

Welcome to Math 475 Mathematical Modeling – Fall 2017

1:00 - 1:50 M-Th in Bouillon 103

Instructor: Dr. Jean Marie Linhart
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Webpages: (course) <http://canvas.cwu.edu>
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Office Hours: MTR 3:30-4:30 pm
W 3:25 - 3:55 (many longer)
and by appointment

This syllabus is subject to modification. Students will be notified of changes in class and on Canvas.

Text: No textbook. Come to class.

Laptop: You will want to have the use of a reliable laptop for the duration of this course, with your course files backed up daily to Google Drive, Dropbox or another reliable repository. You will likely want to have this with you in class daily. Install

- Anaconda for Python 2.7; see <http://www.anaconda.com/download>.
- L^AT_EX; see <https://www.latex-project.org/get/>. There are also online L^AT_EX services.
- Dropbox or Google Drive, and be sure you know how to make sure that your work is in the right spot on the file system so that one of these services is backup up your work daily (if not hourly). The following link is for Dropbox. I may get some free space on Dropbox if you use it.
<https://db.tt/byBhY5p4>.

Course Goals: This course is an introduction to mathematical modeling using examples from physical, chemical, biological, economic, and social systems. The use of software, critical thinking, and technical communication will be emphasized. In short, mathematical modeling is the course where we connect your mathematical studies to the *real world*.

Learner outcomes:

- I. Students will select mathematical models to best describe the process of mathematical modeling.
- II. Students will judge what to include and what to leave out of a mathematical model, and defend their choices based on results and constraints.
- III. Students will appraise the requirements of a problem to make modeling decisions.
- IV. Students will evaluate which mathematical model performs best in a modeling situation.
- V. Students will predict modeling results.
- VI. Students will assess mathematical models by obtaining numerical results.

Grades: Your final grade is based on

Writing	60%	Finished writing products. One of these is the Final Portfolio for the class, due during finals week.
Computation	25%	Computer code, possibly also hand calculations or descriptions of computational work.
Presentation(s)	15%	Presentation(s) on modeling projects or aspects of modeling
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Homework, attendance, participation	+/-/fail	Excellent work (87%+) will bring your final grade up 1/3 of a grade (B to B+). Unsatisfactory or incomplete work (65-72%) will bring your final grade down 1/3 of a grade (B to B-). Unacceptable work (55-65%) will bring your final grade down one full letter grade. Failing work (less than 55%) will result in you failing the course outright.

You will be given opportunities to get feedback on, rewrite and revise most of the writing assignments. Take advantage of this.

Since the final portfolio is due during finals week, your opportunities to rewrite, revise and get feedback are **before it is due**. Likewise, get feedback on code or computation assignments **before they are due**.

You will have opportunities to practice and polish your presentations. Take advantage of this.

Late work: Professionalism is expected. As a professional you may occasionally ask, 24 hours before an assignment is due, for an extension on a deadline. Extensions are generally for 24 hours, but may be longer with my advance permission. These requests will generally be granted if the privilege is used **rarely** and if there are at least 24 hours between the request and the due date for the assignment. You are each given one “free pass” to hand in one assignment, except for a presentation, 24 hours late no questions asked. Late work without permission and all late presentations (no shows to your scheduled presentation time) will lose 1 letter grade for each 24 hour period it is not handed in.

If you have a documented excuse of an accident or emergency, contact me by email (preferred) or phone message **as soon as possible**, but within 72 hours of the event, and bring the excuse, and I will accept your late work at an agreed upon reasonable time given the circumstances.

Getting Help: We have all needed help with something. Working with students on math is one of the best parts of my job. If you find yourself feeling uncertain, wanting a deeper understanding, wanting to get better marks, or struggling to learn and succeed, please ask questions in class, post questions on Canvas, and/or come see me in office hours. Please give me a chance to help.

In particular, computer issues and errors can drive a student crazy in this class. Start your assignments well ahead of time so that when something isn't working, you can take 30 minutes to try to solve it yourself, and then have time to ask me for help if you are not successful. If you are working on something right before it is due, you may run into small issues that take you hours at best to resolve on your own. I can often get you back on track in 10 minutes. I am always willing to troubleshoot computer problems if you send me your \LaTeX or Python code via email.

Plagiarism: This is a writing course. Plagiarism is a major issue that occasionally comes up. You cannot use others work and present it as your own. This includes copying directly or paraphrasing from any source without a citation and quote marks as appropriate. Do not look at or listen to original source material as you are trying to write things in your own words unless you are planning to cite it. If you ever feel uncertain about how to use a source or what to do, **please ask**. Plagiarism will at minimum result in reduced credit on the assignment – possibly no credit, and possibly a failing grade in the class. I do not want this to happen to you; ask me questions so I can help you to do things right. I will not get mad and you will not get into trouble if you ask me how to handle a situation **BEFORE** you hand your work in.

Plagiarism of computer code is also not allowed. Never give someone else your computer code. Never take computer code from another student. Ask me, your instructor, before you use code available on the web, and if you do, you must **ALWAYS** cite your source (provide a link and a note). If you use another person's code as a resource while writing your own, you **MUST** cite your source.

The three most valuable marketable skills you will hone in this course are the ability to communicate clearly in writing, knowing how to program a computer to solve a problem for you, and the ability to communicate clearly in a presentation. Do not undercut your future success by plagiarizing or attempting to plagiarize another's work.

Students with Disabilities:

I am happy to work with students with disabilities. To set up academic adjustments in this class, you should give me or email me a copy of your *Confirmation of Eligibility for Academic Adjustments* from the Disability Support Services Office. **You must also come see me in office hours or make an appointment to come see me as soon as possible so we can discuss how the approved adjustments will be implemented in this class.** Students without this form should contact the Disability Support Services Office, Bouillon 140 or dssreceipt@cwu.edu or (509) 963-2171. **Testing requests with testing services must be submitted at least 48 hours before an exam is given, or you will have to take the exam with the rest of the class.**

Important Dates

Sept 20 – classes begin
Sept 26 – change of schedule period ends
Nov 3 – uncontested withdrawal period deadline
Nov 10 – Veteran's Day (no class)
Nov 22-24 – Thanksgiving Holiday (no classes)
Nov 29 – Final presentations 4 pm BOU 112
Dec 6 – 12 - 2 pm final presentations
Dec 6 – 11:59 pm Final Portfolios due