Appendix A: Goals And Objectives

Master Of Science In Information Technology Management Program

Management Information Systems
Program's Goals and Objectives

The major in management information systems develops the skills needed to develop systems that meet the various objectives of a business organization. Since the information systems development strategies within a firm have changed over the last few years from internal development of systems acquisition, the role of MIS programs have also changed dramatically. There programs have to train students not only in the development of systems if the students are looking for careers in software development firms, but also in the end-user application development using high-level graphical languages such as VBasic and HTML. The MIS program at Oakland University, hence, is oriented to training students in both the conventional systems development approaches as well as Graphic User Interface (GUI) based application development.

The students start with a general understanding of desktop software and MIS foundations, and move to two basic courses: systems analysis and design, and data base management. These two provide the student the opportunity to understand how to translate user requirements to computer system specifications and implement a part of the system using data bases. In addition, to better introduce the system to physical system implementation, the students are exposed to programming concepts in C++ and/or Visual Basic. In addition, the students are exposed to advanced information technology and application concepts such as Web-development (for e-commerce type applications), network foundations (for understanding the way organizations are networked today) and decision support systems (to model business decisions), etc.

The learning objectives of this degree represent the common body of knowledge and skill categories established by Association of Computing Machinery (ACM) and other IS organizations such as Association of Information Systems (AIS). The curriculum is continuously revised to reflect the needs of the changing business environment and both the MIS club, which brings various industry representatives to campus, and our membership in SIM (Society of Information Management), give us opportunities for gathering up-to-date information on business and IT/IS trends. The curriculum is also consistent with the SBA mission in terms of advancing students' knowledge and abilities, specifically in the application of technology.

The faculty as a group engages in service (membership in SIM as well as participation in faculty research seminars), research (publish in various reputed MIS journals and present at national as well as regional conferences), and teaching (using various advanced tools and techniques) in the areas mentioned above. In addition, faculty use professional development opportunities to remain current and share this knowledge with students and the community using annual conferences and joint-research investigations. MIS Faculty members also collaborate with other

OU faculty, industry representatives, and students in pursuing specific research or exploratory type activities.

Appendix B: Programs At Other Universities

Master Of Science In Information Technology Management Program

	University/College	Program	School	Dept	AACSB Accredited	Est. Enrol.	Credits	Target Audience	Comments on Emphasis	Appendix B
	Local Management Information Systems, Information Technology and Computer Science Related Programs									
1	Central Michigan University	Master of Science in Information Systems	College of Business Administration		Yes	85	30		The Master of Science in Information Systems is designed for the individual who may not have an undergraduate Information Systems (IS) degree or related emphasis. It serves those market segments where an IS graduate degree is preferred: individuals entering systems positions; those who wish to teach computer applications and IS at community and four-year colleges; and those who will work with IS in areas such as hospital administration and law enforcement.	
2	Wayne State University	MBA	School of Business Administration	Information Systems and Manufacturing	Yes	30	36+pre-core	Trying to get working professionals from all over Metro Detroit.	
3	University of Michigan - Ann	MBA	School of Business	Computer and Information	Yes		60		New e-Lab, e-commerce courses,

	Arbor		Administration	Systems					focus on "Techno-MBAs"
4	University of Michigan - Ann Arbor	Master of Science in Information	School of Information		Not a business school	100	48		archives and record management, HCI, information economics/mgt/policy, library and information services
5	Oakland University	Master of Science in Information Systems Engineering	School of Engineering and Computer Science	Computer Science and Engineering	Not a business school	Pending Approval	32		The master in ISE is primarily aimed at individuals who want to focus on building information systems. It strives to provide a more practice-oriented course setting.
6	University of Michigan - Dearborn	Master of Science in Information Systems & Technology	College of Engineering and Computer Science	Industrial and Systems Engineering & Computer Engineering	Non-Business	8	30	"Students who want to complement, extend, and integrate technical and organization knowledge on information systems", "students who possess either technical knowledge about computers and IS, or knowledge about information needs and IS requirements in organizations, but who want	Emphasis in business processes and ERP, functional areas in manufacturing and service industries

								to expand their knowledge in a constructive way"	
7	University of Michigan - Ann Arbor	Master of Computer Science and Engineering	College of Engineering	Electrical Engineering and Computer Science	Not a business school	200	30	Highly technical engineers	hardware, software, intelligent systems, VLSI
8	Michigan State University	Master of Computer Science and Engineering	College of Engineering	Computer Science and Computer Engineering	Not a business school	40	30	Highly technical engineers	
9	Baker College	MBA		CIS	No		50	The Computer Information Systems concentration has been designed for managers who work (or desire to work) with and understand the information resources of their companies	"MBA for busy people", on-line option
10	Lawrence Technological University	Master of Science in Information Systems	College of Management				30+pre-core	Working students. "Enhance the graduate's performance in managerial	New e-commerce and database technology concentrations (Jan 2001)

							positions by helping him or her develop skills in both professional information systems and leadership."	
11	Walsh College	Master of Science in Business Information Technology	No		107	36-42	It is designed for the business professional that has responsibility for planning, integrating, operating and/or improving business information technology systems	

Appendix C: Comments From Industry

Master Of Science In Information Technology Management Program

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Michele Chulick, Director - Corporate Operations Analysis
Beaumont Hospital

Interesting that you sent this. I have an employee who finished her MBA last June, and has heard about the potential of this program. She is very interested in the opportunity that this program presents to forward her knowledge.

This would be a fabulous Master's program and one that has great applicability in today's management circles. The process that we are following to implement Oracle applications is clearly something that would be part of curriculum for this program.

John V. Cipriani
Business Systems Analyst/Software Support Supervisor
Eaton Corporation

Mohan:
It looks very interesting. I might take a few courses myself.

Joe Mawhinney
Director of IS
Durakon Industries, Inc.

Dr. Tanniru,
I have reviewed the 4 page overview of the Master's in IT Management program that is being proposed at Oakland University. I STRONGLY support this program as it is presented. I believe there is great value in offering a masters program that has an information technology focus. The breadth and scope of IT in today's business world requires a wealth of knowledge and foresight. The opportunities available in the IT arena surely warrants further education with better focus within that field.
Durakon Industries currently has two candidates for the program. They were planning to start the standard MBA program, however they will be in contact with you to see what steps are needed to pursue enrollment in this program.

Tom Hammond
President, AIT

Mohan, as President of Advanced Industrial Technologies, which consists of four technology companies, I give a strong endorsement to this program.

If it was implemented, I would recommend two to three people in my company to strongly consider this program to provide a strong platform for growth in our business.

My one comment regarding this program is a recommendation that you add a course on Change Management in IT Strategy. Potentially this topic is included in your Organizational Management Course or Program Management, but if it is planned in either of these courses, I believe it needs to be an extensive element. On leading businesses into the future, I found this to be such a key element of any new process redesign with or without IT implementation.

Jack W. Van Tiem
Vice President, IT & Master Vendor Operations
MSX International

We will encourage folks to enroll in this program.

Stuart D. Doyle
President, EDS Delphi

Mohan, thank you for the opportunity to review the materials for the Master's program in Information Technology Management at Oakland University. I believe that Oakland University must have a masters program in Information Technology if the University is to be recognized on a both a national and international basis. In my opinion to not have such an offering would make the University not competitive with similar Universities.   I would personally provide a strong endorsement for the approval of such a program and would personally encourage EDS and other executives to attend the program. If I can help in any way with the approval of the program with the Oakland University faculty please let me know.

J. Robert Miller
EDS Information Solutions Midwest Region

I'm sorry for the delay in responding. I was on vacation last week. I have had the opportunity to review the details for your proposed addition to the Graduate Program.   Your proposed Master's of Information Technology Management degree will be a valuable addition to what I consider a strong IT curriculum. After reviewing the course requirements, I strongly endorse the addition of this degree to your program. As you know, EDS is an active participant in many Oakland programs. We are also one of the largest employers of IT professionals in the world.

Keith Ensroth
Kelly Services

I think this proposed program has some great potential value. In my career, I have seen the need to be able to facilitate strong business leaders into an IT leadership role, as well as the need to bring IT professionals with management aspirations into a mindset that helps them apply technology to deliver real business value (not just technology for technology's sake). Personally, I would give this a strong endorsement. However, I defer to Tommi re: making that a general Kelly endorsement.

Based on that approach, I would suggest a few changes to the document.

In the Overview paragraph, I would more strongly focus the fact that, whether you are coming from a business or an IT background, the end goal is the same: using IT for competitive advantage. Therefore, I would drop the "develop desktop applications in support of their need" from the business side of the equation, and refocus the "latest technologies" from the IT side to say that it is "the latest technologies that enable the business to us IT for competitive advantage." I tried to picture myself as each of your three audiences approaching the program and found a few possible modifications to the first part of the program plan. If I were a business professional (non-IT), I have to have the management core as 12 courses in an MBA program. However, my IT colleague has the option of waiving his/her prerequisites based on experience. This doesn't seem to be "fair." On the flip side, as an IT professional, I would probably come in with sufficient experience to waive the IS Management Core and the IT Foundation, but have need of all of the Management Core. Why couldn't my waiving of the IT Foundation be replaced with some of the Management Core, not just with electives?

All the elective courses look very good. The only concern I had was the placement of E-Commerce in "IS Development" together with what looks like all technical courses. I believe there is probably an equal need for an E-Commerce course that is focused on business transformation, than just one that focuses on technology. Overall, great job!

Tommi White, CIO
Kelly Services

I totally agree with Keith Ensroth's comments.

John Crary, CIO
Lear Corporation.

Mohan, this course of study looks excellent. This is exactly what I had in mind when we discussed this. The waiver of classes for prior work or experience is especially important to working executives. What's the next step?

Charles Weingart, Director, M&W Systems
DaimlerChrysler

Mohan - Hello - hope you are well.
As you know, I can not speak for the DaimlerChrysler corporation regarding your request. We are a very large corporation and have very large corporation rules regarding recommendations like your request. That brings up an interesting point. The one thing you might want to add to the proposal is that a course on legal be added. In today's information technology world issues like copyright laws, patents, intellectual property, and even press release policy must be considered part of the toolkit for the IT professional.

I can say after reviewing your information that you would get my strong support. I would suggest to those employees that come to me asking advice on education possibilities that they

consider this program to continue their education. Many employees come to the leadership of ITM to ask which schools and which programs can be used to improve their knowledge base and potentially improve there career opportunities. This proposal reads to be 100% on target for the employee that I talk with.

Your proposal also contains many of the topics and specific subjects that are also a part of the current DaimlerChrysler Information Technology Management (ITM) strategy for the next one to five years. That strategy has been accepted as a global strategy, not just a strategy for the Chrysler group or for the North American market place.

As you know, DaimlerChrysler ITM is already impressed with the quality and quantity of students we have hired from your programs at Oakland. In fact, several recent Oakland grads are members of our high potential group within ITM. They represent the largest number of students by school in the Information Technology Management - Development Program. The program contain only 19 member in total and of that, seven are Oakland graduates!

I look forward to this proposed program becoming one more way to improve the quality and quantity of highly skilled IT professionals available in the Michigan market.

I hope my comment help you because if you're successful then in turn I become successful!

Fred Shuh, E-Commerce Program Manager
gedas, a subsidiary of Volkswagen of America

I think this would be a great program. I asked one of our developers to take a look at this program. Below you will find his thoughts.

Developer's comments:
I think this would be a very good program. Just several thoughts:
1. Software Engineering: should be in IT foundation or at least an elective course
2. Elective courses on the business side:
    a. IT Corporate Strategy
    b. International Business Administration
    c. Small and Midsize IT Company growth strategy
3. Elective on the IS side (Telecommunication Technology including wireless, broad-band, etc.)

Appendix D: Proposed Course Offerings

Master Of Science In Information Technology Management Program

Proposed Course Offerings									
		Fall 2001		**Winter 2002**		**Spring 2002**		**Summer 2002**	
Undergrad	**Pre Core**	MIS 200	Personal Productivity	MIS 200	Personal Productivity	MIS 200	Personal Productivity		
		MIS 200	Personal Productivity	MIS 300	Mgmt Information Systems				
		MIS 300	Mgmt Information Systems	MIS 300	Mgmt Information Systems			MIS 300	Mgmt Info Systems
		MIS 300	Mgmt Information Systems	MIS 300	Mgmt Information Systems				
		MIS 300	Mgmt Information Systems	MIS 300	Mgmt Information Systems				
	Core	MIS 304	Database Management	MIS 304	Database Management	MIS 316	Systems Analysis	MIS 304	Database Management
		MIS 304	Database Management	MIS 304	Database Management				
		MIS 316	Systems Analysis	MIS 316	Systems Analysis				
		MIS	Systems	MIS 316	Systems				

Category	Code	Description	Code	Description	Code	Description	Code	Description
	316	Analysis		Analysis				
Electives	MIS 405	Business Data/Telecom	MIS 405	Business Data/Telecom	MIS 405	Business Data/Telecom	**MIS 442/642**	**Supply Chain Management**
	MIS 426/626	**Web Application Development**	**MIS444/644**	**Simulation in Management**				
	MIS 436	Decision Support Systems	**MIS 480/680**	**Web Page Development**				
	MIS 480/680	**Ecommerce**						
Capstone			MIS 650	IT Management and Strategy				
Electives	**MIS 525**	**Bus Process Innovation**	**MIS 525**	**Bus Process Innovation**	**MIS 646**	**Data Ware. and Mining**	**MIS 638**	**Knowledge Mangement**
	MIS 618	**Network Design and Eval**	**MIS 624**	**Advanced Bus. Applications**	**MIS 606**	**Advancd Database**		
	MIS 622	**Business Applications Dev.**	**MIS 638**	**Knowledge Management**	**MIS 525**	**Bus Process Innovation**		
	MIS 516	**Software Project Mgmt**						
IT	**MIS 514**	**Systems Analysis**						
Core	**MIS 504**	**Intro to IS Mgmt**	MIS 515	Systems Design				

		MIS 505	**Technology of IS**	MIS 505	Technology of IS					
		MIS 524	Enterprise Info Systems	MIS 524	Enterprise Info Systems	MIS 524	Enterprise Info Systems	MIS 524	Enterprise Info Systems
		MIS 524	Enterprise Info Systems	MIS 524	Enterprise Info Systems				
				MIS 524	Enterprise Info Systems				
Graduate									
		Fall 2001		**Winter 2002**		**Spring 2002**		**Summer 2002**	
			22		21		7		5
					43				
			FTE Analysis:		8.6 FTEs to cover Fall and Winter		12 Courses in Spring and Summer. 6 of 12 can be covered by faculty during
					8.4 FTEs available (See Appendix G)		spring/summer of 2002. Part time or adjunct required for 6 courses.
Notes:		**MIS 524 required in MBA program**							
		MIS 525 required in old MBA program							
		Master Program Courses are in bold.		**The Template represents a two year repeating pattern of courses**					

Appendix E: Resource Comparisons (98-99) & (2001-02)

Master Of Science In Information Technology Management Program

Resource Comparison of MIS Program in 1998-99 and 2001-02 (With New Masters Program)							
Fall 1998 MIS Classes		**Winter 1999 MIS Classes**		**Fall 2001 MIS Classes**		**Winter 2001 MIS Classes**	
MIS 200	Persnl Product/Info Tech	MIS 200	Persnl Product/Info Tech	MIS 200	Persnl Product/Info Tech	MIS 200	Persnl Product/Info Tech
MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems	MIS 200	Persnl Product/Info Tech	MIS 300	Mgt Information Systems
MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems
MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems
MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems	MIS 300	Mgt Information Systems
MIS 304	Database Management	MIS 304	Database Management	MIS 304	Database Management	MIS 304	Database Management
MIS 316	Systems Analysis	MIS 316	Systems Analysis	MIS 304	Database Management	MIS 304	Database Management
MIS 316	Systems Analysis	MIS 316	Systems Analysis	MIS 316	Systems Analysis	MIS 316	Systems Analysis
MIS 405	Business Data/Telecom	MIS 416	Advanced Systems	MIS 316	Systems Analysis	MIS 316	Systems Analysis

			Analysis				
MIS 436	Decision Support Systems	MIS 426	GUI Application Development	MIS 405	Business Data/Telecom	MIS 405	Business Data/Telecom
MIS 480	Spec Topic: Web Applic Dev	MIS 480/680	Spec Topic: Web Page Devel	MIS 436	Decision Support Systems	**MIS 444/644**	**Simulation in Management**
MIS 502	Persnl Product/Info Tech	MIS 502	Persnl Product/Info Tech	**MIS 426/626**	**Web application Dev**	**MIS 480/680**	**Spec Topic: Web Page Devel**
MIS 524	Enterprise Infor Systems	MIS 502	Persnl Product/Info Tech	**MIS480/680**	**Ecommerce**	**MIS 504**	**Intro to IS Management**
MIS 524	Enterprise Infor Systems	MIS 524	Enterprise Infor Systems	**MIS 504**	**Intro to IS Management**	**MIS 515**	**Systems Design**
MIS 525	Bus Process Innov & Mgt	MIS 524	Enterprise Infor Systems	**MIS 505**	**Technology of IS**	MIS 524	Enterprise Infor Systems
MIS 525	Bus Process Innov & Mgt	MIS 525	Bus Process Innovation/Mg	**MIS 514**	**Systems Analysis**	MIS 524	Enterprise Infor Systems
MIS 525	Bus Process Innov & Mgt	MIS 604	Database Management	**MIS 516**	**Sortware Project Mgmt**	MIS 524	Enterprise Infor Systems
MIS 604	Database Management	MIS 644	Simulation in Management	MIS 524	Enterprise Infor Systems	MIS 525	Bus Process Innovation/Mg
MIS 605	Business Data/Telecom	MIS 680	Spec Topic: Web Page Dev	MIS 524	Enterprise Infor Systems	**MIS 624**	**Advanced Business Apps**
MIS 680	Spec Topic: Web Page Dev			MIS 525	Bus Process Innovation/Mg	**MIS 638**	**Spec Topic: Knowledge Mgt**
				MIS 618	**Network Design and Eval**	**MIS 650**	**IT Strategy Management**
				MIS 622	**Businss Application Dev**		

					Master Program Courses Bolded						
20 Sections	4.0 FTEs		19 sections	3.8 FTEs	22 Sections	4.4 FTEs		21 Sections	4.2 FTEs		
			39 Total Sections 7.8 FTEs					**43 Total Sections 8.6 FTEs**			
Faculty	Lauer	5			Faculty	Lauer	5				
	Sharma	5				Sharma	5				
	Mathieson (chair)	2				Mathieson	5				
	Hough	5				Tanniru (ATiB classes)	0				
	Tanniru (ATiB classes)	0				Sugumaran	5				
	Tower	5	**4.4 FTEs**			Setzekorn	5				
		22				Isken	5				
						Deng	5				
						Rajagopalan	5				
						New Chair	2				
							42	**8.4 FTEs**			

Appendix F: Library Holdings

Master Of Science In Information Technology Management Program

MEMORANDUM

TO: Professor Vijayan Sugumaran
            School of Business Administration

FROM: Mildred H. Merz
            Coordinator for Collection Development

            and

            Shawn V. Lombardo
            Librarian Liaison to the School of Business Administration

SUBJECT: Library Collection Evaluation for proposed Master's in IT Management

DATE: December 5, 2000

In preparing this report to assess the Library's ability to support the proposed master's degree in IT Management we used a number of approaches. We consulted the proposal you provided dated 11/1/00, referred to articles you mentioned that rank journals in the area of management information systems (listed at end of report), reviewed recent book acquisitions of the Baker Library of the Harvard Business School (www.library.hbs.edu), met with you, and checked several periodical and book vendor indexes.

Collection Strengths

The Library does have current subscriptions to the top ranked journals in management information systems. It subscribes to what Hardgrave and Walstrom in their article refer to as the "top tier" journals (MIS Quarterly, Information Systems Research, Management Science, and Communications of the ACM). Of the next 9 journals in importance (described by them as "outstanding") the Library has 8—with the 9th appearing in Appendix A as a journal to consider adding. To support programs for the School of Engineering and Computer Science the Library subscribes to many journals in the area of computer science that are also quite relevant to this program—especially the journals, proceedings, and newsletters of the Association for Computing Machinery and the IEEE transactions. The Library also has surprisingly strong collections of books on computer security and Java and JavaScript.

Since students rely heavily on journal indexes to identify relevant articles to write papers and prepare projects, it is quite important that the Library provide online databases related to their

coursework. The Library subscribes to the premier business index, ABI/Inform. At the moment we have access to it both through FirstSearch and through ProQuest. Both are searchable by OU students, staff, and faculty from campus and from their homes or places of work. Some of the articles indexed in ABI contain not only very helpful abstracts but also links to the fulltext of articles from several journals relevant to IT Management. Some of the journals with fulltext articles in ABI include Journal of Management Information Systems, MIS Quarterly, Supply Management, and Technology Analysis & Strategic Management. The Library also has print subscriptions for the first two titles, but not for the second two. (The FirstSearch version links to fulltext while the ProQuest version includes full graphics and text of many articles.) ABI does not index the more technical/computer science oriented journals. For that aspect of information technology, students will need to use "Web of Science"—an online database that we have added recently which is the online equivalent of Science Citation Index.

Through its InterLibrary Loan unit, the Library provides students and faculty with the ability to secure photocopies of articles from journals it does not own and borrow books not in its collections. While I am suggesting that the Library should increase its holdings of journals and books for this program, it would never be possible for the Library to own every item a student or faculty member might need for research. We are quite fortunate that ILL is becoming ever more efficient and able to secure materials in ever shorter timeframes. ILL can usually obtain photocopied articles in a week or less with books taking longer since they must be shipped. Graduate students and faculty also have available to them the *Uncover* document delivery service for times when they need journal articles in 24 hours or less. Of course, this presumes that *Uncover* includes the journal within its collections (not all titles listed in Appendix A are available through *Uncover*). Fortunately the European Journal of Operational Research is available for $30 per article, but Industrial Management and Data Systems does not have recent articles available through *Uncover*. Graduate students are allowed to order up to 10 articles a term as long as each article costs under $35 each. This service is funded by the Library and through a grant from the OU Credit Union.

As mentioned earlier, the proposed program will benefit from the support the Library already provides programs in engineering and computer science. The proposed master's in Information Sciences Engineering from the Department of Computer Science and Engineering will provide still additional support for IT Management if it is approved and funded. Many of the library resources that we will purchase to support Information Sciences Engineering will have direct relevance to IT Management also. Both programs share interests in data mining and data warehousing, in e-commerce and Enterprise Resource Planning , and in information security.

Collection Needs

While the Library does have several of the basic journals related to information technology and does benefit from ongoing availability of ACM and IEEE journals, it lacks a number of important journals and professional magazines which frequently contain articles of direct relevance to courses projected for this program. The non-asterisked titles in Appendix A are all periodicals which showed up repeatedly when we searched ABI/Inform (but are not available fulltext there) using subjects related to these courses. The asterisked titles, many of which were also frequently cited in ABI, are ones in which faculty for the proposed program have published.

Obviously, there are some significant titles on the list which are too expensive even to consider (<u>European Journal of Operational Research</u> at $3,727 per year and <u>Industrial Management and Data Systems</u> even more outrageously priced at $6,999 per year). Nevertheless, the $5,000 that we have allocated for year one purchase of journals should allow the Library to get subscriptions to the titles that will be most in demand by students in the program. In all cases we will seek to obtain subscriptions in online form if at all possible.

In addition to journal articles, students also need books to support their research needs. Books fulfill needs for basic information about a topic, for thorough coverage of a subject, and for introductory "how-to-do-it" explanations concerning software, procedures, etc. A review of currently available books relevant to the proposed courses revealed over 130 relevant titles we do not own. There are between 40 and 50 new titles published each year. To get the program off to a strong start we have budgeted for the purchase of around 50 titles in year one ($2,500) and around 25 titles each year after that ($1,250).

We did not budget for another resource that would also be useful. The Library does not subscribe to the highly important and very expensive INSPEC database which includes <u>Computer and Control Abstracts</u>. Annual cost of this database is over $28,000. Unfortunately, there are a few important IT journals which are only indexed there.

As with most programs, resources needed for this degree will benefit other programs as well. Journals and books purchased for graduate students in IT Management will be used not only by them but also by MBA students, by undergraduates in management information systems and other business related disciplines, and by students in computer science. The funding suggested in Appendix B is modest, but it is very necessary to provide support for students to be able adequately fulfill the requirements of the program—and not to be highly frustrated by a lack of the resources they need. Students expect essential library materials to be available here and not just at other area libraries.

Below are the articles we consulted when finalizing titles included in Appendix A:

Hardgrave, Bill C. and Kent A Walstrom. "Forums for MIS Scholars." <u>Communications of the ACM</u>, 40.11 (November 1997), 119-124.

Walstrom, Kent A. and Lori N. K. Leonard. "Citation Classics from the Information Systems Literature." <u>Information & Management</u>, 38 (2000), 59-72.

Whitman, Michael E., Anthony R. Henrickson, and Anthony M. Townsend. "Research Commentary. Academic Rewards for Teaching, Research, and Service: Data and Discourse." <u>Information Systems Research</u>, 10.2 (June 1999), 99-109.

cc: Randy Hansen
     Elaine Didier

Appendix A

IT Management Journals to Consider for Subscription

Behaviour and Information Technology (Taylor & Francis) WoS $598
CIO (CIO) ABI $69
Computers & Operations Research (Elsevier) ABI, WoS $1,945
Computers in Industry (Elsevier) ABI, WoS $868
Computing Canada (Plesman) ABI $74
European Journal of Information Systems (Palgrave) ABI, WoS $319
* **European Journal of Operational Research* (Elsevier) ABI, WoS $3,727
Expert Systems (Blackwell) WoS $329
I/S Analyzer Case Studies (United Commun Grp) ABI $495
*Industrial Management and Data System*s (MCB University Press) ABI, WoS $6,999
***Information & Software Technology* (Elsevier) ABI, WoS $727
Information Processing and Management (Elsevier) ABI, WoS $981
*Information Systems Journa*l (Blackwell) WoS $394
International Journal of Computer Applications in Technology (Inderscience) WoS $400
International Journal of Information Management (Elsevier) ABI $575
International Journal of Project Management (Elsevier) ABI $763
International Journal of Technology Management (Inderscience) ABI, WoS $950
Journal of Computer Information Systems (Society of Data Educators) WoS $125
Journal of Information Technology (Routledge) WoS $520
Journal of Intelligent Manufacturing (Kluwer) WoS $680
Journal of the American Society for Information Science and Technology 1997 cut (Wiley) ABI $1,380
Journal of the Operational Research Society (Palgrave) ABI, WoS $751
Manufacturing Systems (Cahners) ABI $85
***Organization Science* (Institute of Management Sciences) ABI $202

Total cost of all journals on list=$23,230. Total cost of all titles minus two over $3,000=$13,230.

*Titles in which faculty for program publish.
**Interloaned.
ABI=ABI/Inform, online index to business journals and magazines
WoS=Web of Science, online equivalent to Science Citation Index.

Appendix B—Budget

Library Materials Costs

	Year 1	Year 2	Year 3	Year 4	Year 5
Serials subscriptions	$5000	$5500	$6500	$7205	$8425
Books	$2500	$1250	$1312	$1378	$1447
Serial backfiles	0	$2000	$2000	0	0

		$7500	$8750	$9862	$8583	$9872
Total Annual Cost						

Presumes 10% increase in cost of serial (i.e., journal) subscriptions each year and 5% increase in cost of books each year, with addition of $500 worth of new journals in year 3 and year 5.

Appendix G: Sample Curricula

Master Of Science In Information Technology Management Program

	Plan A One Year	Plan B Two Years
	(32 credits)	(38 credits)
	Assumes Mgmt and IS core is completed	Assumes Mgmt core is completed
Fall 2001	Systems Analysis	Intro to IS Management
	Software Project Management	Technology of IS
	Business Applications Development	
	E-Commerce	
Winter 2002	Systems Design	Systems Analysis
	Simulation in Management	Systems Design
	Advanced Business App. Development	
Spring 2002	**Network Design and Evaluation**	**Knowledge Based Systems**
	Knowledge Based Systems	**Simulation in Management**
		Software Project Mgmt
Summer 2002	**Bus Process Innovvation**	
	Project	**Bus Process Innovation**

		Supply Chain Management
Fall 2003		
		Web Application Development
		Business Applications Development
Winter 2004		
		E-Commerce
		IT Management and Strategy
These sample are based on planned electives for 2000 - 2004.		
The electives listed are already in the current curriculum and will be taught		
during these semesters, whether or not the new program is approved.		
Other combinations of electives are possible, given what is planned (see Appendix E).		
Electives are in bold.		

Appendix H: Budget Projections For Five Years - Revised 3/14/01

Master Of Science In Information Technology Mangement Program

					Appendix H
Budget Projections for Five Years					
Revenue					

Description	Year 1	Year 2	Year 3	Year 4	Year 5
Students Enrolled	25	50	50	50	50
Credits Enrolled per student per year	18	18	18	18	18
Tuition per Credit Hr	$ 233.81	$ 240.82	$ 248.05	$ 255.49	$ 263.16
Total Credit Hrs per year	450	900	900	900	900
Total Tuition per year	$105,214.50	$216,741.87	$223,244.13	$229,941.45	$236,839.69
Course Fees	$ 5,400.00	$ 10,800.00	$ 10,800.00	$ 10,800.00	$ 10,800.00
Total Revenues per year	$110,614.50	$227,541.87	$234,044.13	$240,741.45	$247,639.69
*Credits enrolled per year per student assumes 6 credits fall, 6 credits winter, 3 credits spring and 3 credits summer.					
(assumes 25 admits/year, 18 credits/year and approx 36 credits to complete the program)					
**Course Fees are calculated at $12 per credit hour.					
++Tuition is calculated at $227*1.03 for year one with an annual increase of 3%.					
Expenditures					
Marketing and Mailing Costs	$ 20,000.00	$ 10,000.00	$ 10,000.00	$ 5,000.00	$ 5,000.00
Clerical Support (15 hrs casual)	$ 11,475.00	$ 11,819.25	$ 12,173.83	$ 12,539.04	$ 12,915.21
Fringe Benefits	$ 906.53	$ 933.72	$ 961.73	$ 990.58	$ 1,020.30
Travel (Recruitment)	$ 4,000.00	$ 2,000.00	$ 1,000.00	$ 1,000.00	$ 1,000.00
Telephone	$ 200.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00
Library Costs	$ 8,000.00	$ 9,000.00	$ 10,000.00	$ 10,000.00	$ 10,000.00
Supplies and Services	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00	$ 3,000.00
Graduate Assistant Stipends	$ 25,000.00	$ 25,750.00	$ 26,522.50	$ 27,318.18	$ 28,137.72

Graduate Assistant Tuition and Fees	$ 24,622.90	$ 25,325.79	$ 25,976.01	$ 26,645.74	$ 27,335.57
Equipment	$ 10,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00	$ 5,000.00
Total Expenditures	$107,204.43	$ 92,928.76	$ 94,734.07	$ 91,593.55	$ 93,508.81
Annual wage and graduate assistant stipend increases calculated at 3%.					
Graduate Assistant Stipend calculated at $5,000 for first year with 3% increase annually.					
See Appendix F for a detailed report of library costs.					
Net Institutional Profit:	$ 3,410.08	$134,613.11	$139,310.05	$149,147.90	$154,130.89

Appendix I: Course Outlines

Master Of Science In Information Technology Management Program

Business Core

ACC 512   Accounting (Financial/Managerial) 3
MKT 560   Marketing 3
ORG 530   Organizational Behavior 3
POM 521   Operations management **OR** 3
FIN 533   Finance 3

IS Core

MIS 504   Introduction to IS Management 3
MIS 505   Technology of Information Systems 3

IT Foundations

MIS 514   Systems Analysis 3
MIS 515   Systems Design 3
MIS 516   Software Project Management 3

Electives

Courses related to IS Development in Networked Organizations

MIS 618 Network Design and Evaluation 3
MIS 620 E-Commerce 3
MIS 622 Business Applications Development 3
MIS 624 Advance Business Applications Development 3
MIS 628 Web Application Development 3

Courses related to IS Strategy and Management

MIS 525 Business Process Innovation 3
MIS 640 Enterprise Resource Planning 3
MIS 642 Supply Chain Management 3
MIS 648 Topics in Information Technology Management 3

Courses related to Data and Decision Management

MIS 606 Advanced Database Management Systems 3
MIS 636 Decision Support Systems 3
MIS 638 Knowledge Management 3
MIS 644 Simulation in Management 3
MIS 646 Data Warehousing and Data Mining 3

Capstone Course

MIS 650 IT Management Strategy 3

Introduction to IS Management
MIS 504
New Course

Course Description

Management largely involves management of information. To the extent that technology enables this management of information, changes in technology will entail managerial changes in the way resources are measured, allocated and organized. Effective management requires cognizance of the relationships between technology, strategy, structure, processes, roles, and external environment to maintain congruence with the new technology and to thereby leverage its capabilities. As previous constraints are radically reduced or eliminated, business strategies, structures, processes and roles must be re-adjusted so as to optimize firm productivity and profitability.

Learning Objectives

- Recognize the relationships between business pressures, organizational responses, and information systems.
- Define computer-based information systems and IT. Understand various information systems and their evolution, and categorize specific systems. Identify the major support systems and relate them to managerial functions.
- Understand information architecture and infrastructure. Compare legacy systems, client/server architecture and enterprise-wide computing and analyze their interrelationship.
- Understand strategic information systems (SIS), explain their advantages, and describe/discuss representative SIS and the competitive advantage they provide.
- Understand the resource-based view, Porter's competitive forces model and value chain model, and several frameworks that show how IT supports the attainment of competitive advantage.
- Understand the various ways in which communication is executed over the Internet.
- Understand group support systems and how they help decision making in most organizations today.
- Understand electronic commerce, its dimensions, benefits, limitations and its process of operations. Categorize practical applications based on B2B and B2C support levels.
- Understand ethical and other impacts of technology on individuals, society and organizations.
- Understand the facts and issues related to transaction processing systems and innovative, functional, and supply chain integration in an organization. Understand how IT supports the core transactions in an organization.
- Understand support technologies for executives and managers. Discuss systems such as DSS and EIS, and different issues related to these.
- Understand the handling of the increased amount of information in both external and internal databases, including approaches such as data warehousing, data mining, online analytical processing, and knowledge bases.
- Understand the concepts of intelligent systems such as AI systems, expert systems, intelligent agents and virtual reality-based systems; and the concepts of fuzzy logic and neural networks.
- Understand the planning process for an IT infrastructure and the four stage model of information systems planning, and the importance of aligning information systems plans with business plans.
- Understand issues related to the economics of IT. Understand the "productivity paradox", charge back and outsourcing.
- Understand the major approaches to implementing IT- from the traditional system development life cycle to prototyping, rapid application development, and finally, an object-oriented approach.
- Understand issues related to the management of IT resources, roles of information systems departments and end-users, and protection of information resources from disasters and crisis.

Topical Outline

Session 1. Organizations, Environments and IT.
Session 2. Information Technologies : Concepts and Management.
Session 3. Strategic Information Systems.

Session 4. Business Process Reengineering and IT
Session 5. Network Computing: Discovery, Communication and Collaboration.
Session 6. Electronic Commerce.
Session 7. Impacts of IT on Organizations, Individuals and Society.
Session 8. Transaction Processing, Innovative Functional Systems, Supply Chain Integration.
Session 9. Supporting Management and Decision Making.
Session 10. Data and Knowledge Management.
Session 11. Intelligent Support Systems.
Session 12. Planning for Information Technology and Systems
Session 13. Information Economics.
Session 14. Systems Development
Session 15. Managing Information Resources, Control and Security.

Technology of Information Systems
MIS 505
New Course

Description

Information systems rely on a wide array of supporting and enabling technologies. Students must have an understanding of the functionality, capability, and appropriateness of these different technologies from the perspective of designing information system based solutions. This course will provide an introduction to important software technology including office productivity systems, database management systems, programming languages and application development tools. Computer hardware concepts will also be introduced including basic computer architecture, alternative computing platforms, and input/output devices. Finally, the important area of telecommunications and networking technology will be also be covered. Topics include network hardware, operating systems, and topologies, network management, communication protocols, and the Internet.

Topical outline

Session 1 Introduction to IT
Session 2 Business Processes and Managerial Decision Making
Session 3 Office Productivity Systems
Session 4 Computer Hardware
Session 5 Database Management Systems
Session 6 Programming Languages and Application Development
Session 7 Application Development
Session 8 Data Warehousing and Decision Support
Session 9 Computer and Communication Networks
Session 10 Computer and Communication Networks
Session 11 Technology of E-Commerce

Session 12 Technology of E-Commerce
Session 13 Advances and Trends in Information Technology
Session 14 Project Presentations & Course summary

Systems Analysis
MIS 514
New Course

Course Description

The course presents an overview of the theory and practice of developing information systems to meet users' needs. The course focuses on tools and techniques that one can use to analyze user requirements. Classical and structured tools and techniques for describing data flow, data structure, and process flow are discussed. The course also surveys important skills for a system analyst such as fact-finding, written and oral communication, interviewing, project management, and cost-benefits analysis.

Upon the successful completion of this course, a student will be able to:

- **Understand the systems analyst's role and responsibilities**
- **Describe the building blocks of an information system**
- **Understand systems analysis and its different phases**
- **Perform data modeling**
- **Perform process modeling**
- **Understand and perform interaction modeling**

Topical Outline

Session 1: The Systems Development Environment and Role of Systems Analyst
Session 2: Managing the Information Systems Project
Session 3: Automated Tools for Systems Development
Session 4: Determining System Requirements
Session 5: Determining System Requirements (contd.)
Session 6: Structuring System Requirements: Data Modeling
Session 7: Structuring System Requirements: Data Modeling (contd.)
Session 8: Structuring System Requirements: Process Modeling
Session 9: Structuring System Requirements: Process Modeling (contd.)
Session 10: Object-Oriented System Analysis
Session 11: Rapid Application Development
Session 12: System Design and Implementation
Session 13: Presentations
Session 14: Presentations

Systems Design
MIS 515
New Course

Course Description

The course presents an overview of the theory and practice of designing information systems to meet users' needs. The course focuses on tools and techniques that one can use to design systems. Topics covered will include application architecture, database design, input-output design and interface design. The course also surveys important issues relating to system construction, implementation, operations and support.

Upon the successful completion of this course, a student will be able to:

- **Understand the activities in systems design**
- **Understand the tools and techniques involved is systems design**
- **Perform database design**
- **Perform input-output design**
- **Perform user interface design**
- **Understand issues relating to construction and implementation**

Topical Outline

Session 1: The Systems Development Environment and Role of Systems Analyst
Session 2: System Design Methods
Session 3: Application architecture and Modeling
Session 4: Database Design
Session 5: Database Design
Session 6: Database Design
Session 7: Output Design and Prototyping
Session 8: Input Design
Session 9: User Interface Design
Session 10: User Interface Design
Session 11: System Construction and Implementation
Session 12: Systems Operations and Support
Session 13: Presentations
Session 14: Presentations

Software Project Management
MIS 516
New Course

Description

This course is intended to provide students exposure to the issues and challenges both users and systems developers face as they start to develop systems or plan for implementation of technologies in an environment that expects results quickly and successfully. Specifically, by the end of this course, the student should be able to:

- **Understand the project management concepts**
- **Recognize the differences in scope of implementation of systems and technologies**
- **Understand the tasks involved in support of various phases of a project**
- **Estimate the effort needed to perform tasks**
- **Understand the role of teams and team management**
- **Understand the role of customization and adaptation on project management effort**

Topical Outline

Session 1 Introduction - Project Management
Session 2 Project scope: planning, design or maintenance (similarities and differences)
Session 3 Project management tasks for projects of different scope
Session 4 Qualitative modeling of project activities - influence diagrams
Session 5 Environmental factors and contingency planning
Session 6 Sequential Vs concurrent project management - implications
Session 7 Resource (skill and time) planning
Session 8 Resource allocation and team management
Session 9 Project status monitoring and reporting
Session 10 Project review and resource re-allocation
Session 11 Project management tools and their evaluation
Session 12 Project management reporting and analysis
Session 13 Project repositories and updating project knowledge
Session 14 Project Presentations & Course summary

Business Process Innovation
MIS 525
Objective

This course introduces the student to business process analysis techniques including process charting, idea generation and impact analysis, and discusses how information technology can support various process improvements. It then moves from the operational process innovation to innovations in management control, planning, communication (inter- and intra-organization) and global operations.

Topical Outline

Introduction to business process innovation
Discussion of sample business process redesign cases
Business process analysis

Ideas for process redesign and innovation
Impact analysis and the role of IT
Process innovation in inter-organizational operations (customer side)
Process innovation in inter-organizational operations (supply side)
Process innovations in control and monitoring
Process innovations in planning
Process innovations in communications
Process innovations in change management

Advanced Database Management Systems
MIS 606
New Course

Description

This course is intended to provide students with exposure to current topics of advanced research in database management systems. Organizations with distributed and networked databases face a variety of problems and this course addresses some of the issues in transaction management, concurrency control, deadlocks, replicated data management, query processing, and reliability. Database performance and recovery will also be covered.

Learning Objectives:

- **Being able to write complex queries using SQL**
- **Clear understanding of the issues in transaction processing**
- **Understanding of factors affecting database performance**
- **Working knowledge of database administration**
- **Understanding of issues related to distributed databases and query processing**
- **Understand the basics of contemporary database topics such as Object-Oriented Databases, Active Databases, Temporal & Spatial Databases, and Web Databases**

Topical Outline

Session 1 Review of Data Models
Session 2 Review of Relational Database Technology
Session 3 Query Processing (SQL) and Query Optimization
Session 4 Database Administration, Database Performance Tuning
Session 5 Transaction Management and Concurrency Control
Session6 Database Security
Session 7 Overview of Distributed Databases
Session 8 Distributed Query Processing
Session 9 Active Databases and Deductive Databases
Session 10 Object-Oriented Databases
Session 11 Temporal and Spatial Databases and related issues

Session 12 Web Databases
Session 13 Final Project Presentations
Session 14 Final Project Presentations & Course summary

Network Design and Evaluation
MIS 618
New Course

Description

This course provides a general overview of communications network design. Relevant data communication hardware and software characteristics are examined. Students are introduced to network models, and design of local area networks and wide area network along with Intranet and Extranet. The impact of communications technology on organizations as well as trends in the telecommunications industry is explored.

Topical Outline

Session 1 Introduction to Network Technology
Session 2 Telecommunications Models and Networks
Session 3 Networked Business Applications
Session 4 Wide Area Networks (WANs): Principles and Components
Session 5 Local Area Networks (LANs): Principles and Components
Session 6 Techniques for Analyzing and Assessing Network Opportunities
Session 7 Networking Opportunities for Improving Organizational Performance
Session 8 Determining Business Networking Requirements
Session 9 Evaluation and Selection of Alternatives
Session 10 Designing a Network
Session 11 Network Management and Security
Session 12 The Internet, The Intranet, JANET, and Special Uses of Telecommunications
Session 13 Laws and Governance of Telecommunications in the U.S.
Session 14 Future Developments in Business Networking Technology and Applications

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Electronic Commerce
MIS 620
Currently taught as topics course MIS 680

Description

This course provides students with an analytical and technical framework to understand the emerging world of e-commerce. Students learn how Internet can be used for commerce, what is involved in starting up and operating an Internet business, the complexities of the

marketplace for e-commerce (i.e., marketing, advertising, consumer demographics, business models, etc), e-commerce strategy and implementation, and the issues surrounding privacy, security, the protection of intellectual property on the Internet.

Topical Outline

Session 1 What is E-commerce?
Session 2 Foundations of E-Commerce
Session 3 Business Models for E-Commerce
Session 4 Intranet and Extranet
Session 5 Advertising and Marketing on Internet
Session 6 Customer service for e-commerce
Session 7 Infrastructure for EC
Session 8 EC Strategy and Implementation
Session 9 Public Policy: From Legal Issue to Privacy
Session 10 Electronic Commerce for Service Industries
Session 11 Electronic Payment Systems
Session 12 Economics, Global, and Other Issues
Session 13 Elements of Commercial Website Design
Session 14 Future of E-commerce

Business Applications Development
MIS 622
Currently taught as MIS 680 topics

Description

The primary focus of the course is on the principles and applications of object-oriented methods in information systems. Object-oriented concepts and software design and programming principles will be introduced. The purpose of the course is to train students to write reasonably complex business application programs using Java.

Learning Objectives:

- **Being able to write, compile, debug, and execute applications in Java**
- **Clear understanding of object-oriented principles**
- **Understanding of factors affecting application design**
- **Working knowledge of java development environments**
- **Understanding of issues related to performance of java-based solutions**
- **Understanding of concepts specific to Java such as multi threading, exception handling, event handling etc.**

Topical Outline

Session 1 Introduction to Object-Oriented Concepts
Session 2 Programming Basics and Control Structures
Session 3 Arrays and Strings
Session 4 Defining Classes
Session 5 Extending Classes, Inheritance
Session 6 Stream and File Output, Input
Session 7 Utility Classes
Session 8 Creating Windows, Drawing in a Window
Session 9 Handling Events
Session 10 Extending the Graphical User Interface
Session 11 Threads
Session 12 Database Connectivity
Session 13 Exception Handling
Session 14 Final Project

Advanced Business Applications Development
MIS 624
New Course

Description

This course focuses on the issues related to server-side aspects of web-based applications. In particular, it introduces the different solution architectures utilized and their relative advantages and disadvantages. Students are introduced to several server-side technologies such as Java Servlets, Java Server Pages, and Java Beans. This project based course will allow students to get hands on experience through designing and building reasonably complex server-side applications.

3Cr.

Learning Objectives

- **Understand the issues and differences between client-side computing and server-side computing**
- **Understanding of server-side architectures**
- **Understanding of communication between client and server**
- **Working knowledge of Java Servlets, Java Server Pages, and Java Beans**
- **Understanding of issues related to performance of java-based solutions**
- **Enterprise data management and transaction processing through the web.**

Topical Outline

Session 1 Introduction, distinction between client-side Vs. server-side
Session 2 Server side solution architectures

Session 3 Overview of Java Servlets
Session 4 Handling client request and response
Session 5 Handling cookies
Session 6 Session tracking
Session 7 Overview of Java Beans
Session 8 Introduction to Java Server Pages
Session 9 Integration of Java Server Pages and Java Beans
Session 10 Custom JSP Tags
Session 11 Integrating Servlets and JSP
Session 12 Using Applets and Servlet front ends
Session 13 JDBC and database connectivity pooling
Session 14 XML and Java Programming

Decision Support Systems
MIS 636
Description

Spreadsheets are one of the most widely used tools in the business world. They have evolved into a functionally rich platform for quantitative business modeling and decision support system development.

This course will allow students to become power users and developers of spreadsheet based decision support tools for commonly faced managerial decision making problems. They will learn how to conduct "what if?" type analyses, use advanced spreadsheet features such as pivot tables, statistical and financial analysis functions, internal database features, querying external data sources, graphical data display, scenario analysis, risk analysis, goal seeking and solving optimization problems. Students will also learn how to create spreadsheet based decision support tools by using application development features such as Visual Basic for Excel and integrating Excel with other Microsoft Office products such as MS Access and MS Word. This course will integrate the use of spreadsheets with applied management science topics such as decision analysis, Monte-Carlo simulation and optimization models.

Topical outline

Session 1 Introduction – DSS, Modeling, Application Development with Excel
Session 2 VBA for Excel
Session 3 Data analysis and display
Session 4 DSS development with VBA/Integration of Office products
Session 5 Decision Analysis
Session 6 Decision Analysis
Session 7 Optimization with Solver
Session 8 Optimization with Solver
Session 9 Practical Queueing and Inventory Modeling

Session 10 Advanced DSS development topics
Session 11 Simulation
Session 12 Simulation
Session 13 Simulation
Session 14 Project Presentations & Course Summary

Knowledge Based Systems
MIS 638
New Course

Description

This course is intended to provide students exposure to the issues and challenges both users and systems developers face as they analyze and evaluate the potential support of knowledge based systems to meet the qualitative decision making processes as well as support the operational heuristics within an organization. Specifically, by the end of this course, the student should be able to:

- **Distinguish between heuristic based and algorithmic based decision making**
- **Understand the nature of AI in support of heuristic based systems**
- **Understand the differences between various knowledge acquisition techniques, including machine learning techniques**
- **Represent this knowledge using appropriate representations**
- **Prototype the knowledge base using various ES shells**
- **Verify the knowledge base for consistency and completeness**
- **Validate the knowledge base for its face and content validity**
- **Understand the diffusion of this technology to experts and users**
- **Develop strategies for system implementation, evaluation and maintenance**

Topical Outline

Session 1 Introduction - Decision Process Framework
Session 2 Knowledge based systems for competitive advantage
Session 3 Knowledge acquisition - Traditional techniques
Session 4 Knowledge acquisition - Machine learning techniques
Session 5 Knowledge representation and Representational bias
Session 6 Prototyping and Version management
Session 7 Knowledge base verification
Session 8 Knowledge base validation
Session 9 Implementation and Integration
Session 10 Implementation and Organizational diffusion
Session 11 Evaluation and update
Session 12 Advanced applications in AI

Session 13 Advanced applications in AI
Session 14 Project Presentations & Course summary

Enterprise Resource Planning
MIS 640
New Course

Description

This course provides an overview of ERP, a system for effectively planning and managing all the resources of an enterprise. Students gain a broad perspective on enterprise resource planning and enterprise resource management. They learn about issues involved in successfully selecting, implementing, and utilizing Enterprise Resource Planning for improved overall organizational competitiveness. The recent migration of ERP to Internet and future of ERP are also examined.

Topical Outline

Session 1 Introduction to ERP
Session 2 Enterprise Resource Management
Session 3 Customer Integration
Session 4 Engineering Integration
Session 5 Manufacturing Integration
Session 6 Sales and Operations Integration
Session 7 Distribution Integration
Session 8 Integrating the Supply Chain
Session 9 ERP System Requirements
Session 10 Selecting the Right ERP System
Session 11 ERP Implementation
Session 12 Implementation: Generalized Industry Application
Session 13 ERP and E-Business
Session 14 Future of ERP

Supply Chain Management
MIS 642
Course Description

Information technologies have enabled the efficient flow of information, materials and services from raw materials suppliers through to final consumers by advancing supply chain integration and coordination. Aspects related to logistics, operations and information systems, as well as coordination strategies and supply chain partnerships are included.

Learning Objectives

- **Understand the impact of supply chain management on organizational performance.**
- **Understand the influence of integrated supply chain management on functional activities such as product design, information systems, manufacturing planning and control, inventory management, human resource development, financial planning, forecasting, sales, quality management, etc.**
- **Understand the challenges involved in implementing an integrated supply chain management strategy, and ways to meet these challenges.**

Topical Outline

Session 1 Introduction to Supply Chain Management.
Session 2 The Role of Information Systems and Technology in Supply Chain Management.
Session 3 Developing and Maintaining Supply Chain Relationships.
Session 4 Determination of Information Requirements for a Supply Chain
Session 5 Reengineering Supply Chain Logistics, Importance of Time, Performance Measurement, Incentives.
Session 6 International Supply Chain Management.
Session 7 IOIS and Information Technology Applications for Supply Chain Management.
Session 8 Supply Chain Management and Product Design, Demand Forecasting, Planning and Scheduling, Inventory Management, Purchasing
Session 9 Managing Product Variety
Session 10 Managing the Flow of Materials across the Supply Chain.
Session 11 Network Configuration
Session 12 Customer Value
Session 13 Financial Evaluation of Supply Chain Decisions
Session 14 Future Challenges in Supply Chain Management.

Simulation in Management
MIS 644
Description

This course is intended to give students the opportunity to be business modelers. Students will become familiar with both the methodology and application of computer simulation modeling within the context of managerial decision making under uncertainty and business process design and analysis. Specifically, by the end of this course, the student should be able to

- **Identify business situations in which computer simulation is appropriate**
- **Understand the role that computer simulation plays in the broader context of analyzing complex business systems**
- **Understand the statistical underpinnings of computer simulation modeling**
- **Develop conceptual discrete event models of complex business systems**
- **Develop spreadsheet based simulation models for decision making under risk/uncertainty**

- **Develop dynamic computer simulation models using a discrete event simulation package**
- **Collect and analyze data to estimate model input parameters**
- **Verify and validate simulation models**
- **Design experiments to compare system alternatives**
- **Interpret and analyze the output of computer simulation models**
- **Design and carry out a simulation study of a realistic business problem**

Topical outline

Session 1 Introduction – Business Modeling
Session 2 Overview of Discrete Event Simulation
Session 3 Statistics for Simulation – A Review
Session 4 ProModel – A Discrete Event Simulation Development Tool
Session 5 Modeling of Service Systems
Session 6 Modeling of Manufacturing/Material Handling Systems
Session 7 Data Input Analysis
Session 8 Spreadsheet Based Simulation Modeling
Session 9 Analyzing Simulation Output
Session 10 Verification and Validation
Session 11 Designing Simulation Experiments
Session 12 Modeling of Information Systems
Session 13 Simulation Optimization
Session 14 Project Presentations & Course Summary

Data Warehousing and Data Mining
MIS 646
New Course

Description

This course will provide students with an introduction to data warehousing, online analytical processing and data mining. Students will gain the skills necessary to evaluate the potential for these tools to improve managerial decision making from the perspective of user, manager and developer. Specifically, the student should be able to:

- **Understand the role that data warehouses, OLAP, and data mining tools can play in business**
- **Participate meaningfully in the process of evaluation, selection, implementation and management of these tools**
- **Understand the differences between relational database and multidimensional database modeling**
- **Design a domain specific data warehouse**
- **Appreciate the practical challenges of data cleaning and transforming required for data warehousing**
- **Differentiate between OLAP technologies**

- **Understand common data mining techniques and tools with respect to their potential for improving managerial decision making**

Topical outline

Session 1 Introduction – Why Data Warehousing?
Session 2 Review of Relational Database Technology
Session 3 Data Warehouse Architecture
Session 4 Data Modeling - Star Schemas and Snowflake Schemas
Session 5 Domain Specific Data Modeling
Session 6 Data Extraction, Transformation and Loading
Session 7 Data Warehouse Development Tools
Session 8 Performance Monitoring and Management
Session 9 OLAP, ROLAP, MOLAP and Query Tools
Session 10 Intranet Data Warehouse and Related Issues
Session 11 Overview of Data Mining, and Business Applications of Data Mining
Session 12 Accessing and Preparing Data, Data Mining Techniques
Session 13 Data Mining Tools, Data Visualization, and Integration
Session 14 Project Presentations & Course Summary

IT Management Strategy
MIS 650
New Course

Traditionally, the MIS area within a firm has focused on organizational and behavioral issues in planning and implementation, and methodological issues in the development of *information systems* that meet business needs. However, both the market forces and computer and communication technology innovations started to impact the MIS function within a firm. The market forces are impacting the application needs and systems (e.g. work-flow systems, executive information systems, decision support systems, etc.), and the computer and communication technology innovations have allowed many new information processing technologies (e.g. distributed data bases, knowledge bases, multi-media, internet, imaging, client-server environments, etc.) to enter into the market place to support the application needs.

Objective

The rapidity with which both the business needs and information technologies are changing has influenced many MIS managers within a firm rethink their mission and strategy, as well as their core competencies. Many have started to move away from internal (or in-house) systems development to the management of information technologies (planning, analysis and acquisition, and implementation of appropriate systems) to successfully meet the changing business needs. To address these changing needs, this capstone course is organized as follows:

Segment 1 Business Process Redesign and Requirement Engineering

In this segment, the role of business process reengineering and redesign will be studied both from an organizational view point (how to manage the effort and what are some of the factors that can contribute to its success and failure) and a methodological view point (how to generate ideas for process redesign - using both a clean sheet as well as the current system). Our work with a few firms in the process reengineering area and the methodologies we are testing (as a research project) will be discussed during this segment.

Segment 2 Technology Evaluation and Software Engineering

Given that many organizations are outsourcing some of their IS function, it is critical that managers of today fully understand the impact of such outsourcing on the corporate knowledge base, critically evaluate the role of various information technologies in their application environment (since they can't rely on an outside vendor to be fully cognizant of these issues), and integrate these application technologies effectively into their operations. In addition, since software design is becoming very similar to product design, many of the object oriented approaches can be used by systems professionals to assemble software as opposed to coding them each time. Some of these issues will be discussed in this segment.

Segment 3 IS Planning and IT for competitive advantage

Traditional role of IS managers in the planning process has been to prioritize systems based on their costs and benefits. Recent trend has been to make the evaluation more comprehensive so that several qualitative factors can also be considered in the evaluation process. However, with the changes occurring in the business today, IS professionals and user managers have to look towards IT for providing them a competitive advantage. In this segment, some of the resource based theories are used to understand the role of strategic resources a firm can use to gain competitive advantage, and evaluate how IT can be used to sustain such an advantage over a longer period of time. Our work in the use of expert/knowledge based systems technology will be used to illustrate this approach. In addition, the role of electronic commerce, imaging, EDI, etc. will be looked at from an opportunity identification standpoint.

Segment 4 Change Management and Learning Organizations

This module looks at how organizations can use the concepts of innovation management to manage change. Many of the innovation methods currently used in the marketing literature are intended to make a customer purchase a new product or switch to a new brand, and the same methods can also be used to make an employee switch from one technology to another. However, there are some differences in the way we develop diffusion strategies to make customers adopt and employees adopt. Some of these will be discussed in this segment. In addition, the impact of creating a learning environment in an organization to create change as opposed to mange change will be discussed. Our work in the diffusion strategy area and our evaluation of a learning environment created in an IS organization will be used to illustrate some of these issues.

Course Requirement:

As part of the course each student will complete an individual comprehensive written project or case which integrates the strategic issues discussed in the course with the IT issues covered throughout the MSITM program. This project will help the student to better understand the role of IT and IT management in strategic planning within an organization.

Senate Budget Review Commitee Report

Master Of Science In Information Technology Management Program

Winter, 2001

MEMORANDUM

TO: Louis Esposito
             Vice President for Academic Affairs

FROM: Michael B. Smith, Chair
             Senate Budget Review Committee

RE: Committee response to proposal a Master of Science in Information Technology Management (MSITM)

DATE: March 14, 2001

This memorandum summarizes the Senate Budget Review Committee's review of the items listed above, reflecting the consensus reached during our meeting on March 8, 2001. The original draft of the report on the Doctoral Programs in Physical Therapy was written by Pat Nicosia, and the original draft of the report on the MSITM was written by Gadis (Buck) Dillon. After slight revisions were suggested by various committee members, the committee chair organized the documents into this final memorandum. Committee members who contributed to the discussion, either in person or by email, were: Buck Dillon, Marc Lipman, Austin Murphy, Pat Nicosia, Mohinder Parkash, Michael Smith, and Gloria Sosa.

MASTER OF SCIENCE IN INFORMATION TECHNOLOGY MANAGEMENT

The Senate Budget Review Committee has reviewed the proposal for the Master of Science in Information Technology Management (MSITM) degree, proposed by the Department of Decision and Information Sciences in the School of Business Administration. We believe that

there is significant demand for the MSITM degree, that the department has the faculty capabilities to offer the degree program, and that the proposal should be financially sound. Accordingly, Senate Budget Review Committee supports this proposal.

The proposal includes supportive comments from a number of prospective employers of the MSITM program. Demand for graduates of Information Technology programs is quite high. Some MSITM students might otherwise have enrolled in the MBA at OU, resulting in no net increase in enrollments. However, the MBA is a general business graduate program; the MSITM is a very specialized graduate degree directed toward a very focused career path. The MSITM program projection of 25 students per year, averaging 18 credits, seems quite reasonable. Much higher demand would not be unexpected.

Per the proposal, no additional faculty positions are requested to implement the MSITM program. New courses in the MSITM program would be taught by existing faculty, shifting existing teaching responsibilities and consolidating some courses. This seems viable. The budget projections included in the proposal are based on annual enrollments of 25 new students. The text of the proposal does indicate that higher annual enrollments (35-40 new students per year) would likely require additional sections and a new faculty line. The proposal does indicate no new faculty needed unless enrollment exceeds expectations. The Senate Budget Review Committee does consider it possible that just achieving the budgeted steady state enrollment of 50 students in the program across all years (25 new students per year; average two years to complete) might require the addition of another faculty line. Even so, it does appear that program revenues would easily support a new faculty line.

Other costs associated with the MSITM program, including marketing costs, administration costs, and graduate assistant stipends, seem appropriate and adequately supported by program tuition. Library resources also seem adequate.

The Senate Budget Review Committee had noted some minor flaws in the budget originally attached to the proposal as submitted. After discussions with the department chair, the original budget was revised and will be distributed at the Senate meeting. SBRC considers the revised budget appropriate. That revised budget will replace the original budget as the proposal goes forward. Per the revised budget, the proposed MSITM program appears quite sound financially and should provide a net positive contribution to institutional resources.

Senate Planning Review Committe Report

Master Of Science In Information Technology Management Program

To: University Senate

From: Senate Planning and Review Committee

Frances Jackson, Chair

Re: Masters Degree in Information Technology

SPRC received the above named proposal which is being submitted by the School of Business Administration. This program will be offered by the Management Information Systems (MIS) department. For those not familiar with IT, the proposal is not entirely clear on just what IT is. However, one of the committee members explained the purpose of IT and also compared this proposal to a recent proposal submitted in Information Systems Engineering by the School of Engineering and Computer Science.

Students must complete 33 credit hours of advanced IT management and 18 hours in the IS core, for a total of 51 credits. At least two other universities, U of M Dearborn and Central Michigan University offer IT programs at the graduate level. It is projected that this program will admit 25 new students per year. At this time, no new faculty lines are needed. The proposal requests the addition of 2 new laptops. No additional resources are needed for the program at this time. However, there is a need for additional library holdings than range in cost from $7500 to $9872 annually over the first 5 years of the program. How this cost will be met is unclear. Given the recent report presented to the Senate on the state of the library, this is a crucial question that impacts the approval of this program.

One minor concern emerged from the discussion of this proposal. Given what is happening to many web-based companies, some committee members had questions about the viability of offering an IT degree at this time. Other committee members felt that the IT proposal encompassed more than web-based technology, and thus this was not a major issue. Further discussions with TJ Wharton confirmed this latter view. While IT does encompass the development of web-based software, IT is concerned with a broader array of software programs than those used by web-based businesses.

SPRC supports the implementation of this new program. We believe the need has been adequately documented in the proposal. As was mentioned with the ISE proposal submitted by SECS, it would appear there is sufficient overlap that some collaborative activities might naturally occur between the two programs. In the report on the SECS proposal we suggest one such collaborative project could be solving the problems of the Banner System. A potentially grateful university awaits the response of these Schools to this challenge.