

College of Engineering and Information Technology

Academic/Strategic Plan

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Executive Summary

Vision

The College of Engineering and Information Technology (COE&IT) strives to make an impact on the national scene in the engineering and information technology arena by developing an education/research enterprise around clusters representing thrusts of leading technologies: Biotechnology, Information Technology and Nanotechnology, while simultaneously building a well-balanced core instructional portfolio. In order to attract and retain the most talented and diverse student body and faculty, we strive to build a college that excels in the following engineering and IT disciplines (undergraduate and graduate): Chemical and Biochemical Engineering (CBE), Mechanical Engineering (ME), Civil and Environmental Engineering (CEE), Computer Science and Electrical Engineering (CSEE: 2 programs) and Information Systems (IS). We aspire to be recognized by industry and government as a premier source of outstanding graduates, who in turn will help their enterprise attain and sustain global competitiveness. Research results will generate innovative technologies leading to new products and improved business processes, thus enhancing economic development. By implementing our academic plan, we aspire to attain top 50 national ranking (US News & World Report).

Mission

To attain our vision, we have to provide quality education to talented students in the core fields of engineering, computer science, and information systems, in order to prepare them for future careers in these professions, taking advantage of the unique features of the UMBC education experience (e.g., special mentoring, involvement of undergraduates in research). The COE&IT has a rather unique opportunity to carve a special education/research niche due to the considerable synergy generated by the fields of engineering and IT coming together under one roof.

- Provide programs in the CBE, ME, CEE, ECE, CS, IS, disciplines and build upon an excellent reputation of faculty. Additional programs, intertwined with research, will be necessary to enhance the education/ research enterprise (e.g., Bioengineering and Environmental Engineering). This approach will help recruit and retain the most talented and diverse student population and outstanding faculty.

- Provide industry with their needed skilled workforce , namely the graduating students in the above disciplines of engineering, computer science and information systems. This will help make their corporations globally competitive, thus contributing to the economic well being of the State of Maryland and the nation.

- Conduct cutting edge research in engineering, computer science, and information systems, disciplinary and interdisciplinary, thus enhancing innovation, generating new technologies, facilitating technology transfer and commercialization. This process leads to job creation and economic development.

Objectives for undergraduate programs:

- Undergraduate student body of 2,600 and a graduation rate of 520 BS/year. High caliber Freshman class with average SAT score of 1,250 consisting of at least 25% women and 25% minorities. Conduct outreach to K-12 to promote STEM (Science, Technology, Engineering and Mathematics) Education and articulate with Community Colleges (for the benefit of transfer students).

- Continuous quality improvement of the curriculum to achieve excellence and maximize undergraduate student recruiting, retention and graduation rate. A major thrust to attain these goals is to maintain ABET accreditation of all Engineering and Computer Science programs and attain ABET accreditation of the IS program in the near future.

- Promote research and teaching, with technical and non-technical (general education) components, including project-based learning, with emphasis on design and experimentation.

Objectives for graduate programs:

- Graduate student body of 800 (600 MS and 200 PhD) and a graduation rate of 200 MS/year and 35 PhD/year (2 MS and 0.4 PhD degrees awarded/faculty/year).

- Increase graduate student recruiting (especially from a diverse domestic population) and improve retention and graduation rate.

- Increase research funding and promote disciplinary and interdisciplinary research in established and emerging fields: Biotechnology-Information Technology-Nanotechnology.