Dr. Charles Rocca
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MAT 186-01: Tech. Typesetting w/ LaTeX
Online Asynchronous
Credits: 1 credit
Grading: Pass/Fail

WESTERN CONNECTICUT STATE UNIVERSITY
MACRICOSTAS SCHOOL OF ARTS & SCIENCES

Office Hours:

Office hours for the Fall 2024 Semester are on ground in Higgins 101D.

- Monday & Thursday: 11am - 12pm & 3:30pm - 4:30pm
- Wednesday & Friday: 1pm - 2pm
- or by appointment

If you need to meet virtually we can make an appointment to do so via my WebEx Virtual Office: Higgins 101-DV (https://wcsu.webex.com/meet/roccac)

Course Materials:

- Required account on Overleaf (https://www.overleaf.com/), this is a free account; please sign up for it using your WCSU email address.
- Recommended Text: *LaTeX: A Document Preparation System, User's Guide and Reference Manual, 2^{nd} Edition* - Leslie Lamport

Course Description:

In this course students will be introduced to the typesetting language LaTeX. LaTeX is used to typeset technical documents in mathematics and other STEM fields. It allows the user to create attractive and well organized documents. Emphasis will be on fundamentals and an ability to develop further skills independently. While the course will draw many examples from mathematics it could also be of interest to students in other STEM majors or technically intensive fields.

Learning Outcomes:

After completing this course students will be able to . . .

- Prepare mathematical papers and assignments observing common mathematical conventions as well as those of standard English.
- Assemble a properly formatted research paper including title, abstract, sections, and bibliography.
- Create slide or poster presentations appropriate for use at research meetings or conferences.
- Research, evaluate, and use new LaTeX packages appropriate to the work they wish to produce.

Course Content:

- Basic Documents and Standard Commands: equations, lists, tables, arrays, images, sectioning, layout, bibliographies
- Advanced Graphics with Tikz and PGF plots packages
- Slide Presentations with the Beamer Package
- Review
- Investigating New Packages

Grading:

Since the objective of this course is learn the typesetting, it does not have specific mathematical material for you to master. When you are working on assignments, I encourage you to type up work from your other classes whenever it is appropriate; there is no reason to increase your workload unnecessarily.

Assignments	**Points**
Equations and Lists	10
Tables and Arrays	10
Including Images	10
Bibliography	10
Blank Calendar or Schedule	10
Basic Drawings with TikZ	10
Including Plots with PGF Plots	10
Annotated Campus Map	10
Slide Show	20
Poster Presentation from a Template	10
Review Document	10
Duckling Code	10
Package Demonstration	20
Total:	150

With a total of 150 points you need 110 to pass. When grading assignments I will consider the following:

1. Did you complete the assignment? First and foremost you need to complete the assignments, this will count for 60% of the grade on each assignment.
2. How readable is your code? When I look at the raw code for the documents you submit I should be able to read what you have typed up. This includes good formatting, spacing, indentation, and comments. This will count for 25% of the grade on each assignment.
3. Did you do the minimum or show some style? The last 15% on each assignment will be based on style. I will look to see if you did the absolute minimum for the assignment or if you added a little character.

Extended details for each assignment will be posted on Blackboard, which is also where you will submit your work using URLs from Overleaf.

Course Calendar:

Week	Topic	Assignment
	Unit 1: Basic Documents in LaTeX	
1	A basic minimum working example with various equations and lists	Basic document with your name, title, equations, and lists
2	Sections, Tables, Arrays	Basic document in sections with tables or arrays
3	Using `\includegraphics` with images	Basic document with an image
4	Bibliography and bringing it together	Document with a bibliography which demonstrates the skills you learned so far
5	Create landscape documents	Use landscape mode or the `lscape` package to create a blank weekly calendar that you could use to track your schedule or plan out next semesters schedule.
	Unit 2: Graphics in LaTeX	
6	Using the `TikZ` package	Graphics demo with paths, shapes, nodes, colors and loops.
7	Plotting and images in `TikZ` and `PGF Plots`	Graphics demo that plots functions or annotates an image right in the document.
8	Include an image within a TikZ picture	Create an Annotated Campus Map in `tikz`
	Unit 3: Presentations in LaTeX	
9-10	Creating slide shows in LaTeX with the `Beamer` package	Slide show with at least five frames.
11	Learn to select a template from Overleaf	Create a conference poster.
	Unit 4: Learning Something New in LaTeX	
12	Reviewing previous material	Create a document that demonstrates a variety of the material covered so far.
13	TikZ Ducks and the Minted Packages	Create a duck avatar and show your code using the `minted` package
14-15	Create a lesson showing how to use a LaTeX package. You should view this as a capstone to the course and try and show off your skills. You must each do a different package of your choice. You can make it a document, slide show, or poster	

Departmental Outline:

1. Basic Formatting:
   (a) Margins and Text Areas
   (b) Font Sizes and Styles
   (c) Titles, Headers, Page Styles
   (d) Basic Packages for Fonts and Styles
2. Simple Documents:
   (a) Inline vs. Displayed Equations
   (b) Stacked Equations
   (c) Inserting Tables and Arrays
   (d) Importing, Sizing, and Cropping Images
   (e) Inserting and Formatting Bibliographies
3. Advanced Graphics:
   (a) Using Tikz to Generate Basic 2D Graphics
   (b) For Loops in Tikz for Repetitive Plots
   (c) Changing Colors in Tikz
   (d) Using PGF Plots to add 2D and 3D Plots of Functions.
4. Slide Presentations Using the Beamer Package:
   (a) Introduction to the Beamer Package
   (b) Overlays: The `\alert`, `\onslide`, and `\only` commands
   (c) Timed Slides
   (d) Adding Notes
   (e) Good Conventions for Slides and Presentations
5. Poster Presentations:
   (a) Using modified Beamer Classes
   (b) Using Templates
   (c) Good Conventions for Clear Posters
6. Examining New Packages:
   (a) Finding a Package
   (b) Reading Documentation
   (c) Creating a Minimal Working Example

You and Your Grades:

- "A" (Exceptional) range 90% to 100%:
  The student has demonstrated significant mastery of the appropriate knowledge and skills relevant to the course. The student is able to solve standard formulaic exercises and most nonstandard problems which require deeper insight.
  - "A" $\iff 92.5\% \leq Grade \leq 100\%$
  - "A-" $\iff 90\% \leq Grade < 92.5\%$
- "B" (Good) range 80% to 90%:
  The student has demonstrated mastery of the appropriate knowledge and skills relevant to the course. The student is able to solve standard formulaic exercises and some nonstandard problems which require deeper insight.
  - "B+" $\iff 87.5\% \leq Grade < 90\%$
  - "B" $\iff 82.5\% \leq Grade < 87.5\%$
  - "B-" $\iff 80\% \leq Grade < 82.5\%$
- "C" (Adequate) range 70% to 80%:
  The student has demonstrated adequate mastery of the appropriate knowledge and skills relevant to the course. The student is able to solve most standard formulaic exercises but struggles with nonstandard problems which require deeper insight.
  - "C+" $\iff 77.5\% \leq Grade < 80\%$
  - "C" $\iff 72.5\% \leq Grade < 77.5\%$
  - "C-" $\iff 70\% \leq Grade < 72.5\%$
- "D" (Inadequate) range 60% to 70%:
  The student has demonstrated inadequate or incomplete mastery of the appropriate knowledge and skills relevant to the course. The student is able to solve some standard formulaic exercises but few if any nonstandard problems which require deeper insight.
  - "D+" $\iff 67.5\% \leq Grade < 70\%$
  - "D" $\iff 62.5\% \leq Grade < 67.5\%$
  - "D-" $\iff 60\% \leq Grade < 62.5\%$
- "F" (Unacceptable) below 60%:
  The student has demonstrated essentially no mastery of the appropriate knowledge and skills relevant to the course. The student is unable to solve most standard formulaic exercises and essentially no nonstandard problems which require deeper insight.

End User Agreement:

General Expectations: As a student in this class you are expected to:

- watch and take notes on all the lecture videos,
- actively read material in each section, taking notes,
- review your notes on a regular basis,
- check your university email every day,
- check the class site ***at least*** every other day,
- begin assignments and studying for exams in a timely fashion,
- ask questions early and often,
- attend office hours,
- seek help in the math clinic or tutoring center, and
- complete assignments and readings on time.

Assignment Guidelines: (These apply to ***all out of class work***.)

- Work handed in must always look neat, legible, and professional. Work must be very neatly written or typed; read the directions. The quality of your work will be factored into your grade, up to 10%. In extreme cases work may be rejected and then counted as late.
- Answers on all assignments should be given in complete sentences. I should be able to tell what your answer means without re-reading the problem. This does not mean you simply rewrite the question.
- An assignment is considered late after I have handed it back or gone over it in class. Late assignments are accepted but may receive at most 75% credit. Late assignments go to the absolute bottom of the stack of papers to be graded; ***all on time work is graded before any late work.***
- If you work on an assignment as part of a group, then there may be no more than three individuals in the group and all your names must be on the assignment. You should hand in only one copy of the work.
- All work must be submitted in the manner directed.

Email Etiquette Guidelines: When sending an email you must include the course number and semester in the subject line. For example, if you are taking MAT 314 in Fall 1592 then the the subject line should begin with "[MAT 314 Fall 1592]." Also, you should always begin with a salutation such as "Dear Dr. Rocca" and end with a closing such as "Sincerely, I. Newton."

Exam Makeup Policy: If there are exams in the class; to qualify for a makeup exam you must have a valid reason for missing the exam and, if at all possible, let me know ahead of time that you are missing the exam. You will need to meet with me in order to arrange a time for the make up exam. If you do not have a valid reason, do not give prior notice when possible, or simply do not show up for an exam, you are not entitled to a makeup and will not be given one. If you fail to show up for your makeup exam, you will not be given a second opportunity.

The 2% Exception: If there are quizzes or similar class work; any quiz or class work which is ultimately worth no more then 2% of your final grade can not be made up.

Time on Task: As a 1 credit class you should expect to average 2.5 to 3 hours of work a week. Some weeks you may get away with less and some may require more.

Attendance: There is no specific policy for attendance in this course. However, please keep the following in mind, if you have three consecutive unexcused absences within the first half of the semester I am required to report to the University that you have stopped attending. For an online class attendance is determined by regularly logging on ***and*** submitting work.

Academic Honesty: If on any assignment, quiz, or exam you turn in someone else's work, regardless of the source, as if it were your own you will receive a zero on that assignment, quiz, or exam. If you are caught doing this three times you will receive an F in the course and the Dean will be informed of your academic dishonesty.
(https://www.wcsu.edu/faculty-handbook/2019-2020/policies-pertaining-to-students/academic-honesty-policy/)

Accommodations: If you have need of an accommodation for testing or note taking, please visit AccessAbility Services, located in the HAAS Library room 406 (http://www.wcsu.edu/accessability).