MTH 395 – Math Modeling  
Spring 2015

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Office Hours: MWF 9–9:50 in HH, 11–11:50 in OM 429; T 11–11:50; by appointment, or drop in
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Textbook: A Course in Mathematical Modeling, Mooney and Swift, MAA 1999  
Other: Coursepack of class notes available in the CRC  
Access to Excel and MATLAB. Both are available on the University’s computers; Student versions of both can be purchased.

Course Prerequisite: MTH 172 with a C− or better

Course Objectives:
♦ Use the modeling process to translate problem situations to mathematical expressions.
♦ Use a variety of mathematical resources and tools to study problem situations.
♦ Use Excel and MATLAB to assist in the problem-solving process.
♦ Develop new problem solving skills and enhance critical thinking abilities.

Exams and Grading:
♦ Homework 10%  
  IMPORTANT: NO EXTRA CREDIT
♦ Exams 1/2/3 45% (15% each)
♦ Projects 30% (6% each)
♦ Group Project 15%

Homework:
♦ Homework may be done in groups (each student must hand in an assignment).
♦ In-class labs will count as homework assignments.
♦ Due dates will be announced in class.
♦ You must show your work to receive full credit (where applicable).
♦ Late homework will be penalized/not accepted.
  o Homework will be considered late if not in my office by 3:30 on the due date unless prior arrangements have been made.
  o Homework will be accepted until the assignment is returned to the class—but it will be penalized unless prior arrangements have been made.

Exams 1/2/3:
♦ Make-up exams will not be possible without prior arrangements—and the reason for missing an exam must be compelling and perhaps more importantly, documented. Make-up exams will be more difficult.
♦ Exams will resemble homework problems and problems done in class.
♦ TI–89’s or higher (or equivalent) will NOT be allowed during exams.
Projects:
- Each chapter/topic covered will have a modeling project assigned.
- A report will be submitted for each project.
- Late projects will be penalized.
- Project descriptions will be handed out.

Group Project:
- This will be a semester long endeavor done in groups of 2–3.
- In addition to a written report, each group will give a 15-20 minute presentation.
- Presentation dates are 4/27/15 (two on this day), 4/29/15 (two on this day), and 5/4/15 (our final exam slot, 8–10; the rest).
- Your group may select one of the following or propose an alternative: Optimal weighting of dice for craps; optimal strategy for spinning the wheel on the game show Price is Right; using an absorbing Markov Chain to model Monopoly or some other board game; or using an absorbing Markov Chain to model some other situation.

General Philosophy/Attendance:
- College prepares you for a professional position.
- In the working world, you are responsible for your career and you are accountable for your decisions. For example, class attendance is expected (just as you are expected to go to work), but not required.
- Exception: Failure to attend group presentations will be penalized.

Important Dates:
- MLK Day (Holiday) January 12, 2015
- Last Day to Change/Add a Class January 23, 2015
- First Exam February 11, 2015 (subject to change)
- President’s Day (Holiday) February 16, 2015
- Spring Break March 9–13, 2015
- Second Exam March 18, 2015 (subject to change)
- Advising Day March 26, 2015 (Thursday)
- Last Day to Withdraw From a Class March 27, 2015
- Easter Recess April 3–6, 2015
- Third Exam April 10, 2015 (subject to change)
- Last Day of Classes April 30, 2015

Students with Disabilities:
If you need course adaptations or accommodations because of a disability, if you have a medical and/or safety concern to share with me, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible.