TO: The Faculty of the College of Engineering

FROM: School of Electrical and Computer Engineering of the College of Engineering

RE: ECE 64700 Changes in Course Title, Description, and Requisites

The faculty of the School of Electrical and Computer Engineering has approved the following changes in ECE 64700. This action is now submitted to the Engineering Faculty with a recommendation for approval.

From: **ECE64700 -- Performance Modeling of Computer Communications Networks**

Sem. 2. Class 3, cr. 3. (Offered in alternative years.)
Prerequisite: ECE 60000. Authorized equivalent courses or consent of instructor may be used in satisfying course pre- and co-requisites.

The mathematical background needed for the performance and stability analysis of computer communication networks is developed. Point processes, Markov processes, and queuing processes are used in the modeling and analysis of queues, interconnected queues such as ARPANET, and random multiple access networks such as Xerox's ETHERNET. Distributed control of random access networks and centralized control of queuing networks is considered. The techniques developed are useful in the design of computer systems as well as computer networks.

To: **ECE 64700 – Advanced Topics in Communication Networks**
Sem. 2. Class 3, cr. 3.
Prerequisite: ECE 54700 and ECE 60000.

Advanced topics related to communication networks, in particular the mathematical background needed for the performance analysis, control and optimization of computer communcaiton networks. The instructor may tailor the content to reflect current trends and goals of networking research. Examples of relevant topics are: Point processes, Markov processes, and queuing networks; Perfomance analysis and distributed control of random access networks; Convex optimization with applications in communication networks; Cross-layer design of wireless networks and Introduction to large-deviations and its application in queues and queuing networks. The techniques developed are useful in the design of computer systems as well as computer networks.

Reason: Changes have been made to the title, description, and prerequisites to reflect the updated content of the course. To be offered in odd numbered years.

Michael R Melloch, Associate Head
School of Electrical and Computer Engineering