

# Math Methods for Physics I, Spring 2025

## Contact information

**Instructor:** Prof. Katharine Long

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**Github:** <https://github.com/krlong014/CourseNotes>

**Office:** Math 102

**When to find me:** My scheduled office hours are

- M 1-3
- Tu 12:30-2
- F-1-2:30

and I'm often around and available W 1-4.

# Math Methods I: Software and books

## Required materials

- **Software:** (links here and at my github course page)
  - *Mathematica*: You can get this in several ways:
    - Buy a student license from **Wolfram** (current cost, \$75 per year)
    - If you like playing with Linux on single-board computers, *Mathematica* is freely available on Raspberry Pi computers running PiOS.
  - *TopHat*: free to TTU students through **TTU site license**
- **Textbook:**
  - Hassani, *Mathematical Methods for Students in Physics and Related Fields*
    - Freely available in PDF form to TTU students through **SpringerLink**

# Math Methods I: immediate action items

## To do in the next few days

- Get TopHat: quizzes start Friday, 17 Jan.
- First webwork problem set due the night of Wednesday, 22 Jan (actually, 3:00 AM, 23 Jan)
  - Refresher questions from Trigonometry, Calculus I, II, III & Physics I
    - If you find these problems difficult, please get help from me in office hours or by Piazza message
- Get Mathematica & textbook
- Accept invitation to Piazza page for this course

## Coming soon

- First written homework will be posted late next week
  - It will require Mathematica for some problems

# Assessment and feedback

Type	Weight
Homework: includes written problems (often involving <i>Mathematica</i> calculations) 35%, and Webwork (15%). Lowest one dropped for each.	<b>50%</b>
Quizzes (roughly 1-2 per lecture, on <i>TopHat</i> starting 2nd lecture). Lowest 2 dropped.	<b>12%</b>
2 midterm exams (in class, closed book, no notes, no formula sheets)	<b>10% each</b>
Final exam ( <b>comprehensive</b> , in class, closed book, no notes, no formula sheets)	<b>18%</b>

- Letter grades are based on a 15 point scale
- Grades are not curved.
- Test dates are **21 Feb** and **4 Apr**
- Final exam is **13 May**, 1:30-4:00 PM, usual classroom.

# Advice

## How to survive and thrive in Math Methods

- Keep up. The quizzes and webwork help you gauge how well you're understanding the material.
- If you don't understand something, speak up sooner rather than later, either in class, in office hours, or on Piazza
- Homework is essential: It's 50% of your grade (35% written, 15% webwork). More importantly, working problems is how you learn.
- Find a good study group, and work with people whose skills complement yours.
- Learn to use *Mathematica* for the grunt work.
- Come to office hours. I don't bite!