

APPENDIX K

Request for Authorization to Establish a Bachelor of Science Degree in Engineering at East Carolina University

Introduction

East Carolina University notified the UNC Office of the President of its intent to plan a Bachelor of Science in Engineering (14.0101) on April 23, 2000. In the meantime, a major study of engineering needs in North Carolina was completed and sent to the General Assembly in March 2003. ECU seeks authorization to establish the BSE degree program effective August 2004.

Program Description

The proposed Bachelor of Science in Engineering is a general engineering degree that will support economic development in eastern North Carolina and develop engineering problem solvers who will work in emerging disciplines. The Engineering program will be housed in the College of Technology and Computer Science at ECU. The proposed program will employ the Integrated Collaborative Engineering Educational Environment approach which is an outgrowth of an NSF project that seeks to change the culture of engineering education in curriculum and methodology. Thus, the curriculum is designed to give a broad and integrated background in the core sciences, mechanics and structures, information technology, engineering design, and decision making that support a systems approach to engineering while maintaining traditional academic rigor. There is a definite focus on solving real-world problems in a client driven environment. Additionally, one curriculum goal is for students to become lifelong learners who acquire new knowledge quickly and adjust to the constantly changing engineering environment. Graduates will have a strong theoretical background, specialized knowledge in specific areas, and broad skills in problem solving to provide a sound and flexible basis for a career. Further, graduates will be able to move into practice or advanced study in almost any branch of the engineering profession or further study in management.

Review

The BOG Report on Engineering (March 2003) to the General Assembly included a recommendation that ECU initiate planning activities for their proposed new program in general engineering and that the proposal be further reviewed by the Office of the President. This review has been completed by the chair of the team of engineering deans that advised the Office of the President for the original study. The reviewer raised issues about the core courses, queried how the student numbers had been estimated, questioned the relation of engineering and technology programs, and thought that more details might be included in the innovative part of the program. ECU has responded and described how the core courses meet the requirements of ABET accreditation, explained the policy for starting a new program at ECU and the expectation that engineering will eventually be evolved into a separate departmental unit, and described how the program proposal was guided by the principles established by NSF's Engineering Education Coalitions for improving engineering education. ECU was responsive to the reviewer's comments. The reviewer commented that if the issues he raised were satisfied, he believes the proposal to be a viable basis for establishing a general engineering program.

Program Need

The Bachelors of Science in Engineering will be the first engineering program at ECU; and it will meet the engineering needs of eastern North Carolina. An environmental scan by ECU of regional businesses and government agencies revealed that there is a definite demand for qualified employees in general engineering who will problem solve and respond to emerging regional needs. Further, the proposed engineering program addresses numerous goals in ECU's Strategic Plan. By the program's fifth year, the projected enrollment is 105 freshmen per year.

APPENDIX K

Resources

The faculty is adequate to launch the program; new faculty lines will be added as needed from enrollment increase funds. The proposed engineering program will be located in the new 270,000 square foot Science and Technology Building with laboratories that directly support the program. The existence of a general engineering program will help strengthen other programs in the College of Technology and Computer Science.

Recommendation

It is recommended that the Board of Governors approve the request to establish a Bachelor of Science in Engineering at East Carolina University effective August 2004.