

# MATH 3341: Introduction to Scientific Computing Lab

University of Wyoming, Spring 2020  
Syllabus

**Instructor:** Libao Jin      **Course Date:** 01/27/2020 – 05/08/2020  
**Email:** [ljin1@uwoyo.edu](mailto:ljin1@uwoyo.edu)      **Course Page:** [libaoj.in/math-3341-spring-2020/](http://libaoj.in/math-3341-spring-2020/)  
**Office:** Ross Hall 205      **Office Hour:** M/F: 10 AM – 11 AM & by appointment  
**Classroom:** STEM 215      **Lab Hour:** F: 3:10 PM – 4:00 PM, STEM 215

## Schedule

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All lab sections meet in the Enzi STEM Building in Room 215.

Section	Day	Time
01	Wednesdays	03:10 PM – 04:00 PM
02	Thursdays	03:10 PM – 04:00 PM

## Course Description

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The objective of this lab is to expose students to the basic syntax and tools in MATLAB so that they succeed in writing correct computer code for the solution of scientific computing problems. Offered S/U only. **Prerequisite:** Concurrent or previous enrollment in MATH 3340.

## Topics, Lab Assignments & Grading

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1. Introduction to MATLAB and L<sup>A</sup>T<sub>E</sub>X
2. Variables, Arrays and Scripts
3. Functions and Control Flows
4. Plotting Data
5. Formatting Output and Generating Tables
6. LU Decomposition
7. Debugging & Good Coding Practices
8. MATLAB Interpolation Routines and Their Derivatives
9. Ill-conditioned Matrices and Finite Precision Arithmetic
10. MATLAB 3D Plots
11. MATLAB Integration Routines & Gauss Quadrature
12. Romberg Integration
13. Random Numbers, Histogram & Monte Carlo Integration
14. Built-in ODE Solvers in MATLAB

There will be 14 lab assignments for the course. There will be an assignment due during the final week of classes (i.e. during dead week). Each assignment is worth 20 points and will be graded with a rubric which can be viewed in WyoCourses. This course is graded Satisfactory/Unsatisfactory. In order to receive a Satisfactory in this course you must

- Have no more than 3 absences
- Submit all 14 lab assignments
- Have a cumulative average of 70% or better on your lab assignments.

## **Late Submission Policy**

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In general, lab assignments will be due by the end of the lab. For students that need more time or are unable to attend lab for the week must turn in lab assignments by Friday at 11:59 PM. Late assignments will receive a 5 point deduction (i.e. receive a maximum score of 75%). Labs will close for submission by Tuesday at 11:59 PM of the following week.

## **Attendance Policy**

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You are permitted no more than 3 absences. More than 3 absences puts you at risk for an Unsatisfactory in the course. This will be determined at the discretion of the instructor. In the event that you know you will miss lab, it is expected that you email me *ahead of time* to let me know. In the event of an emergency, please contact me as soon as possible. You are still required to turn in the lab assignment for the week.

## **Communication and Assistance**

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### **WyoCourses**

All course communication will occur via WyoCourses. This will also be where you will access materials for the lab each week. All assignments will be submitted in WyoCourses. You will want to make sure your notifications are set so you receive an email when announcements are posted.

### **Office Hours & Lab Hours**

Office hours and lab hours are set for you to ask questions about material you are struggling with, both in the lab and in the lecture. Outside of posted hours you will need to make an appointment. I have a schedule posted on <https://libaoj.in/files/Schedule.2020s.pdf> as well as WyoCourses to assist you to make an appointment.

### **Email**

Please always put [MATH-3341] as the prefix in the subject line of any email you send me. There will be a 24 hour response time to any communication.

## **Additional Information**

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### **Accommodations for Students with Disabilities**

If you have a physical, learning, or psychological disability and require accommodations, please let me know as soon as possible. You will need to register with, and provide documentation of your disability to, the University Disability Support Services (UDSS) in SEO, room 109 Knight Hall, 766-6189, TTY: 766-3073.

## **Academic Dishonesty**

The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and the right to expect honesty from others. Any form of academic dishonesty is unacceptable to our community and will not be tolerated. Any suspected violations of standards of academic honesty should be reported to the instructor, department head, or dean. For more information, please consult UW Regulation 6-802.

## **Classroom Statement on Diversity**

The University of Wyoming values an educational environment that is diverse, equitable, and inclusive. The diversity that students and faculty bring to class, including age, country of origin, culture, disability, economic class, ethnicity, gender identity, immigration status, linguistic, political affiliation, race, religion, sexual orientation, veteran status, worldview, and other social and cultural diversity is valued, respected, and considered a resource for learning.

## **Duty to Report**

UW faculty are committed to supporting students and upholding the University's non-discrimination policy. Under Title IX, discrimination based upon sex and gender is prohibited. If you experience an incident of sex- or gender-based discrimination, we encourage you to report it. While you may talk to a faculty member, understand that as a "Responsible Employee" of the University, the faculty member **MUST** report information you share about the incident to the university's Title IX Coordinator (you may choose whether you or anyone involved is identified by name). If you would like to speak with someone who may be able to afford you privacy or confidentiality, there are people who can meet with you. Faculty can help direct you or you may find info about UW policy and resources at <http://www.uwyo.edu/reportit>

You do not have to go through the experience alone. Assistance and resources are available, and you are not required to make a formal complaint or participate in an investigation to access them.

## **Student Resources**

- Disability Support Services: [udss@uwyo.edu](mailto:udss@uwyo.edu), 766-3073, 128 Knight Hall, [www.uwyo.edu/udss](http://www.uwyo.edu/udss)
- Counseling Center: [ucstaff@uwyo.edu](mailto:ucstaff@uwyo.edu), 766-2187, 766-8989 (After hours), 341 Knight Hall, [www.uwyo.edu/ucc](http://www.uwyo.edu/ucc)
- Academic Affairs: 766-4286, 312 Old Main, [www.uwyo.edu/acadaffairs](http://www.uwyo.edu/acadaffairs)
- Dean of Students Office: [dos@uwyo.edu](mailto:dos@uwyo.edu), 766-3296, 128 Knight Hall, [www.uwyo.edu/dos](http://www.uwyo.edu/dos)
- UW Police Department: [uwpd@uwyo.edu](mailto:uwpd@uwyo.edu), 766-5179, 1426 E Flint St, [www.uwyo.edu/uwpd](http://www.uwyo.edu/uwpd)
- Student Code of Conduct Website: [www.uwyo.edu/dos/conduct](http://www.uwyo.edu/dos/conduct)
- Student Remote Lab: <https://microlab.uwyo.edu/labs/remotelab.asp>

**Changes might be made in the syllabus as the course proceeds. Any changes will be announced in class and via WyoCourses along with an updated syllabus.**