OHIO BOARD OF REGENTS

Agenda Item 3.7 Cleveland State University, Bachelor of Computer Engineering

RESOLUTION

BE IT RESOLVED: upon the recommendation of the Chancellor and with the concurrence of the Initiatives Committee of the Ohio Board of Regents that Cleveland State University Bachelor of Computer Engineering (B.C.E.) degree is approved.

BACKGROUND

CLEVELAND STATE UNIVERSITY
Bachelor of Computer Engineering

Cleveland State University seeks approval for a Bachelor of Computer Engineering degree. The Bachelor of Computer Engineering (BCE) degree will be offered by the Department of Electrical and Computer Engineering and will build on an existing option within the Bachelor of Electrical Engineering (BEE) program. The existing option has been offered for the past 15 years and has reached an enrollment of active undergraduates students similar to that of students in the BEE degree program.

The demand for computer engineers has increased tremendously as evidenced by the increased interest in the computer engineering option within the BEE. Computer engineers design, produce, operate and maintain computers and digital systems. In addition, computer engineers are used in an ever-growing number of positions involved with applications of computers and digital technology.

Numerous sources cite that the need for computer engineers at both the local and national level is growing rapidly, with over 40% of US software, hardware and telecommunications companies projecting growth of 25% or more. A recent edition of Engineers Quarterly predicts that by 2005, computer engineers will become the second largest of the engineering disciplines based on an annual growth rate of over 6% or 168,000 new computer engineering positions created in the next decade. The Bureau of Labor Statistics also noted the large increase in the computer engineering field in its report on fastest growing occupations. The demand for computer engineers also points to the need for higher education faculty as well as those trained to work in industry.

Graduates of the proposed Baccalaureate in Computer Engineering will be prepared for graduate study in computer engineering as well as for the pursuit of engineering careers in industry at a professional level

Programs leading to undergraduate degrees in engineering are accredited by the Engineering Commission of the Accreditation Board of Engineering and Technology (ABET). The proposed degree program is designed to meet Basic Level Accreditation Criteria and the Program Criteria for Computer Engineering Programs. There are currently four accredited computer engineering programs in Ohio at Case Western Reserve University, University of Cincinnati, University of Toledo, and Wright State University. The Air Force Institute of Technology at Wright Patterson Air Force Base also offers an accredited program.

The proposed curriculum for the BCE begins with a foundation in mathematical and physical sciences, and then combines courses in computer engineering, computer science and electrical engineering. The degree program will be housed in the Department of Electrical and Computer Engineering. Some courses in computer science will continue to be offered by the Computer and

Information Science Faculty. The curriculum provides an in-depth and balanced education in the hardware and software aspects of modern computer systems, including networking, embedding, interfacing and design. Sufficient flexibility exists in the program to support various areas of specialization through technical electives. Lab courses supplement the theoretical segments of the coursework. A senior design course is also required.

Cleveland State University will seek ABET accreditation in spring 2004, at the time of ABET's review of the University's other engineering programs. ABET accreditation requires that students have graduated from the program prior to its onsite visit. The time schedule for program approval and implementation reflects this requirement.

Seven new courses have been added to the existing curriculum for the Bachelors in Computer Engineering and increase in demand will require an increase in the number of sections for some courses. In addition to current faculty members and new faculty to fill anticipated vacancies, the BCE will require six additional faculty members, to be hired by spring 2002. These additional positions have the support of the Dean and Provost. Additional resources needed for lab courses are relatively minimal for the program. The University anticipates that revenues from student tuition and state subsidy will be sufficient to support the program. The number of new additional students for the program is anticipated at 55.