

SYSTEMS MODELING AND ANALYSIS (SYSM)

SYSM 681. Research Exploration. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Enrollment is restricted to graduate students in mathematical sciences or systems modeling and analysis. Designed to help students attain knowledge of the various research opportunities in the systems modeling and analysis Ph.D. program. Students are exposed to the discipline-specific communication and research skills necessary to excel in graduate studies in these disciplines.

SYSM 682. Systems Seminar II. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: graduate standing in mathematical sciences or systems modeling and analysis. Designed to help students attain proficiency in professional communication and research in the context of mathematics, operations research and statistics. Focuses on the discipline-specific communication and research skills necessary to excel in professional careers in these disciplines.

SYSM 683. Systems Seminar III. 1 Hour.

Semester course; 1 lecture hour. 1 credit. Prerequisite: graduate standing in mathematical sciences or systems modeling and analysis. Designed to help students attain proficiency in literature review and research in the context of mathematics, operations research and statistics. Focuses on the discipline-specific literature review and research skills necessary to write an applied project, thesis or dissertation.

SYSM 697. Systems Research. 2 Hours.

Semester course; 2 research hours. 2 credits. May be repeated for a maximum of six credits. Enrollment is restricted to graduate students in systems modeling and analysis Ph.D. program. Supervised individual research and study. Research culminates with submission of a written report to the supervising faculty member. Graded as S/U/F.

SYSM 780. Stochastic Methods in Mathematical Biology. 3 Hours.

Semester course; 3 lecture hours. 3 credits. Prerequisites: STAT 513 or STAT 613; and MATH 535. Covers commonly used stochastic methods in mathematical biology, including cellular physiology and related areas. Topics covered include stochastic differential equation models, applications of first passage time (escape time) and applications of density or master equations, diffusion in cells, stochastic ion channel dynamics, and cellular communication. Students will be expected to learn how to program in appropriate software packages.

SYSM 798. Dissertation Research. 1-12 Hours.

Semester course; variable hours. 1-12 credits. May be repeated for credit. Research and work leading to the completion of the Ph.D. dissertation in systems modeling and analysis. Graded S/U/F.