English, social studies and other subjects to junior and senior high school students. Not open to elementary education majors.

ED 344 Social and Philosophical Issues in Secondary Education (4)
Study of secondary education in broad perspective, as both an interpersonal activity and a social institution. Topics include immediate and ultimate aims of secondary education, the social meaning of the schooling process, and the assumptions underlying school policy.

ED 345 Psychological and Field Studies in Education (4)
Psychological factors in learning and development are examined in lectures, class discussions and observations. These may be observations of actual teaching in the schools, or of videotapes of teaching.

ED 354 Testing and Assessment for Teachers (4)
Prepares a teacher-in-training to make effective use of formal, informal and teacher-created assessment techniques in the process of planning, implementing and evaluating instruction.
Prerequisite: Admittance to program, ED 110, 210, 215. Corequisites: ED 331, 333, 355.

ED 355 Identifying and Diagnosing Learning and Behavior Problems in Children (4)
Students will demonstrate knowledge of individual differences among normal school population; develop competency in delivery of educational services to handicapped persons; demonstrate understanding of various theoretical models of behavior; and demonstrate knowledge of the various statutes that govern education in Michigan. Corequisites: ED 331, 333, 354.
Prerequisite: ED 110, 210, 215 and admittance to program.

ED 370 Field Problems in Social Science (4)
To assist prospective social studies teachers in identifying and solving instructional problems. Students are placed in school to work with teachers and secondary students, operating through a written contract agreed upon by themselves, an appropriate secondary school official and a representative of the social studies program. Transportation must be arranged by the student.
Prerequisite: ED 100 and 200.

ED 396 Educational Uses of Microcomputers (4)
General microcomputer literacy course designed with focus on educational applications to enable education students to utilize microcomputers for career and personal goals. Required for elementary education majors.
Prerequisite: ED 110, 210, 215 and admission to the major.

ED 414 Reading Appraisal in the Elementary Classroom (4)
Involves direct classroom appraisal of reading abilities of children in elementary school classrooms. Formal and informal diagnostic instruments are used. Diagnostic data are used for prescriptive teaching. Specifically involves reading instruction with pupils and involvement with school personnel.
Prerequisite: ED 331. Corequisite: ED 455.

ED 420 Interaction Laboratory for Teacher Development (4)
Acquaints students with the importance of human relations skills in teaching and provides a clearer understanding of the flexible line separating personal and professional behavior. Laboratory activities involve the student in role-playing and action-oriented problem solving. A field experience is included. Corequisites: SS 470, SCS 305 and ED 302.
Prerequisite: ED 110, 210, 215, 331, 333, 354 and 355 and admission to the major.

ED 427 Methods for Teaching Secondary Students (2)
Focus is on the uniqueness of the secondary classroom and the secondary student. Special emphasis will be placed on the development of teaching strategies and human interaction techniques appropriate for teaching secondary students. Such topics as discipline, motivation, instructional technology, skill assessment, evaluation and affective learning will form the learning "core" around which students will be expected to develop the interaction and process skills needed to teach secondary students.
Corequisite: ED 428.

ED 428 Teaching of the Major Field (2)
Content and methodology appropriate to the student's field. Organization of programs and courses, bibliography of the field and techniques of instruction receive special emphasis. Must be taken concurrently with ED 455, except when other provisions have been made by the major department.
Prerequisite: ED 100, 200, 338, 344 and 345. (For social studies majors, the following are also required: ED 354, 370 and SS 100.)

ED 450 Advanced Studies in Early Childhood (2 or 4)
Current issues affecting the field of early childhood, especially those related to current legislation, child advocacy, and the child welfare concern; research methodology appropriate for young children; and/or in-depth issues such as development of infants or exceptional children.
Prerequisite: Completion of all 200-level early childhood courses and at least two 300-level early childhood courses.

ED 455 Internship (12)
Approximately 15 weeks of supervised teaching in a public school classroom and other activities as directed by a supervising teacher. Seminars are held throughout the semester focusing on general and specific teaching concerns of the interns. The semester may be divided into two segements for a dual assignment, depending on program requirements or student needs. A student must complete the internship in his/her last semester (a last semester is one in which a student needs no more than 16 credits to satisfy all graduation requirements). A student must apply for internships one full semester in advance.
Prerequisite: Elementary education majors must complete the core program, general education and childhood curriculum studies requirements; second education majors must complete ED 100, 200, 338, 344, 345 and secure permission of the major department and the School of Human Educational Services. Prospective student teachers must register at the Office of Field Services at the beginning (before September 15 for winter or January 15 for fall) of the full semester before student teaching.

ED 456 Internship in Early Childhood (12)
Work in practicum settings with young children, parents, or caregivers. Students will gradually assume total responsibility for an intensive field experience. Consists of 301 hours of on-site practicum. Includes bi-weekly seminar. No other courses may be taken concurrently and it is strongly advised that the student not be employed or take other courses. Apply September for winter, January for fall.
Prerequisite: 30 credits in early childhood courses with an overall 2.50 grade point average.

ED 490 Independent Study and Research (2 or 4)
A program of directed individual reading and research.
Prerequisite: Permission of the Department of Teacher Education (granted only if a student presents written faculty consent to supervise his/her study).

HUMAN INTERACTION

HI 261 Fundamentals of Human Interaction (4)
Introduction to key aspects of interpersonal relationships such as self disclosure, feedback, conflict, trust and nonverbal communication. Examines various theories of healthy relationships and personal maturity. Self-appraisal, role plays, simulations and group interaction are used.

HI 360 Interviewing Skills Lab (2)
An application of the methods studied in HI 361. Students practice helping interview skills in a supervised laboratory setting, are video-taped, critiqued and evaluated.
Corequisite: HI 361.

HI 361 The Helping Interview (2)
Listening and responding skills, establishing mutual trust and acceptance, gathering information and providing support in a one-to-one helping relationship. Introduction to related theory and research. Instructional techniques includce role-playing and simulation.
Prerequisite: HI 261 or equivalent. Corequisite: HI 360.

HI 363 Dynamics of Group Relationships (4)
Deals with relationships among group members, including peer and supervisory interaction, in settings such as community agencies, industry and adult training. Covers such basic concepts and practices as teamwork, conflict resolution, consensus, group leadership and support groups.
Prerequisite: HI 261 or equivalent.

HI 461 Introduction to Counseling (4)
Theory and practice of guidance and counseling in brief. Covers professional, ethical and legal issues in helping others. Compares major counseling approaches in both theory and application.
Prerequisite: HI 361.

HI 463 Group Facilitation (4)
Theory and practice of small group process in the helping relationship. Explores several approaches to group leadership and offers an opportunity to experience and/or lead small groups in order to prepare students to foster group interaction. Identical with ED 463.
Prerequisite: HI 363.

HI 464 Consultation (4)
Includes study of processes of internal and external consultation, strategies for intervention in organization and consulting approaches in support of individual helping professionals, supervisors and administrators.
Prerequisite: 2 HI courses.

HUMAN RESOURCES DEVELOPMENT

HRD 301 Human Nature (4)
An analysis of human nature through evolutionary, psychosocial and cultural perspectives. Topics include: the formation of brain, self, ego; the significance of autonomy, love, death; the search for meaning and change. Implications for the helping professions. Identical with PHL 301.

HRD 302 Ethics and Personal Crises (4)
Historical examination of perennial moral crises in sexual behavior, abortion, suicide, euthanasia, criminal punishment and war from the points of view of major historical figures in ethics. Use of ethical knowledge in helping others make moral decisions in personal life is addressed. *Satisfies university general education requirement in Western civilization. Identical with PHL 302.*

HRD 310 Training Design (4)
Adult learning theory including cognitive, affective, psychomotor domains. Instructional design models, needs analysis, occupational task analysis, development of competencies and learning objectives. Determination of appropriate training approach. Selection and evaluation of instructional materials and media. Same as VTE 310.

HRD 331 Community Mental Health (4)
A critical examination of mental health treatment programs, community mental health centers and family-care programs. Socio-cultural factors in the onset of mental illness and roles as members of a treatment team and community resources in mental health.

HRD 335 Substance Abuse (4)
Comprehensive study of the modes of prevention and treatment programs for substance abuse. Readings and reports include basic information about various drugs and alcohol, with history, categories and definitions, misuse, abuse, legitimate use, laws, attitudes and reasons people abuse drugs.

HRD 362 Assessment of Youth and Adults (4)
Techniques in appraising people for educational, occupational and personal-social decisions. Students are introduced to measurement terminology, techniques of test administration and interpretation. Emphasis on synthesis of data in case studies and conferences.

HRD 364 Career Development (4)
Sources of occupational, educational and personal-social information. Techniques for using guidance information in the helping process. Theories of career choice and adjustment, the work ethic and life/work planning.

HRD 336 The Human Services (4)
Overview of human service work. Interdisciplinary relationships among professionals and organizations in helping practice. Surveys major service modalities and legislation impacting human services.

HRD 368 Work and Training Development (4)
Development of jobs and training programs for persons such as displaced workers, handicapped, chronically unemployed unemployed through industry and government action. Appraisal of employers' needs, on-the-job training programs, collaboration among employers and educators and analysis of market factors.

HRD 369 Field Work in HRD (2, 4, 6 or 8)
Exploration of the HRD field through supervised experiences in settings such as training and personnel departments in business, industry and government, employment offices and social service agencies. Students submit application to instructor, then obtain information to seek an approved site.
Prerequisite: Completed application and permission of instructor.

HRD 390 Special Project in HRD (2, 4, 6 or 8)
Directed reading or research in an HRD topic. May be elected for independent study. Student selects topic, obtains faculty sponsor's permission before registration and writes report. May be taken with special permission more than once, for 8 credit total.
Prerequisite: Permission of a faculty sponsor by application.

HRD 401 Change Process and Organizational Analysis (4)
Study of structure of HRD services in organizations and the processes of effecting individual and group change. Influence of assigned roles of administrators and workers on attitude and behavior. Theory and research of institutional growth and change.
Prerequisite: Junior standing and two courses in ED, HI or HRD.

HRD 402 Program Planning and Evaluation (4)
Emphasizes skills in developing performance objectives and in organizing, writing and presenting proposals for program development. Methods of evaluation of training and development and human service programs; i.e., action and survey research design.
Prerequisite: Junior standing and HRD 362.

HRD 420 Instructional Methods (2)
Methods of instructing adults in training programs using instructional materials and media. Application of adult learning theory and evaluation of learning based upon competencies. Teacher-student interaction process and use of audio-visual equipment. Same as VTE 420.
Prerequisite: HRD 310. Corequisite:

HRD 421 Instruction Presentation Lab (2)
An application of the methods studied in HRD 420. Students present training program lessons and exercises in a supervised laboratory setting, are video-taped, critiqued and evaluated.
Corequisite: HRD 420.

HRD 422 Instructional Media Lab (2, 4, 6 or 8)
The application of instructional media production techniques. Students develop instructional media for a training program which was designed under HRD 310 or obtained from a training manager. Must be taken more than once for a total of 8 credits.
Prerequisite: HRD 310. Corerequisite: HRD 420 or permission of instructor.

HRD 431 Death and Dying (4)
Seminar on the philosophical, religious, cultural and psychological issues in death and dying. Topics include: religious views of death and after-life; ethical issues in suicide and euthanasia; cultural attitudes toward death and funerals; psychological studies of counseling the dying and the bereaved; children and death; forming attitudes toward one's own death. Recommended for upper-level students only.
Prerequisite: Two HI/HRD courses or permission of instructor.

HRD 440 Strategic Planning (4)
Development of long-range plans to accomplish the training and development mission. Simulation, group problem solving and preferred future planning used to acquire strategic planning skills.
Prerequisite: HRD 310, or ORG 330 or 334.

HRD 467 Workshop (2 or 4)
Opportunity for industry/agency personnel and students to focus on various programs and practices. Offered as needed to meet needs of agency or industry employers and training directors. May be taken more than once for 8 credits total.
Prerequisite: Course work or experience in the workshop topic.

HRD 469 Seminar (2 or 4)
Scope is predefined and based on a broad topic in the HRD field. Students select research areas and contribute their findings to the class. Visting consultants and the instructor provide direction and content. May be taken more than once for a total of 8 credits.
Prerequisite: Course work or experience in the seminar topic.

HRD 490 Internship in HRD (4, 8 or 12)
A culminating experience where students apply learning in a supervised HRD setting. Students must submit application to instructor two or more months in advance, then obtain information to seek an approved site.
Prerequisite: Senior standing in HRD, completion of 24 or more credits in HI or HRD courses with a grade point average of at least 2.5 and permission of instructor by application.

VOCATIONAL AND TECHNICAL EDUCATION

VTE 300 Vocational/Technical Education (2)
Historical development, philosophy, purpose and intent of vocational and technical education including the structure, function and purposes of educational institutions in our society.
Prerequisite: Major standing or permission of instructor.

VTE 310 Occupational Course Design (4)
How human beings grow and learn. Motivation theory, learning styles, individual and cultural differences. Instructional design models, needs analysis, occupational task analysis, development of competency-based learning objectives. Selection/evaluation of instructional materials and media. Same as HRD 310.
Prerequisite: VTE 300.

VTE 312 School Safety and Health (2)
Analysis of accident causation and prevention in school facilities. Study of federal, state and local codes which apply to safety and health in schools. Review of concepts, methodology and procedures for assessment of safety and health hazards in school science laboratories and vocational education and training facilities. Identical with IHS 312.
Prerequisite: Major standing in Occupational and Technical Education or permission of instructor.

VTE 401 Supervised Occupational Experience (1, 2, 3 or 4)
Directed technical-occupational experience required for vocational education teacher certification. Work must be in a trade area directly related to the area to be certified. May be taken more than once for total of four credits.
Prerequisite: Major standing or permission of instructor.

VTE 420 Methods and Materials of Instruction (2)
Presentation of occupational instruction materials and media. Use of instructional equipment. Application of learning theory and evaluation of earning based upon competencies. Teacher-student interaction, laboratory and simulation methods. Same as HRD 420.
Prerequisite: VTE 310. Corequisite: VTE 421.

VTE 421 Laboratory Instruction (2)
Three dimensional teaching aids, setting up laboratory space for instruction, safety and supervision of students. Physical environment, material handling, tools and equipment, work area planning and all aspects of managing a laboratory course.
Corequisite: VTE 420 (2)

VTE 490 Internship (2,10)
Supervised student teaching experience in a vocational/technical education setting. Students with fewer than nine months of full-time teaching experience must register for 10 credits. Others may apply for permission to register for two credits which cover performance evaluation.
Prerequisite: 12 credits in VTE, senior standing and a minimum overall GPA of 2.5.

SCIENCE STUDIES

SCS 105 Science for the Elementary Teacher (4)
Science concepts and processes based on recent elementary school science education curricula. For education majors only.

SCS 305 Teaching Science to Children (4)
Students develop philosophies of the nature of elementary school science; why teach science and how children learn science. Knowledge and skills in planning instruction, using instructional models, integrating the curriculum, using current science materials and evaluation. Field work is included.
Prerequisite: SCS 105, ED 110, 210, 215, 331, 333, 354, 355. Corequisites: SS 470, ED 420.

SCS 490 Independent Problems in Science Education (2 or 4)
Individual work in science methods and materials. Credits may be applied to a teaching major or teaching minor in science/mathematics. May include a field placement as well as development of specific teaching materials.
Prerequisite: SCS 305 and permission of instructor.

SOCIAL STUDIES

SS 100 Introduction to Social Studies (4)
This introduction to an interdisciplinary social science program provides an overview of the philosophical and historical development of individual social science disciplines (psychology, sociology, anthropology, political science, history, economics and geography). Required of all social studies majors and minors.

SS 470 Teaching Social Studies in Elementary School (4)
An opportunity to examine sources of instructional objectives and strategies, curriculum materials and evaluative procedures for social studies education. Students completing the course should be able to develop, defend and implement an elementary social studies program. A field experience is included.
Prerequisite: ED 110, 210, 215, 331, 333, 354, 355 and admission to the major. Corequisites: SCS 305 and ED 420.

For a description of the social studies program leading to secondary teacher certification refer to the appropriate section in the College of Arts and Sciences.

SCHOOL OF NURSING

Dean: *Andrea R. Lindell*

Office of the Dean: *Barbara Biallas, assistant to the dean; Sue Lindberg, program planning adviser*

Professors: *Anna B. Dugan, Andrea R. Lindell*

Associate professors: *Nadia Boulos, Lorraine M. Wilson*

Assistant professors: *Penny S. Cass, Frances C. Jackson, Mary Ann Krammin, Gary Moore, Diane Wilson, Carol Zenas*

Instructors: *Rita Munley Gallagher, SerVonia Jones, Norman Kloosterman, Laurie K. Miller, Katrina D. Roy, Dolores J. Solosky*

Special instructor: *Ramune Mikaila*

Visiting instructors: *Richard L. Boortz-Marx, Debra E. Gorney-Jankowski, Robin L. Krieger, Jean Mohan, Patricia Tackitt*

Visiting special instructor: *Virginia R. Hosbach*

Lecturers: *Mary Ann Babcock, Karen L. Braniff, Ellen Cary, Barbara S. Donahue, Kathleen A. Emrich, Donna L. Gaffney, Lisa J. Iacobelli, Stephanie A. Lusis, Mary E. Mittelstaedt, Joann Richards, Carolyn L. Rivers, Catherine Vincent*

Applied nursing instructor: *Patricia T. Ketcham*

Adjunct professor: *Cyril A. Akpom*

Adjunct assistant professors: *Joanne Napiewocki, Lynne T. Rinke, Sharon Wilkerson*

Adjunct instructors: *Sandra L. Darby, Rosemary Knapp, Lynne A. Lepisto-Golling, Dahlia Pesselnick, Maria Strom, Stephen R. Tackitt, Melanie G. Ziarkiewicz*

Board of Visitors

The Board of Visitors for the School of Nursing is composed of community leaders in the greater Detroit area. They assist the school in developing goals and objectives, curricula design, and clinical and research programs to meet the rapidly changing and expanding requirements of the health care field. Board members are available individually or collectively for consultation on such matters as facilities, equipment requirements, special topics and long-range planning.

Members of the Board of Visitors are:

Ernest W. Baker, Chairman and President, Baker, Abbs, Cunningham & Klepinger, Inc.
Glenn Betts, Representative, United Auto Workers
Donald J. Bortz, Jr., President, Bortz Health Care Corporation
Joseph F. Galvin, Attorney, Schlussel, Lifton, Simon, Rands, Kaufman, Galvin & Jackier
Representative Dennis M. Hertel, U.S. House of Representatives, 14th District
Ruth Huebner, Rochester, Michigan
Robert Hutton, Grosse Pointe Park, Michigan
Mary Ann Keyes, Associate Hospital Administrator, William Beaumont Hospital
Mercedes Lichtwardt, Bloomfield Hills, Michigan
Richard Prior, M.D., Corporate Medical Director, General Motors Corporation
Robert Shapiro, Vice President for Health Care Services, Perry Drug Stores
Charles Wolfe, Executive Vice President, Jewish Home for the Aged
Sharon Woodcock, R.N., Ann Arbor, Michigan

The Nursing Program

The course of study combines general education in the humanities and the behavioral, biological and physical sciences with special education in the theory and practice of nursing. Graduates qualify for employment as professional nurses in a variety of settings.
The major purposes of the program are:

1. To prepare a generalist nurse for entry into professional practice.
2. To provide a program of quality baccalaureate nursing education grounded on a firm foundation in the liberal arts and sciences.
3. To foster professional role development and commitment to continued personal and professional growth.
4. To prepare a graduate to take the licensure examination of the State Board of Nursing.
5. To prepare a graduate for application to graduate school

National League for Nursing accreditation

The Oakland University School of Nursing is accredited by the National League for Nursing and has approval from the Michigan State Board of Nursing.

The prenursing year

Students wishing to enter the prenursing year, which for most students is equivalent to the freshman year, should have completed two years of high school mathematics, including algebra (a third year is highly recommended); one year of college preparatory biology; and one year of chemistry, in which a grade of B or better is required. A cumulative average of B or better is required.

Prior to orientation, all students take the math and chemistry placement tests and the writing proficiency test.

During the prenursing year, students must complete a minimum of 28 credits (or the equivalent) of introductory courses in the physical and behavioral sciences and the humanities.

Admission to the School of Nursing

Application for admission to the nursing program occurs during the spring session of the prenursing year (generally, the freshman year). Students wishing to be considered for admission are required to meet with the program planning adviser to develop application materials. The School of Nursing has an enrollment quota, which is filled with preference to applicants judged to be best qualified to undertake the program. Preference will be given to students who have completed a majority of their prenursing credits at Oakland University. The School of Nursing encourages and actively seeks applicants among male and minority students.

Admission to the nursing program is selective. It may occur either by progression of freshmen students currently enrolled at Oakland, or by transfer from other institutions. Consideration of students for the nursing program, which begins in the sophomore year, will be based on the applicant's:

1. Admissibility to and retention in the university.
2. Completion of all prenursing courses with a minimum cumulative grade point average of 3.00. Calculation of the grade point average is based on all prenursing courses except mathematics and biology, whether taken at Oakland University or at other institutions. A minimum grade of 2.0 is required in all prenursing courses. Because of the large number of applications received each year, admission to the nursing program is competitive. A 3.00 grade point average in prenursing courses does not guarantee admission.
3. Submission of a completed health history and physical examination, including inoculation for tetanus, skin testing for tuberculosis (and possible chest x-ray) and rubella, and correction of any correctable physical limitations (at student's expense).

4. Obtaining malpractice insurance of at least $1,000,000 coverage for the sophomore, junior and senior years (at student's expense).
5. Completion of an approved Heartsaver or BCLS/BLS (CPR) class within the last year.
6. Submission of all required information to the School of Nursing by specified deadlines.

Transfer policy

The program offered by the School of Nursing is designed to meet National League for Nursing accreditation criteria as well as to reflect the Oakland University philosophy of education. Thus, it is emphasized that the program is more than a mere assemblage of courses.

To ensure the integrity of this program, the School of Nursing has adopted the following transfer policy. Records of students transferring to Oakland University from other academic institutions are evaluated and transfer credit granted as appropriate. Once matriculated at Oakland, students are expected to complete all remaining course work for the degree at Oakland. Exceptions that permit taking courses at another institution must have the prior consent of the School of Nursing Committee on Instruction.

A student who has completed 62 semester hours of credit from any accredited institution(s), including Oakland University, may not transfer additional credits from a community or junior college.

Requirements for the Bachelor of Science in Nursing degree

To earn the Bachelor of Science in Nursing degree, students must complete a minimum of 128 credits, meeting the following requirements:

1. Complete the writing proficiency requirement.
2. Be admitted to candidacy for the Bachelor of Science in Nursing degree by Oakland University and the School of Nursing.
3. Complete all credits and courses prescribed in the degree curriculum, including: 32 credits in general education (see pages 25-28); 59 credits in the nursing component; and 29 credits in the humanities and the behavioral, biological and physical sciences as corequisites to the nursing component, as prescribed by the School of Nursing.
4. Maintain a cumulative grade point average of 2.50 in all nursing courses.
5. Complete at least 32 credits at the 300-level or above.
6. Be in substantial agreement with all legal curricular requirements.
7. Be in compliance with all legal regulations of the School of Nursing.

Plan of Study

Prior to registration for their first nursing (NRS) course, students must complete a Plan of Study in the student program planning office in the School of Nursing. The Plan of Study is a timetable of courses to be taken and assures orderly progress toward satisfying degree requirements.

The following is a model schedule, based on full-time study:

Prenursing year. Fall semester: CHM 104, RHT 100, PHL 103, AN 102 or SOC 100. Winter semester: PSY 100 or PSY 130, RHT 101, PHY 141. Total credits: 28. NOTE: Students must also complete MTH 111*, MTH 112* and BIO 200, either by passing placement examinations or through course enrollment. Credits in these courses do not apply to the Bachelor of Science in Nursing degree. **All prenursing courses must be satisfied prior to application to the nursing program.**

Sophomore year. Fall semester: NRS 223, NRS 225, BIO 205, BIO 206, CHM 201. Winter semester: NRS 230, NRS 234, NRS 205, BIO 207, BIO 307. Total credits: 34. NOTE: BIO 200 is a prerequisite to BIO 205, BIO 207 and BIO 307.

Junior year. Fall semester: NRS 322, NRS 323, NRS 324, NRS 325, general education requirement in arts. Winter semester: NRS 333, NRS 334, PSY 270, general education requirement in arts. Total credits: 32.

Senior year. Fall semester: NRS 420, NRS 422, STA 225, general education requirement in language. Winter semester: NRS 430, NRS 434, NRS 436, general education requirement in international studies. Total credits: 34.
*See the special information concerning these courses on page 97.

Course sequencing

The nursing curriculum has been developed based upon full-time study. Nursing courses must be taken in the order indicated on the Plan of Study. Students who have already completed non-nursing courses may have a lighter course load than normal, but they will not complete the program earlier.

Students are not allowed to register for the next year of the nursing major without having successfully completed all designated course requirements for the previous year. Students who are not eligible to progress to the next level are placed on inactive status. Their return to the program is contingent upon availability of space. Students who return to the nursing program from inactive status must comply with all School of Nursing policies currently in effect.

Registered Nurse sequence

The School of Nursing offers registered nurses an opportunity to earn a Bachelor of Science in Nursing. The purposes, philosophy and objectives of the B.S.N. program are primarily the same for traditional and registered nurse students. One difference is noted in NRS 223 at the sophomore level. NRS 223 was designed as a transition course to provide content not obtained in the previous educational experience. An RN's clinical experience and maturity also are taken into account in demonstration of clinical competency.

Students who have satisfactorily completed a diploma or associate degree program in nursing and who possess a valid Michigan R.N. license may apply for admission to the B.S.N. program. Registered nurses must complete all credits and/or courses in the degree program.

Completion may be achieved in several ways, including:

1. CLEP (College Level Examination Program) and ACT Proficiency Examination Program (PEP) credit. Academic credit may be granted for courses for what students know, regardless of where or how they acquired the knowledge.
2. Transfer of credits. The School of Nursing evaluates previous course work to determine equivalency.
3. Credit by examination at Oakland University. Registered nurses may demonstrate competency by passing competency examinations, except as noted below.
4. Required course enrollment. When course requirements cannot be fulfilled by the above methods, R.N. students must enroll and successfully complete courses. All R.N. students are required to enroll in NRS 223, NRS 420, NRS 422, NRS 430 and NRS 436.

This program is designed to allow students to proceed at their own pace.

Clinical Placements

Nursing students are placed in hospitals and other clinical settings each semester. These clinical experiences provide students with opportunities to apply theory to practice in working with individuals, families or groups.

Cooperating agencies are located throughout the metropolitan Detroit area. Students are responsible for providing their own transportation to and from the clinical agency. It is imperative that students have access to their own transportation for community health clinical placements in the senior year.

Grade point policy

Each student's program progress will be reviewed at the end of each nursing course. The periods between reviews are grading periods. The term grade means:

1. an overall grade for a course, or

2. either a clinical grade or a theory grade, when a course contains both components (the component grade).

Probation/termination

1. A student assigned a course or component grade below 2.5 is automatically placed on probation. A student assigned a course or component grade below 2.0 is subject to academic dismissal from the program. In the latter case, the school may impose a remediation program while probation continues or may immediately terminate the student from the nursing program. A student on probation who in the next grading period has no nursing grade or grades below 2.5 will be removed from probation if this is consistent with any remediation program imposed. A student on probation, who in the next grading period has a grade or grades below 2.5, may be immediately terminated from the nursing program or may have a remediation program imposed while probation continues, as the school shall determine.
2. A student must maintain a G.P.A. of at least 2.50 in all nursing courses to remain in good academic standing. If a student's nursing G.P.A. falls below 2.50, the student is automatically placed on probation. If a student increases the nursing G.P.A. to at least 2.50 within the next two grading periods, the student will be removed from probation. If not, the school may impose a remediation program while probation continues or immediately terminate the student from the nursing program.
3. A student who earns course or component grades below 2.5 in two nursing courses within the same grading period may be immediately terminated from the nursing program or may have a remediation program imposed while on probation, as the school shall determine.
4. A student who is placed on probation by the School of Nursing more than one time may be immediately terminated from the nursing program or may have a remediation program imposed while on probation, as the school shall determine.

Graduation

In addition to satisfying other stated requirements, to be recommended for graduation:

1. A student must be in good academic standing (non-probationary).
2. A student must have a cumulative G.P.A. of at least 2.50 in nursing courses.
3. A student must have a grade of at least 2.0 in all required non-nursing courses.
4. A student placed on probation at the expected time of graduation may have a remediation program imposed as the school shall determine.

Sigma Theta Tau

Theta Psi, the local chapter of Sigma Theta Tau International Honor Society in Nursing, was chartered in April 1986 at Oakland University. Candidates for membership are selected on the basis of superior scholastic achievement, evidence of professional leadership potential and dependable personal qualifications.

National Student Nurses Association

Prenursing and nursing students are eligible and encouraged to join and remain members of the National Student Nurses' Association. NSNA is the mechanism through which students participate in planning and formulating policies related to the School of Nursing.

Qualification for licensure

Licensure is obtained through satisfactory performance on the licensing examination prescribed by the State of Michigan. Upon registration of the license, a nurse is known as a registered nurse (R.N.). Licensure in one state entitles a qualified holder to seek licensure by endorsement in other states.

Applicants who have been convicted of charges other than minor traffic violations may be denied a license to practice nursing.

Course Offerings

Nursing course may include student learning experiences in the following settings: classroom, learning resource laboratory and clinical agencies in the community.

NRS 205 Health Assessment (1)
Introduces students to the process of health assessment. Emphasis on physical examination of all body systems and techniques for communicating data collected to other health personnel.
Prerequisite: BIO 205 and 206.

NRS 223 Introduction to Professional Nursing I (5)
Introduces physiologic stress adaptation concepts as they apply to commonly occurring situations in health and illness. Content explores nursing as a profession, nurse-client interaction, the health-illness continuum, the health care delivery system. Nursing practice and nursing diagnosis will be utilized as methodologies of professional practice. Opportunity for the demonstration of clinical competency.

NRS 234 Introduction to Professional Nursing II (6)
Focuses on topics relating to basic human needs and nursing interventions that promote or maintain health throughout the life cycle.
Prerequisite: BIO 205 and 206.

NRS 225 Interpersonal Relationships in Nursing (3)
Focus on therapeutic communication between the nurse and clients at all points along the health continuum utilizing a variety of frameworks. Topics will include nursing care of clients demonstrating more commonly occurring types of disruptive behavior.

NRS 230 Pharmacotherapeutics (2)
Focuses on basic concepts of pharmacology and their application in the clinical setting. Jointly offered with HS 331.

NRS 322 Pathophysiology (3)
Examines how physiological functions are modified by disease processes.

NRS 323 Nursing Care of Children (4)
Implications of increasingly complex variables related to health and illness in children. Emphasis is on the interaction of biological responses to stressors from birth through adolescence. Study provides the base for expanding competence in nursing skills centering on care function and more sophisticated application of nursing process with clients in various clinical settings.

NRS 324 Nursing Care of Adults I (4)
Explores the effect of variables related to health and illness in the adult. Emphasis is on the interaction of biological responses to stressors in the adult life cycle. Study provides the base for expanding competence in nursing skills centering on care functions and more sophisticated application of nursing process with clients in acute care clinical settings.

NRS 325 Learning Resource Lab: Adults/Children (1)
Practice and validation of specific nursing care skills in the learning resource laboratory.

NRS 333 Nursing Care of Clients with Emotional Disorders (4)
Study focuses on the care of children and adults in acute psychiatric settings. Includes exploration of variables affecting the development of psychopathology and emphasizes the development of nursing skills to provide care for patients experiencing acute psychiatric problems.

NRS 334 Nursing Care of the Emerging Family (4)
Experience in the care of families throughout the maternity cycle. Emphasis is on the care of mothers and infants in the labor room, delivery and post partum settings. Focus is on variables contributing to a healthy pregnancy, normal delivery and positive transition to parenthood.

NRS 360 Advanced Care of the Adult-Extern (4-6)
Provides precepted theoretical and clinical practice and classroom instruction in an acute care setting, working with an adult population.
Prerequisite: Completion of all junior-level courses.

NRS 420 Professional Nursing in the Community (9)
Exploration of the functions of the community health nurse with the individual, the family and the community. Emphasis is on analysis of client adaptation to environmental stressors, nursing actions directed toward prevention of illness, restoration, maintenance and promotion of public health, and collaboration with others in the community to achieve mutual goals.

NRS 422 Nursing Research (2)
A broad overview of the research process in nursing. Includes content related to nursing theory, research design, data analysis strategies and computers in health care. Major emphasis is on the use of research concepts for the purpose of evaluating relevant research for use in nursing practice.

NRS 430 Leadership in Professional Nursing (3)
Seminar designed to enable students to develop a beginning framework for nursing leadership and practice. In-depth examination of management principles, theories and professional practice issues.
Corequisite: NRS 436.

NRS 434 Nursing Care of Adults II (3)
Nursing of adult clients experiencing increasingly complex biopsychosocial altercations.
Corequisite: NRS 436.

NRS 436 Practicum in Professional Nursing (5)
Practicum, offered in a variety of acute care settings designed to facilitate the transition from student to practicing professional. Students will apply the nursing process to acutely ill clients while functioning as a leader and an agent of change.

NRS 460 Topics in Nursing (2-4)
Provides comprehensive theoretical nursing content to senior nursing students in a specialty area, e.g., critical care, maternity, industrial, intensive care, operating room, etc. Clinical experience in a health care facility may be required.
Prerequisite: NRS 420 or 430.

NRS 490 Independent Study (Credit varies up to 12)
Options include the opportunity for selected students to participate in faculty research or preceptorships in areas of special interest.

*Nursing course content is presently being reviewed and may be modified.

GENERAL STUDIES

Faculty council for general studies: *Lowell Eklund, chairperson; Frank Cioch, assistant professor, School of Engineering and Computer Science; James Clatworthy, associate professor, School of Human and Educational Services; John Cowlishaw, associate professor, Biological Sciences; Indra David, associate dean, Kresge Library; David Diltz, assistant professor, School of Business Administration; Robert Facko, associate professor, Music, Theatre and Dance; Alice Horning, associate professor, Rhetoric, Communications and Journalism; Barbara Kiwicz, visiting instructor, School of Business Administration; Norman Kloosterman, instructor, School of Nursing; David Lau, assistant professor, Rhetoric, Communications and Journalism; Jerry Marsh, special instructor, School of Engineering and Computer Science; David Meyer, associate professor, School of Human and Educational Services; Melodie Monahan, assistant professor, English; Ann Pogany, assistant professor, Kresge Library; Uwe Reischl, associate professor, School of Health Sciences; Whitney Walton, assistant professor, History*

The Bachelor of General Studies

The Bachelor of General Studies degree (B.G.S.) is a university-wide baccalaureate program that offers maximum flexibility and opportunity for student decision-making about courses of study at Oakland University. The degree is primarily intended for students wishing to create a program to meet their individual goals through interdisciplinary study.

Students entering the General Studies program design a program of study utilizing courses from the university to prepare them for a particular job or career choice. Students may select courses from any field of study offered by an academic department, subject to prerequisites and policies set by the individual departments. This program offers students the opportunity to plan a unique and challenging academic program in cooperation with a General Studies faculty adviser.

Frequently, students seeking the degree have earned academic credits from other colleges and have been encouraged by their employers to pursue a baccalaureate degree. The General Studies program has flexible policies on transfer credits from other institutions, and it provides a personalized program to meet the educational needs of individuals and employers. Pre-enrollment counseling is available to those who are considering this degree.

Students applying to the General Studies program are first admitted to pre-B.G.S. status. Students may be granted major standing upon approval of their plan of work and supporting rationale by the General Studies Faculty Advising Committee.

Two-Plus-Two program for associate degree holders

The General Studies program allows students to combine broad liberal arts and professional courses with associate degrees from Michigan community colleges. The Two-Plus-Two program provides for transfer of up to 62 semester credits from accredited two-year institutions in Michigan. Students with associate degrees in any area except nursing may qualify for the Two-Plus-Two General Studies program. Holders of associate degrees in nursing are subject to a course by course evaluation.

The program requires that courses accepted for transfer must have a grade of C or above, that at least 12 semester credits have been earned in liberal arts courses, and that all course work was taken at accredited institutions.

Requirements for the degree in Bachelor of General Studies

To earn the Bachelor of General Studies degree, students must complete at least 124 credits, meeting the following requirements:

1. Complete the writing proficiency requirement.

2. Complete the general education requirements. (See the general education requirements as detailed on pages 25-28.)
3. Complete 32 of those credits at the 300- or 400-level.
4. Complete 32 credits at Oakland University; complete the last 4 credits toward the degree at Oakland.
5. Successfully complete at least the last 24 credits at Oakland University as an admitted candidate for the Bachelor of General Studies degree. Candidacy is authorized by the university and the Faculty Council for General Studies when a student's plan of work and supporting rationale have been approved by the General Studies Faculty Advising Committee.
6. Be in substantial agreement with legal curricular requirements of the State of Michigan.

Concentrations or minors

General Studies students may wish to develop programs that include concentrations or minors offered by other academic schools or departments within the university. About 50 minors and concentrations are available to General Studies students; a complete listing may be obtained from the General Studies office.

Students should consult a General Studies counselor to determine policies and procedures on seeking minors or concentrations.

Advising

Because the General Studies program is individualized by design, faculty advising is central to the program. Each student should follow a specific advising procedure, including:

1. Seek an initial appointment with a General Studies counselor. The counselor will explore with the student the suitability of the program to the student's needs and will, if appropriate, assign a faculty adviser. Students entering the program through a change of major or through the readmission process are required to have a grade point average and academic progress indicator (see pages 35-36) of 2.00 or higher.
2. Be assigned a faculty adviser. When a student elects a pre-B.G.S. program through an admission application or a Change of Major Form, the counselor will give the student a list of faculty advisers and their special areas of interest. The student will either select a faculty adviser or will be assigned one.
3. Attend an initial advising session. The student and the faculty adviser will meet to discuss the student's goals and the courses that may help the student achieve those goals. The student will complete a plan of work and write a rationale for course selection.
4. Develop a plan of work and rationale. The plan and rationale are due in the General Studies office within five weeks after the initial meeting with the General Studies counselor.
5. Attain committee approval. After the faculty adviser approves them, the plan and the rationale will be sent to the Faculty Advising Committee for approval. The committee meets monthly to approve student programs. Upon approval, the student will be granted major standing.
6. Substitutions to the plan of work. Students who want to take courses other than those listed on their approved plans of work must gain consent of their faculty adviser or a General Studies counselor. Plan of Work Substitution forms are available from the General Studies office or faculty advisers. They must be submitted to the General Studies office.

Conciliar honors

Conciliar honors are awarded to General Studies students by the Faculty Council for General Studies.

There are two ways in which students may gain conciliar honors. Students who have cumulative grade point averages of 3.60 or better are automatically nominated for conciliar honors. Students may be nominated for honors if they have cumulative grade point averages between 3.30 and 3.59. Students may nominate themselves or be nominated by a faculty adviser. Writ-

ten nominations, accompanied by faculty recommendations, should be made on the basis of excellence in scholarship, appropriate community and university experience, and/or achievement of academic distinction while overcoming extreme adversity. Nominations will be considered by the advising committee and will be forwarded to the faculty council for final approval.

On-campus Evening Degree Programs

Students may earn undergraduate degrees at night in 20 majors, including General Studies. See page 37 for details.

DIVISION OF CONTINUING EDUCATION

Dean: *Lowell R. Eklund*

Office of the Dean: *Gloria Boddy, director, Accounting Assistant Program; Elaine Chapman-Moore, director, General Studies Program; Sheryl Lynn Clark, program manager, Field Services, Evening/Extension Program; Priscilla A. Hildum, director, Legal Assistant and Profession Programs; Nadine E. Jakobowski, director, Marketing, Continuing Education, and Non-credit Computer Courses; Audrey A. Maariner, program director, Personal Financial Planning Program; Katherine Z. Rowley, director, Plastics, Business and Industrial Programs*

The Division of Continuing Education is responsible for evening and extension programming and for noncredit learning experiences. The multifaceted programs of the division are designed to help people perform more effectively on the job and in their daily lives.

Noncredit course department programming includes cooperating with business and industry, governmental units, health care and other organizations in conducting university-level programs to meet their needs. Noncredit offerings are revised continually to meet the expressed needs of nontraditional adult learners, as individuals and as members of organized groups.

Evening Extension Program: Undergraduate

Coordinator of field services: *Sheryl Lynn Clark*

Oakland University offers undergraduate courses at various sites in southeast Michigan, including: Dondero, Kimball and Shrine high schools, Royal Oak; Groves High School, Birmingham; Carleton Junior High School, Sterling Heights; Jewish Community Center, West Bloomfield; Pontiac Art Center, Pontiac; and schools in Clarkston, Dryden, Lake Orion and Romeo.

Extension courses also are offered to businesses, government agencies, private agencies and civic groups. The courses provide special instruction to the employees or members of these organizations. Most courses can be taught at the organization's facility. Course content is structured to address specific needs or goals identified by the organization.

Non-matriculating admission

Potential evening students who have never attended Oakland University and are unable to secure regular admission to the university because of time constraints may register for classes at extension sites on a non-matriculating basis, if space is available. Non-matriculating students are charged an application fee.

Non-matriculating admission is valid for only one semester. During that semester, students must secure regular admission to the university. To be considered for regular admission, students need to submit a second application for admission to the Office of Admissions and Scholarships, with the required fee, and forward transcripts from all past colleges, universities or high schools attended. Students who are accepted will receive a letter of admission. Non-matriculating students will receive full academic credit for courses in which they are enrolled.

Post-baccalaureate admission

Potential evening students who hold baccalaureate degrees or advanced degrees (such as a master's degree) and who are unable to secure regular admission to the university because of time constraints may register for undergraduate classes at extension sites on a post-baccalaureate basis, if space is available.

Under post-baccalaureate status, students are admitted as special non-degree candidates. Their previous academic work is not evaluated by the registrar's office.

To obtain post-baccalaureate status, students must complete the undergraduate admissions application and pay an application fee at the time of registration at the extension site. A duplicated copy of a baccalaureate diploma or a copy of a transcript stating the degree earned must be presented at registration.

Extension course cancellation

Oakland University reserves the right to cancel any extension course that does not have sufficient enrollment. All tuition and fees applicable to the cancelled section will be automatically refunded when a course is cancelled.

Additional Learning Experiences

The Division of Continuing Education course department offers primarily evening non-credit diploma programs and courses in professional, paraprofessional and vocational subjects. It provides on-site or on-campus updates for business, industry and governmental units.

The division offers courses and workshops that provide technical update in such areas as statistical process (quality) control, hands-on computer and word processing, and video production. It offers courses in areas of current significance, such as personal financial planning and investment. It also offers diploma programs, as well as a certificate program in financial planning.

All programs and courses carry the nationally recognized Continuing Education Unit (CEU). Similar to credits, which provide a means of carrying degree work from one school to another, CEUs make it possible to document non-credit work and provide a means to build a permanent record of achievement valuable for evidence of increased capabilities and for job advancement. One CEU equals 10 contact hours of participation in an organized continuing education experience.

Professional staff development programs for business and industry

The Course Department provides on-site professional staff development programs for business and industry for both credit and non-credit. Offered are programs in applied statistics, co-sponsored with the Department of Mathematics of the College of Arts and Sciences, and programs in engineering and computer science, co-sponsored with the School of Engineering and Computer Science. Clients served by these programs include Ford Motor Company, General Motors Corporation, Chrysler Corporation, Federal Mogul Corporation and Eaton Corporation, as well as many automotive suppliers.

Diploma and certificate programs

Diploma programs, a series of courses related to individual objectives, are offered in plastics technology and as preparation for becoming a legal assistant and an accounting assistant.

The Plastics Technology Diploma Program, co-sponsored with the Society of Plastics Engineers, is designed to update those in technically oriented positions and to provide basic knowledge for individuals who wish to enter the plastics industry.

The Legal Assistant Diploma Program, approved by the American Bar Association, is an 18-month evening program that trains paraprofessionals to perform law-related duties for attorneys in a variety of workplaces. Certain legal assistant courses have been approved for one hour of undergraduate credit in political science. Eight credits of these courses can be applied toward a major in political science. For more information on undergraduate credit, see the political science listings or contact the legal assistant program director in the Division of Continuing Education.

The Accounting Assistant Diploma Program is a 15-month program developed in conjunction with business firms to impart skills to paraprofessionals who provide vital support for accountants.

A Certificate Program in Personal Financial Planning, offered in conjunction with the School of Business Administration, augments the professional training of individuals with a broad range of business experience (including Certified Public Accountants who are seeking relicensure hours). The program is designed for individuals who are now or might become involved in advising clients about financial planning.

Reviews for professional licensure and certification

Qualifying hours for CPA relicensing are periodically offered during special weekend programs. A review program for the Certified Internal Auditor examination also is conducted.

A new Certified Information Systems Auditor (CISA) exam review course has been introduced by the Division of Continuing Education course department, in cooperation with the Detroit Area Chapter of the EDP Auditors Association.

Educational test preparation workshops

Test preparation workshops for the Scholastic Aptitude Test (SAT), American College Testing (ACT), Graduate Record Exam (GRE) and Graduate Management Admissions Test (GMAT) are offered year-round. The SAT and ACT workshops are designed for college-bound high school students or individuals who decide to enter a college program after an interruption of the traditional high-school-to-college progression. The GRE and GMAT workshops are designed for individuals seeking admission to a post-baccalaureate degree program.

Conferences

Conferences on topical subjects are offered on a limited basis. Included among the offerings are: the Writer's Conference, which has been conducted each fall for more than 25 years; the Conference on Intelligent Systems and Machines, co-sponsored by the School of Engineering and Computer Sciences; the Prevention of Coronary Heart Disease Symposium, co-sponsored by the School of Health Sciences, Meadow Brook Health Enhancement Institute and Crittenton Hospital.

UNIVERSITY FACULTY

This list reflects faculty appointments effective June 1, 1986 as they were available on the publication date.

Officers of Instruction

JOSEPH E. CHAMPAGNE, President of Oakland University and Professor of Management; Ph.D., Purdue University

KEITH R. KLECKNER, Senior Vice President for University Affairs and Provost and Professor of Engineering; Ph.D., Cornell University

The Faculty

ALI A. ABBASI, Clinical Associate Professor of Health Sciences; M.D., Damascus University

HODA ABDEL-ATY-ZOHDY, Assistant Professor of Engineering; Ph.D., University of Waterloo

BONNIE F. ABIKO, Assistant Professor of Art History; Ph.D., Princeton University

JOYCE ADELSON, Adjunct Assistant Professor of Music; B.M., Eastman School of Music

CHARLES W. AKERS, Professor of History; Ph.D., Boston University

CYRIL A. AKPOM, Adjunct Professor of Nursing; Ph.D., M.D., University of Aberdeen (Scotland)

ASUMAN G. AKSOY, Assistant Professor of Mathematical Sciences; Ph.D., University of Michigan

JANICE ALBRIGHT, Adjunct Assistant Professor of Music; B.M.Ed., Indiana University

RAYNOLD L. ALLVIN, Associate Professor of Music; D.M.A., Stanford University

ABDUL A. AL SAADI, Clinical Assistant Professor of Medical Laboratory Sciences; Ph.D., University of Michigan

OSMAN D. ALTAN, Adjunct Associate Professor of Engineering; Ph.D., University of California (Berkeley)

WALLIS MAY ANDERSEN, Assistant Professor of Rhetoric; Ph.D., University of Detroit

KEVIN T. ANDREWS, Assistant Professor of Mathematical Sciences; Ph.D., University of Illinois

SHELDON L. APPLETON, Professor of Political Science and Associate Dean for Advising, College of Arts and Sciences; Ph.D., University of Minnesota

JAIME V. ARAGONES, Clinical Assistant Professor of Health Sciences; M.D., University of Santo Tomas (Philippines)

JOSEPH A. ARENDS, Clinical Assistant Professor of Exercise Science; M.D., Wayne State University

HARVEY J. ARNOLD, Professor of Mathematical Sciences; Ph.D., Princeton University

JOSEPH ASSENZO, Adjunct Professor of Mathematical Sciences; Ph.D., Oklahoma University

THOMAS A. ASTON, Adjunct Assistant Professor of Theatre and Assistant to the Director, Center for the Arts; Wayne State University

JOHN W. ATLAS, Associate Professor of Education; Ed.D., Wayne State University

ALLEN L. BABCOCK, Clinical Assistant Professor of Physical Therapy; M.D., Loyal-Stritch School of Medicine (Maywood, Illinois)

WILLIAM R. BACK, Clinical Assistant Professor of Exercise Science; D.O., Kirksville College

DONOVAN M. BAKALYAR, Clinical Associate Professor of Medical Physics; Ph.D., University of Minnesota

MORRIS I. BANK, Clinical Assistant Professor of Medical Physics; Ph.D., University of Michigan

EDWARD A. BANTEL, Professor of Education and Psychology; E.D., Columbia University

LIZABETH A. BARCLAY, Assistant Professor of Management; Ph.D., Wayne State University

JOHN BARNARD, Professor of History; Ph.D., University of Chicago

CARL F. BARNES, JR., Professor of Art History and Archaeology and Director, Center for the Arts; Ph.D., Columbia University

RICHARD F. BARRON, Associate Professor of Education; Ph.D., Syracuse University

JOHN W. BARTHEL, Associate Professor of German and Linguistics; Ph.D., University of Illinois

BILLY BEN BAUMANN, Clinical Assistant Professor of Medical Laboratory Sciences; M.D., Washington University (St. Louis, Missouri)

JOHN L. BEARDMAN, Professor of Art; M.F.A., Southern Illinois University

DAVID C. BEARDSLEE, Professor of Psychology and Director, Office of Institutional Research; Ph.D., University of Michigan

RONALD R. BECK, Adjunct Associate Professor of Engineering; Ph.D., University of Iowa
LOIS BEERBAUM, Clinical Instructor in Medical Laboratory Sciences; M.S., Wayne State University
BEVERLY K. BERGER, Associate Professor of Physics; Ph.D., University of Maryland
EDWARD G. BERNACKI, Clinical Assistant Professor of Medical Laboratory Sciences; M.D., Wayne State University
JAY BERNSTEIN, Clinical Professor of Medical Laboratory Sciences; M.D., Wayne State University
PETER J. BERTOCCI, Professor of Anthropology; Ph.D., Michigan State University
KEITH A. BERVEN, Assistant Professor of Biological Sciences; Ph.D., University of Maryland
WILLIAM E. BEZDEK, Associate Professor of Sociology; Ph.D., University of Chicago
BHUSHAN L. BHATT, Associate Professor of Engineering and Acting Associate Dean, School of Engineering and Computer Science; Ph.D., Oakland University
JANE M. BINGHAM, Professor of Education; Ph.D., Michigan State University
PETER J. BINKERT, Professor of Linguistics and Classics; Ph.D., University of Michigan
VIRGINIA R. BLANKENSHIP, Assistant Professor of Psychology; Ph.D., University of Michigan
GLORIA T. BLATT, Associate Professor of Education; Ph.D., Michigan State University
DUANE L. BLOCK, Consulting Professor of Health Sciences; M.D., University of Wisconsin
MARK S. BLUMENKRANZ, Adjunct Professor of Biomedical Sciences; M.D., Brown University
DAVID E. BODDY, Professor of Engineering; Ph.D., Purdue University
SETH BONDER, Adjunct Professor of Mathematical Sciences; Ph.D., Ohio State University
LESLIE DiANNE BORDERS, Assistant Professor of Education; Ph.D., University of Florida
SHARON T. BOSTICK, Assistant Professor, University Library; A.M.L.S., University of Michigan
ELEFTHERIOS N. BOTSAS, Professor of Economics and Management; Ph.D., Wayne State University
NADIA BOULOS, Associate Professor of Nursing; Ph.D., R.N., University of Michigan
LOUIS R. BRAGG, Professor of Mathematical Sciences; Ph.D., University of Wisconsin
JEAN S. BRAUN, Professor of Psychology; Ph.D., Wayne State University
DANIEL N. BRAUNSTEIN, Professor of Management and Psychology and Chairperson, Department of Management and Marketing; Ph.D., Purdue University
DAVID C. BRICKER, Associate Professor of Philosophy; Ph.D., Johns Hopkins University
GOTTFRIED BRIEGER, Professor of Chemistry; Ph.D., University of Wisconsin
JANE BRIGGS-BUNTING, Associate Professor of Journalism; J.D., University of Detroit
MAX BRILL, Associate Professor of Psychology; Ph.D., University of Cincinnati
MARC E. BRIOD, Associate Professor of Education and Philosophy; Ph.D., Northwestern University
RICHARD W. BROOKS, Associate Professor of Philosophy; Ph.D., University of Minnesota
ARNOLD L. BROWN, Clinical Assistant Professor of Health Sciences; M.D., University of Texas
JUDITH K. BROWN, Professor of Anthropology; Ed.D., Harvard University
ROBERT W. BROWN, Associate Professor of Education; Ph.D., Wayne State University
WILLIAM C. BRYANT, Associate Professor of Spanish; Ph.D., University of California (Berkeley)
DOLORES M. BURDICK, Associate Professor of French; Ph.D., University of California (Berkeley)
HARVEY BURDICK, Professor of Psychology; Ph.D., University of Minnesota
RICHARD J. BURKE, Professor of Philosophy and Chairperson, Department of Philosophy; Ph.D., University of Chicago
FRANCIS M. BUTTERWORTH, Professor of Biological Sciences; Ph.D., Northwestern University
HAROLD C. CAFONE, Professor of Education; Ed.D., University of Arizona
BARUCH CAHLON, Associate Professor of Mathematical Sciences; Ph.D., Tel Aviv University
JOSEPH A. CALCATERRA, Clinical Assistant Professor of Industrial Health and Safety; J.D., Wayne State University
DENIS M. CALLEWAERT, Professor of Chemistry; Ph.D., Wayne State University
JOHN B. CAMERON, Professor of Art History and Chairperson, Department of Art and Art History; Ph.D., Yale University
RAY A. CARLSON, Clinical Instructor in Medical Physics; M.S., Wayne State University
LARRY S. CARR, Assistant Professor of Exercise Science; Ph.D., Brigham Young University
PENNY S. CASS, Assistant Professor of Nursing; M.S., R.N., University of Michigan
THOMAS W. CASSTEVENS, Professor of Political Science; Ph.D., Michigan State University
PAUL W. F. CHAO, Visiting Assistant Professor of Management; Ph.D., Washington State University
BANDANA CHATTERJEE, Assistant Professor of Chemistry; Ph.D., University of Nebraska
CHARLES CHING-AN CHENG, Associate Professor of Mathematical Sciences; Ph.D., Rutgers University

KA CHAI CHEOK, Assistant Professor of Engineering; Ph.D., Oakland University
J. CURTIS CHIPMAN, Associate Professor of Mathematical Sciences; Ph.D., Dartmouth College
MICHAEL CHOPP, Associate Professor of Physics; Ph.D., New York University
MARA J. CHRISTIANSEN, Clinical Instructor in Medical Laboratory Sciences; B.S., Capital University (Columbus, Ohio)
ROBERT J. CHRISTINA, Associate Professor of Education; Ph.D., Syracuse University
JOSEPH P. CHU, Clinical Associate Professor of Industrial Health and Safety; Ph.D., Purdue University
FRANK A. CIOCH, Assistant Professor of Engineering; Ph.D., University of Michigan
F. JAMES CLATWORTHY, Associate Professor of Education; Ph.D., University of Michigan
MARY P. COFFEY, Assistant Professor of Mathematical Sciences; Ph.D., University of Michigan
SADIK COKELEZ, Assistant Professor of Management; D.B.A., Texas Technological University
WILLIAM W. CONNELLAN, Adjunct Assistant Professor of Journalism and Associate Provost; Ph.D., University of Michigan
GEORGE E. COON, Professor of Education; Ed. D., Wayne State University
DAVID N. COOPER, Associate Professor of Education and Director, Ken Morris Labor Studies Center; Ed.D., Rutgers University
ROSE MARIE COOPER, Special Instructor in Rhetoric; Ph.D., Wayne State University
BRIAN P. COPENHAVER, Professor of History and Dean, College of Arts and Sciences; Ph.D., University of Kansas
CARLO COPPOLA, Professor of Hindi-Urdu and Linguistics and Director, Center for International Programs; Ph.D., University of Chicago
JOHN D. COWLISHAW, Associate Professor of Biological Sciences; Ph.D., Pennsylvania State University
RONALD L. CRAMER, Professor of Education; Ph.D., University of Delaware
WILLIAM S. CRAMER, Assistant Professor, University Library; M.S.L.S., Case Western Reserve University
THERESA M. CROSS, Assistant Professor of Management; Ph.D., Wayne State University
DOROTHY CUMMINGS, Clinical Instructor in Medical Laboratory Sciences; B.S., Wayne State University
JOHN P. CUTTS, Professor of English; Ph.D., University of Birmingham
GEORGE DAHLGREN, Professor of Chemistry, Vice Provost and Dean of Graduate Study; Ph.D., University of Wyoming
DAVID W. DANIELS, Professor of Music and Chairperson, Department of Music, Theatre and Dance; Ph.D., University of Iowa
SANDRA L. DARBY, Adjunct Instructor in Nursing; M.S.N., R.N., Wayne State University
MANOHAR K. DAS, Assistant Professor of Engineering; Ph.D., Colorado State University
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DOMINIC DeGIUSTI, Adjunct Professor of Biological Sciences; Ph.D., University of Wisconsin
HENRY R. DeLORME, Special Instructor in Exercise Science; M.A.T., Oakland University
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DANIEL E. DeSOLE, Clinical Professor of Health Behavioral Science; M.D., University of Cincinnati
EDWARD B. DeVOL, Instructor in Mathematical Sciences; M.A., University of Michigan
JOHN W. DETTMAN, Professor of Mathematical Sciences; Ph.D., Carnegie Institute of Technology
DAVID DiCHIERA, Adjunct Professor of Music; Ph.D., University of California (Los Angeles)
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J. DAVID DILTZ, Assistant Professor of Economics; Ph.D., University of Illinois (Urbana)
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DAVID P. DOANE, Associate Professor of Economics and Management and Chairperson, Department of Management Information Systems and Quantitative Methods; Ph.D., Purdue University
PAUL M. DOHERTY, Associate Professor of Physics; Ph.D., Massachusetts Institute of Technology
ROBERT L. DONALD, Associate Professor of English; M.A., University of Detroit
A. CHARLES DORANDO, Clinical Professor of Physical Therapy; B.S., Adelphi College
NITIN C. DOSHI, Clinical Assistant Professor of Health Sciences; M.D., S.C.B. College (India)

JOHN DOVARAS, Associate Professor of Music; M.M., Northwestern University and D.Litt (Honorary), Alma College
JAMES W. DOW, Associate Professor of Anthropology; Ph.D., Brandeis University
DAVID J. DOWNING, Associate Professor of Mathematical Sciences; Ph.D., University of Iowa
ALFRED J. DuBRUCK, Professor of French; Ph.D., University of Michigan
ANNA B. DUGAN, Professor of Nursing; Ph.D., R.N., Bryn Mawr College
HOWARD J. DWORKIN, Clinical Professor of Medical Physics; M.D., Albany Medical College
DE WITT S. DYKES, JR, Associate Professor of History; M.A., University of Michigan
WAYNE L. EATON, Clinical Associate Professor of Medical Laboratory Sciences; M.D., Baylor University
JANE D. EBERWEIN, Professor of English; Ph.D., Brown University
ROBERT T. EBERWEIN, Professor of English and Chairperson, Department of English; Ph.D., Wayne State University
ROBERT H. EDGERTON, Professor of Engineering; Ph.D., Cornell University
LOWELL R. EKLUND, Professor of Continuing Education and Dean of Continuing Education; Ph.D., Syracuse University
ISAAC ELIEZER, Professor of Chemistry and Associate Dean, College of Arts and Sciences; Ph.D., Hebrew University of Jerusalem
NAOMI ELIEZER, Adjunct Assistant Professor of Biological Sciences; Ph.D., Hebrew University of Jerusalem
ALICE ENGRAM, Special Instructor in Music; M.M., University of Colorado
MARTIN A. ERICKSON, Adjunct Professor of Engineering; M.S., Chrysler Institute
DAVID H. EVANS, Professor of Engineering; Ph.D., Brown University
PETER G. EVARTS, Professor of English and Rhetoric; Ph.D., Wayne State University
JAMES R. EWING, Clinical Instructor in Medical Physics; M.S., Cornell University
ROBERT I. FACKO, Associate Professor of Music; Ed. D., Columbia University
DONALD R. FALKENBURG, Adjunct Professor of Engineering; Ph.D., Case Western Reserve University
ANNE FEDRELEIN, Associate Professor of Education; Ph.D., University of Michigan
GEORGE F. FEEMAN, Professor of Mathematical Sciences; Ph.D., Lehigh University
LYNN M. FEEMAN, Adjunct Instructor in Nursing; M.S.N., R.N., Widener University
MARCIA FEINGOLD, Assistant Professor of Mathematical Sciences; Ph.D., University of Michigan
DANIEL FINK, Clinical Assistant Professor of Industrial Health and Safety; M.D., University of Michigan
WILLIAM C. FISH, Associate Professor of Education and Philosophy; Ed.D., Columbia University
THOMAS FITZSIMMONS, Professor of English; M.A., Columbia University
YOLANDA E. FLEISCHER, Visiting Assistant Professor of Theatre; M.A., Wayne State University
SHERMAN T. FOLLAND, Assistant Professor of Economics; Ph.D., University of Iowa
AUGUSTIN K. FOSU, Associate Professor of Economics; Ph.D., Northwestern University
SUZANNE O. FRANKIE, Professor, University Library and Dean, University Library; D.P.A., George Washington University
BARRY A. FRANKLIN, Clinical Associate Professor of Exercise Science; Ph.D., Pennsylvania State University
GERALD G. FREEMAN, Professor of Education; Ph.D., University of Michigan
JON FROEMKE, Associate Professor of Mathematical Sciences; Ph.D., University of California (Berkeley)
DANIEL H. FULLMER, Associate Professor of Linguistics and English; Ph.D., University of Michigan
WILLIAM B. FUQUA, Clinical Associate Professor of Medical Laboratory Sciences; M.D., Medical College of Alabama
RITA MUNLEY GALLAGHER, Instructor in Nursing; M.S.N., R.N., Wayne State University
GEORGE J. GAMBOA, Associate Professor of Biological Sciences; Ph.D., University of Kansas
WILMA GARCIA, Associate Professor of Rhetoric; Ph.D., Wayne State University
GEORGE L. GARDINER, Professor, University Library; M.A., University of Chicago
ROBERT G. GAYLOR, Associate Professor, University Library; M.L.S., University of Oklahoma
JULIEN GENDELL, Associate Professor of Chemistry; Ph.D., Cornell University
GEORGE R. GERBER, Clinical Associate Professor of Health Sciences; M.D., Wayne State University
LEONARDAS V. GERULAITIS, Associate Professor of History; Ph.D., University of Michigan

RENATE GERULAITIS, Associate Professor of German; Ph.D., University of Michigan
FRANK J. GIBLIN, Associate Professor of Biomedical Sciences; Ph.D., State University of New York
HARRY GOLD, Associate Professor of Sociology; Ph.D., University of Michigan
ROBERT J. GOLDSTEIN, Associate Professor of Political Science; Ph.D., University of Chicago
SEYMOUR GORDON, Clinical Professor of Health Sciences; M.D., University of Michigan
SHELDON R. GORDON, Assistant Professor of Biological Sciences; Ph.D., University of Vermont
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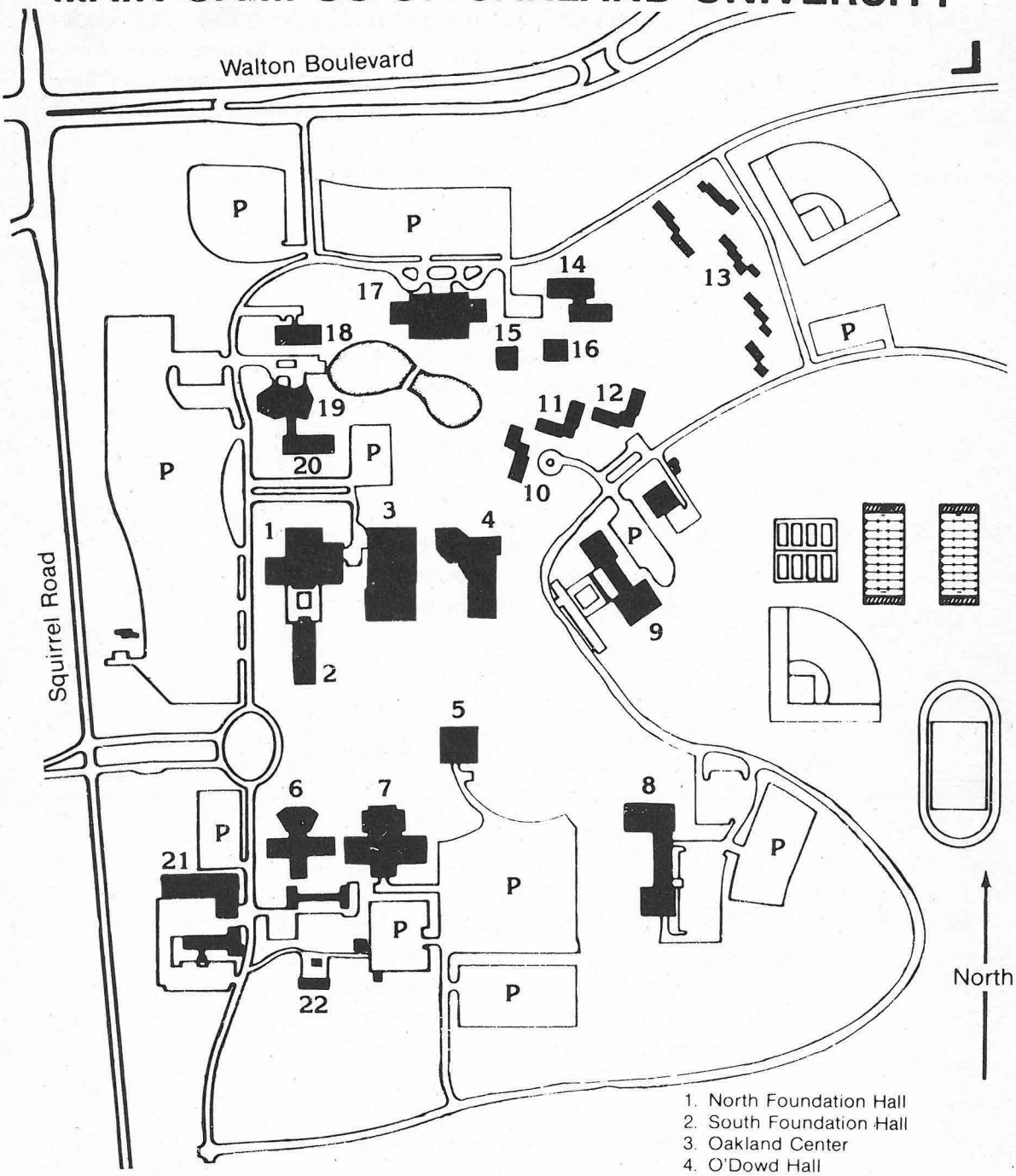

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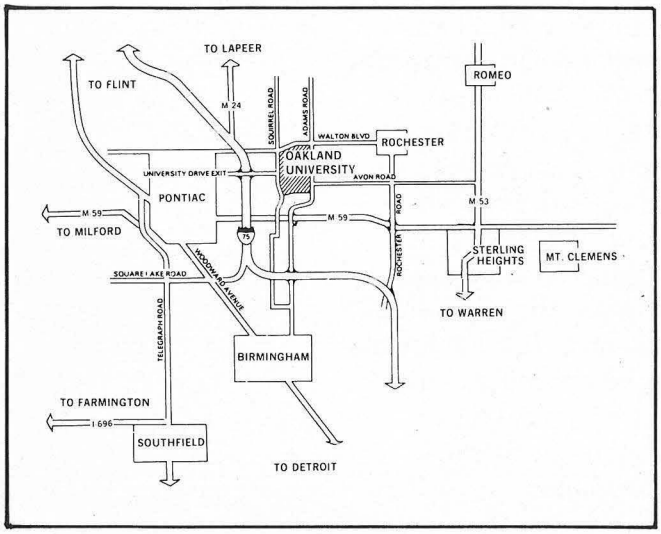

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