Industrial Mathematics I

Department: MATH
Course Number: 6514
Hours - Lecture: 3
Hours - Lab: 0
Hours - Recitation: 0
Hours - Total Credit: 3
Typical Scheduling: Every fall semester
Description:
Applied mathematics techniques to solve real-world problems. Topics include mathematical modeling, asymptotic analysis, differential equati scientific computation. Prepares the student for Math 6515. (1st of two courses)
Prerequisites:

Math 2403 or Math 2602, Math 4640

Course Text:

No text

Topic Outline:

First in a sequence of two courses designed for beginning graduate students and advanced undergraduates who are interested in solving rea problems with modern mathematical tools. The sequence is intended to train students who may seek industrial opportunities after graduation Problems will be approached with a combination of mathematical analysis and scientific computation. The necessary background is elementa differential equations, a working knowledge of computer programming in FORTRAN, Pascal, or the C language, and basic numerical analysis level of Mathematics 4640. This course develops the mathematical and computational tools for applications to industrial problems. The cours treat:

- mathematical modeling
- differential equations
- asymptotic methods
- scientific computation, including numerical methods, parallelization, and visualization