COURSE NO./TITLE: MSCS-491 (354-491) MATHEMATICAL MODELS II
CREDITS: 2

COURSE DESCRIPTION: Continuation of MSCS-490. Prerequisite: MSCS-490.

TEXTBOOK: None

COURSE OBJECTIVES:

1. To provide simulated experiences for the student in developing mathematical models for problems in applied areas.
2. To have the student integrate mathematical theory with applications in the applied sciences.
3. To have the student develop an appreciation of mathematical problem-solving techniques.
4. To encourage the student to have a positive attitude towards independent problem solving.
5. To instill in the student the spirit of applied mathematics.

COURSE OUTLINE:

No specific content is intended. Students work on problems of their own choosing and develop techniques and determine approaches under supervision. Suggested topics may be as follows:

1. Iteration
2. Queuing theory
3. Operational calculus
4. Probability application: industrial management, sciences
5. Statistical application: experimental design, quality, control
6. Linear programming application: marketing management, production control
7. Computer science application: simulation, Monte Carlo methods, coding
8. Statics and dynamics (vector analysis)
9. Applications of differential equations

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