

BACKGROUND AND REQUEST

UNIVERSITY OF CINCINNATI Master of Engineering (MEng)

EXECUTIVE SUMMARY/RECOMMENDATION

This program clearly meets Regents' standards for graduate degree programs. The Regents' Advisory Committee on Graduate Study voted unanimous approval for the new master's level program. There were no serious concerns raised in the review.

Request: University of Cincinnati seeks approval for a Master of Engineering (MEng) degree.

Program Purpose/Mission: In today's competitive technology environment, industries need to have highly skilled practicing engineers who are flexible in their professional capabilities. The proposed Master of Engineering (MEng) program is a practice oriented, focused degree and will cater to this need. The (MEng) program will provide more accessible educational opportunities for the regional technical workforce, and it will provide a means to maintain and improve capabilities of the STEM workforce. It will focus on the practice of engineering and serve working professionals. Rather than culminate in a research experience and a thesis, the Master of Engineering curriculum will provide skills and expertise that will enhance the individual's ability to contribute to the technical workforce. The MEng program distinguishes itself from the established Master of Science degree. By providing a Master of Engineering degree in addition to the MS degree programs (in 16 various academic disciplines), the College provides greater service to the state and maintains clear distinctions between a research-based program of study and a practice-based program of study. The MEng program is a course-based degree. As such, existing courses in the graduate programs within the College of Engineering will be utilized. This will maximize the efficiency of the existing programs by not requiring new courses or faculty. Graduates will contribute significantly to the technical competitiveness of business and industry. The creation of this graduate program will fill a critical need for the State of Ohio where no such programs currently exist.

Enrollments: The MEng program will only contribute a small, incremental increase in the number of students enrolled in the College of Engineering's graduate programs. The projected enrollment at steady-state is 50 full-time and 100 part-time students.

Curriculum: The proposed program will not specify a major area of study on the diploma. However, it will consist of nine specialized engineering tracks (Aerospace,

Biomedical, Civil, Chemical, Computer, Electrical, Environmental, Materials Science, and Mechanical) each with their own required set of courses (typically 5 courses) and electives, and the program will require a minimum of 45 credits of graduate level course work. The College of Engineering proposes to institute a non-thesis program, with coursework only, and a capstone experience which generally will require each student to produce a project paper and give an oral presentation. The MEng has a common core curriculum that all students are required to take regardless of their discipline specific goals, and each track has its own required curriculum and electives. The new degree is practitioner focused, so the common core provides coursework and skills that benefit practicing engineers regardless of discipline or industry. The basic structure of the program is 15 credit hours for Master of Engineering Core Courses, 12-15 credit hours for Track (discipline) required Courses, 12-15 credit hours for Elective courses, and 3-6 credit hours for the Capstone Project. The capstone projects provide a mechanism to demonstrate a synthesis of knowledge and application of concepts to a specific problem.

Faculty, Facilities and Resources: The College will utilize the existing classrooms and laboratories that are currently available. All tenured and tenure-track College of Engineering faculty involved in graduate program teaching will contribute to the proposed program. The number of new students and the number at steady state anticipated in the proposed MEng Program will be offset by a plan to reduce the College's existing number of graduate students. Therefore, no new computer or library resources will be required. No new faculty and staff will be required. And, no new facilities will be required.

Evidence of Need: The proposed MEng degree will focus on the practice of engineering and is meant to serve working professionals. Surveys conducted by both Northern Arizona University and Manufacturing and Engineering Training (JACMET) indicate that there is a need and market demand for practice-oriented graduate education. Rather than culminate in a research experience and a thesis, the Master of Engineering curriculum will provide skills and expertise that will enhance the individual's ability to contribute to the technical workforce. Major change in the engineering education system is necessary if it is to meet the needs of the nation and the world in the coming century. Recent national reports on engineering education stress the need for flexible graduate programs focusing on advanced practice and the world of work of the future. By providing a Master of Engineering degree in addition to the MS degree program, the College provides greater service to the state and maintains clear distinctions between a research-based program of study and a practice-based program of study.