

Mathematical Modeling – Fall 2013

Instructor

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Meeting Times

Class: T and Th in MCT 263 from 2⁰⁰- 3¹⁵

Office Hours: T and Th: 11⁰⁰-12³⁰, M: 10⁰⁰-12⁰⁰; and by appointment.

Purpose of Course

MAT 326 explores how mathematics is used to interpret and solve real-world problems. In particular, we will use a variety of mathematical techniques to develop, implement and analyze models that describe a wide range of real-world phenomena.

Materials

Text: *Mathematical Modeling with Microsoft Excel*, Neuwirth and Arganbright, ISBN-10: 0-534-42085-0

Technology: We will use computers almost every day. Microsoft Excel will be our primary modeling software for in-class demonstrations and work; however, you are welcome to use any software that you are comfortable with. Similarly, take-home projects and presentations should be prepared using word processing software (e.g. Microsoft Word) of your choice.

Grading

I am the instructor of record for this class. Only the instructor of record for this class can issue a final grade. The following activities will be used to determine your overall course grade (specific percentages as listed):

Daily class participation	20%
Math culture activities	10%
Class projects	50%
Final project	20%
Total	100%

The final letter grade will be determined using the following “+/-” grading system:

Grade	A	A-	B+	B	B-	C+	C	D	F
Percent	93-100	90-92	87-89	83-86	80-82	77-79	70-76	60-69	< 60

Daily class participation

Many days, there will be problems for the class to work on after we set up a basic model. Working through these problems will help you understand the model better and explore its potential for additions and improvements. Much of the class time will be spent working on these problems. At the end of many classes you will submit a copy of your model (or appropriate work as defined in class) to the [d2i](#) drop box. If you miss class, you can still receive full credit for the class work if you complete all the problems and submit a copy of your model (via d2i) by midnight the day it is due. An assignment that is turned in late is eligible to receive partial credit if not turned in excessively late.

Math culture points

You are able to earn up to 10 math culture points throughout the semester. Below is a list of approved activities and their associated math culture value. Please be aware that this list is not complete; if you have suggestions for additional activities, let me know (and they may count).

Activity	Date(s)	Information	M.C. Value
SU Math Seminar	Thursdays at 3:30 & "Truth Values" play	SU Math	1 point (+1 for write-up, max 2 write-ups)
Attend off-campus math talk	ongoing	Other math dept. websites	2 points (+1 for write-up)
Attend Math Conference	e.g. PCTM 11/7 & 8 EPADEL 11/9	PCTM EPADEL	3 points (+1 for write-up)
Present at a conference	ongoing		TBD (up to 6 points)
Volunteer at math event	e.g. CornFest 8/31, "Truth Values" 10/17		TBD based on work time
Cumberland Valley Math Modeling Challenge	9/28 & 9/29	MCM math modeling contest	8 points if completed (+2 associated activities)

Class Projects

Projects come in three flavors:

1. Our "In – class" project is like an exam, in that it is scheduled in class and you will have to work without collaboration. However, you will be allowed your book, your notes and a computer (as a result, anything else accessible on the computer is also allowed, such as models from earlier classes and internet references).
2. We will also have an oral project. Scheduled to take place earlier in the semester, this project will require you to read an article and prepare to discuss the mathematics (not necessarily complicated) that drive (or underlie) the story)
3. "Take – home" or group projects allow for collaboration with (up to three) fellow classmates; so long as all team members are listed when the final solution is turned in. Late take-home projects will be penalized at 10% per calendar day up to 50% (email them to me as soon as possible).

Expectations

- Attend class every day, and arrive on time.
- When in class, give your full attention to the assigned project.
- Participate in class; ask and answer questions.
- Let me know if you need help.
- Practice academic integrity consistent with Shippensburg University's academic honesty policy.

Special Accommodations

If you are a student who has been identified by the Office of Social Equity as requiring special arrangements for test-taking or note-taking, you will be accommodated. Please contact me privately so that we may make these arrangements.

I reserve all rights to make changes (at any time) to this course, even if contrary to the syllabus.