UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Office of the Provost and Vice Chancellor
for Academic Affairs

Swanlund Administration Building
601 East John Street
Champaign, IL 61820

March 8, 2005

Abbas Aminmansour, Chair
Senate Committee on Educational Policy
Office of the Senate
228 English Building, MC-461

Dear Professor Aminmansour:

Enclosed are copies of a proposal from the College of Engineering to change the names of the Graduate Degrees in the Department of Electrical and Computer Engineering. The proposal would change the names from M.S. in Electrical Engineering and the Ph.D in Electrical Engineering to M.S. in Electrical and Computer Engineering and the Ph.D in Electrical and Computer Engineering.

This proposal has been approved by the Graduate College; it now requires Senate review.

Sincerely,

Keith A. Marshall, Ph.D.
Associate Provost

Enclosures

c:  C. Livingstone
    A.  Poehls
    R. Blahut
    D. Daniel
    N. Rao
    R. Wheeler

**PROPOSAL TO THE SENATE COMMITTEE ON EDUCATIONAL POLICY**

## Title of the Proposal

Changing the Names of the Graduate Degrees in the Department of Electrical and Computer Engineering, College of Engineering

## Sponsor

N. Narayana Rao, 3-2302

## Brief Description

The Department of Electrical and Computer Engineering proposes to change the names of the graduate degree programs offered by the department from

*Master of Science in Electrical Engineering*
*Doctor of Philosophy in Electrical Engineering*

to

*Master of Science in Electrical and Computer Engineering*
*Doctor of Philosophy in Electrical and Computer Engineering*

## Justification

The Department of Electrical and Computer Engineering (ECE), previously Department of Electrical Engineering (EE), has offered an undergraduate program in electrical engineering for over 100 years. In 1969, the department established an undergraduate program in electrical engineering and computer science (EE & CS), as an extension of the undergraduate program in electrical engineering. In 1971, the department renamed the EE & CS program *computer engineering (CompE)*. Since then, the department has been offering two undergraduate programs, *Bachelor of Science in Electrical Engineering* and *Bachelor of Science in Computer Engineering*. To reflect this, the department changed its name from *Department of Electrical Engineering* to *Department of Electrical and Computer Engineering,* in 1984. Also, the course rubric, which used to be EE for all courses offered by the department, was changed to ECE since then.

The names of the graduate degree programs, however, remained unchanged as *Master of Science in Electrical Engineering* and *Doctor of Philosophy in Electrical Engineering*. Until just a few years ago, the ratio of students in the EE undergraduate program to the students in the CompE undergraduate program was around 4:1. The situation has however changed dramatically in recent years since the ratio of EE to CompE undergraduates is now about 1:1, which has become a nationwide phenomenon. Coupled with the broadening scope of research activities in computer-related areas including information protection and security, computer and communication networks, computer vision and robotics, computer-aided design of integrated circuits, computational science and engineering, computer architecture and compilers, dependable computing, etc., (see Appendix A involving approximately 40 of the 87 active

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members of the graduate faculty of the department) a name change to the degree has become overdue. Two other considerations are as follows:

**(a)** By changing the names of the graduate degrees to match the name of the Department, we would conform to standard practice on campus. Graduate degrees named Electrical and Computer Engineering are also offered by the corresponding departments at peer institutions such as Carnegie Mellon, Cornell, Georgia Tech, Northwestern, and Purdue. See Appendix B. **(b)** The degree name change can help attract more graduate students with the appropriate background. This will benefit research programs of many ECE faculty members.

## Budgetary and Staff Implications

Changing the names of the graduate degree programs would only require the ECE department to update its brochures, manuals, and Web site, since there would be no changes to the general overall requirements for the M.S. and Ph.D. degree programs, and there would be no change in the size of the graduate program. We expect the numbers of students who complete graduate degrees in the department each year would remain the same (approximately 90 M.S. degrees and 50 Ph.D. degrees annually). We anticipate no effects on enrollments in courses or in graduate programs offered by other departments.

## Clearances

N. Narayana Rao

N. Narayana Rao, *Associate Head (Sponsor)*
*Department of Electrical and Computer Engineering*

9-15-04
Date

Richard E Blahut

Richard E. Blahut, *Head*
*Department of Electrical and Computer Engineering*

Sept 15, 2004
Date

David E. Daniel, *Dean*
*College of Engineering*

9/22/04
Date

Richard P. Wheeler, *Dean*
*Graduate College*

Date

## Effective Date

August 2005

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**Addendum to the Proposal for Changing the Names of the Graduate Degrees in the Department of Electrical and Computer Engineering, College of Engineering**

The degrees to be awarded after the effective date will be *M.S. and Ph.D. in Electrical and Computer Engineering.* However, students already in the program prior to the effective date will have the option of receiving the degrees in *Electrical Engineering,* for a period following the effective date. This period is two years in the case of M.S. degrees, and three years in the case of Ph.D. degrees.

## Appendix A:
## Areas of Research and Graduate Study in Computer Engineering in the Department of Electrical and Computer Engineering

**Coding, Cryptography, and Information Protection**
Richard E. Blahut, Ralf Koetter, Pierre Moulin, David M. Nicol, William H. Sanders, Dilip V. Sarwate

**Communications and Wireless Networks**
Richard E. Blahut, Christoforos Hadjicostis, Bruce Hajek, Ralf Koetter, Panganamala R. Kumar, Steve Lumetta, Pierre Moulin, David M. Nicol, Dilip V. Sarwate, Andrew Singer, R. Srikant, Nitin H. Vaidya, Venugopal V. Veeravalli, Pramod Viswanath, Benjamin W. Wah

**Compilers and Operating Systems**
Matthew Frank, Wen-Mei Hwu, Constantine Polychronopoulos

**Computational Science and Engineering**
Donna Brown, Ravi Iyer, Michael C. Loui, David M. Nicol, William H. Sanders, Benjamin W. Wah, Martin D. F. Wong

**Computer Networks, Mobile Computing, and Distributed Systems**
Ravi Iyer, Steve Lumetta, Panganamala R. Kumar, David M. Nicol, William H. Sanders, Nitin H. Vaidya, Benjamin W. Wah

**Computer Systems: Architecture, Parallel Processing, Dependability, and Security**
Nicholas P. Carter, Matthew Frank, Christoforos Hadjicostis, Wen-Mei Hwu, Ravi Iyer, Michael C. Loui, Steve Lumetta, David M. Nicol, Janak H. Patel, Sanjay Patel, Constantine Polychronopoulos, William H. Sanders, Naresh R. Shanbhag, Nitin H. Vaidya, Benjamin W. Wah

**Computer Vision and Robotics**
Narendra Ahuja, Thomas S. Huang, Seth Hutchinson, Yoshihisa Shinagawa

**Integrated Circuits, VLSI Design, Testing, and Computer-Aided Design**
Janak H. Patel, Elyse Rosenbaum, Naresh Shanbhag, Martin D. F. Wong

**Signal, Image, and Speech Processing**
Narendra Ahuja, Richard E. Blahut, Yoram Bresler, Minh N. Do, Mark Hasegawa-Johnson, Thomas S. Huang, Douglas L. Jones, Farzad Kamalabadi, Stephen E. Levinson, Zhi-Pei Liang, Pierre Moulin, David C. Munson, Jr., Naresh R. Shanbhag, Yoshihisa Shinagawa, Andrew Singer

## Appendix B:
## Names of Graduate Degrees in Related Departments at Peer Institutions[1]

| Institution | Name of the Department | Names of the Graduate Degrees |
|---|---|---|
| Carnegie Mellon University | Electrical and Computer Engineering | M.S., Ph.D. in Electrical and Computer Engineering |
| Cornell University | Electrical and Computer Engineering | Master of Engineering<br>M.S., Ph.D. in Electrical and Computer Engineering |
| Georgia Institute of Technology | Electrical and Computer Engineering | M.S., Ph.D. in Electrical and Computer Engineering |
| Massachusetts Institute of Technology | Electrical Engineering and Computer Science | Master of Engineering<br>Master of Science<br>Electrical Engineer<br>Engineer in Computer Science<br>Doctor of Philosophy, Doctor of Science |
| Northwestern University | Electrical and Computer Engineering | M.S., Ph.D. in Electrical and Computer Engineering |
| Purdue University | Electrical and Computer Engineering | M.S., Ph.D. in Electrical and Computer Engineering |
| Stanford University | Electrical Engineering | M.S. in Electrical Engineering<br>Engineer<br>Ph.D. in Electrical Engineering |
| University of California, Berkeley | Electrical Engineering and Computer Science | M.S., Ph.D. in Engineering,<br>in Engineering Science,<br>in Computer Science<br>M.Eng., D.Eng. in Electrical Engineering |
| *University of Illinois at Urbana-Champaign* | *Electrical and Computer Engineering* | *M.S., Ph.D. in Electrical Engineering* |
| University of Michigan, Ann Arbor | Electrical Engineering and Computer Science | M.S., M.S.E., Ph.D.<br>in Computer Science and Engineering,<br>in Electrical Engineering,<br>in Electrical Engineering: Systems |
| University of Texas at Austin | Electrical and Computer Engineering | Master of Science in Engineering<br>Doctor of Philosophy |
| University of Wisconsin – Madison | Electrical and Computer Engineering | M.S., Ph.D. in Electrical Engineering |

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[1] Information taken from departments' Web sites.