


ACADEMICS

OU launches Department of Bioengineering

Leaders from the College of Arts and Sciences and School of Engineering and Computer Science worked together to form the first co-governed academic department in OU's history.



From left, associate professor Gerard Madlambayan, and bioengineering students Camryn Johns, Paige Nightingale and Megan Sochanski.

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With a focus on promoting interdisciplinary collaboration, Oakland University has elevated its bioengineering program to a department. The move is intended to strengthen the university's academic profile and help students succeed in a rapidly evolving job market.

The department is the first in the university's history to be under the shared governance of core academic units, the College of Arts and Sciences and the School of Engineering and Computer Science. Its origins trace back to when the

engineering biology program was founded in 2007.

The name was eventually changed to bioengineering and the curriculum was retooled to maximize faculty expertise across academic disciplines. The transition to a department was finalized in 2019, the result of extensive collaboration between faculty and administrative leaders from both CAS and SECS.



Louay Chamra, (left) dean of the School of Engineering and Computer Science and Kevin Corcoran, dean of the College of Arts and Sciences, helped make the Department of Bioengineering come to fruition.

“The Department of Bioengineering would not have come to fruition without the dedication and

commitment of numerous individuals,” said Shailesh Lal, professor of biological sciences and chair of the Department of Bioengineering. “We are especially grateful for the efforts of CAS Dean Kevin Corcoran and SECS Dean Louay Chamra who helped navigate a comprehensive approval process and establish a sound foundation for the department for years to come.”

Department leaders are preparing to seek accreditation from the Accreditation Board for Engineering and Technology (ABET), an important step in the long-term success of the department. To be ABET-accredited, programs must meet objectives related to students, student outcomes, program educational objectives, facilities, institutional support, curriculum, faculty and continuous improvement.

According to Lal, housing the program within a department will help ensure it has the support and resources required to meet the ongoing demands of accreditation, which comes up for renewal every three years. Moreover, department status will also help the university continue to recruit and retain high-quality faculty and students, and also establish collaborations with industry for student design projects, internships and employment opportunities.

Currently, Oakland offers a Bachelor of Science in Bioengineering, a program which has more than 80 students who are declared majors. An additional number of students are working toward fulfilling the prerequisites needed to declare the major. Once the program is accredited, expected in winter 2021, these students and future students will be covered under the accreditation. They’ll be prepared to enter advanced degree programs and pursue a wide range of careers in engineering, technology, health care and more.

Student Org Spotlight: EMBS at OU

“There’s no shortage of jobs that combine the principles of biology and engineering,” said Gerard Madlambayan, associate professor of biological sciences and a co-founding faculty member affiliated with the Department of Bioengineering. “The field is incredibly diverse, including everything from gene editing, to medical imaging, pharmaceuticals, tissue engineering and prosthetics. The possibilities are endless and the benefits to society can be life-changing.”

Senior bioengineering major Eric Seidel has spent more than two years at Oakland University’s Eye Research Institute (ERI) working on research that applies bioengineering concepts to the study of potential amyloid fibrillar protein aggregates found in cataractous lenses – which could benefit the study of other [protein aggregation diseases](#) such as Alzheimer’s and Parkinson’s disease.

“I learned a great deal about what it means to be a researcher and work on a project,” said Seidel, who worked closely with ERI Director Frank Giblin, the project’s principal investigator. “There were many opportunities to problem solve and troubleshoot, which is the heart of the research process. It’s a lot of work, but when you find solutions, it’s very gratifying.”

Jia Li, professor of engineering and co-founding faculty member affiliated with the Department of Bioengineering, calls bioengineering an “interdisciplinary and collaborative research field that promotes mutual learning to overcome human challenges.”

She added, “Microscope nuclear imaging, computer-aided diagnosis, remote sensing – just to name a few – have become indispensable engineering tools in the study of biology and environment monitoring.”

More broadly, the focus on interdisciplinary collaboration is part of an overarching effort to equip students with the knowledge and skills to make transformative impacts in their communities and throughout the world.

“This is a unique collaborative initiative between the School of Engineering and Computer Science and Department of Biological Sciences,” said Louay Chamra, dean of the School of Engineering and Computer Science. “I strongly believe that graduates of this program will develop solutions to health-related problems, and techniques that improve quality of life.”

Kevin Corcoran, dean of the College of Arts and Sciences, echoed those sentiments.

Along with learning in the classroom and in the lab, students can also join the Oakland University chapter of the [Engineering in Medicine and Biology Society](#). EMBS provides a forum for all students to learn about the field of biomedical engineering, including careers, internships, lab positions and academic conferences.



"I got involved in EMBS my freshman year and then became the Vice President in spring 2019," said bioengineering student Megan Fry. "It was a great way for me to meet people in my major, as well as reach out to students who are interested in the field."

“OU is unique in this full collaboration between Biology and Engineering,” said Corcoran. “We believe this deep connection will result in graduates whose knowledge in each of these areas will serve them and society very well.”

For more information on OU's Department of Bioengineering, visit oakland.edu/bioengineering or contact Shailesh Lal at lal@oakland.edu.