ECE 476 – MODELING AND SIMULATION OF CUMMUNICATION NETWORKS

Type (check one): Required: _____ Elective: X

2005-2006 Catalog Data: ECE 476: Modeling and Simulation of Communication Networks. (Formerly EE 476) Computer modeling of communication networks including voice, data and integrated networks. Analysis, modeling, and statistical validation of network traffic. Design of simulation experiments: Factorial, Fractional-Factorial, and advanced designs. Validation, analysis and interpretation of network simulations. The students are required to implement three designs of communication networks. Prerequisite: ECE 335. *One semester; three credits.*

Prerequisites: ECE 335: Systems, Signals and Noise
Co-Requisites: None

Textbook: A. M. Law and W. D. Kelton, *Simulation Modeling and Analysis*, Second Edition, McGraw-Hill, New York, New York, 1991.

Other Required Materials: None
Other References: None

Instructor: Dr. Juan Carlos Olabe-Basogain, Professor of Electrical Engineering.

Course Objectives: This course is designed to familiarize students with the methods, techniques, and tools of network design using modeling and simulation.

Prerequisites by Topics: Probability and Statistics

Topics:

1. Modeling and simulation
2. Voice and data communication networks
3. Traffic analysis, modeling, and validation
4. Experimental design
5. Validation and analysis of simulation results
6. Statistical ranking and comparison
7. Tests

Class Schedule: Three 50-minute sessions per week

Prepared by: Dr. Juan Carlos Olabe-Basogain **Date:** October 2005