

COURSE SYLLABUS

MATH 120 - Mathematical Software and Programming Syllabus

Fall 2025

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Instructor Information

Instructor Name: Mario Bañuelos

Department: Mathematics

Email / Telephone: mbanuelos22@csufresno.edu / 559-278-2599

Office: PB 337

Student Support Hours: Tues 3:30 - 5PM, Wed 2 - 3:50PM, Thur 3:30 - 5PM

Course Information

Course Modality: In-Person

Course ID: 76573

Units: 3

Class Meeting Location & Time: TuTh 2:00PM - 3:15PM, Science 2 Building Room 321

Canvas: fresnostate.instructure.com

Prerequisites: MATH 76 (can be taken concurrently); and either CSCI 40 or ECE 71 or permission of instructor.

Course description: Introduction to programming usage in mathematics and/or statistics, including computer algebra software, an interpreted object-oriented high-level programming language, and topics related to statistics, database management, optimization, and/or cloud computing (Formerly MATH 191T). Since this is a 3 unit class, you should expect to study an average of 6 hours outside of class each week.

Agreement: The goal of this course is to offer a joyful, rigorous, and rewarding experience to every student; both you and the instructor (me) will build that rich experience by devoting our strongest available effort to the class. You will be challenged and supported. Please be prepared to take an active, critical, patient, and generous role in your own learning and that of your classmates.

Principles of Community: I am committed to [Fresno State's principles of community](#) of being **respectful, kind, collaborative, and accountable**. Any discrimination against or harassment of persons based on race, color, religion, sex, sexual orientation, gender identity, national origin, political affiliation, genetic information, veteran status, disabling condition, or age will not be tolerated. I also expect you to behave according to these values, and

- I encourage you to come speak to me about such matters and report behavior going against these values.
- I am willing to advise and assist you in resolving matters related to such an issue, if necessary.
- I am willing to serve as a witness for any of you in the event of an investigation under the provisions of Title IX, if necessary.

Required Course Materials

Course Materials. All course materials for this course will be posted on Canvas and be freely available.

Software. [Google Colab \(Python\)](#) (no installation necessary) or Jupyter Notebooks ([Anaconda installation](#) recommended) - you are welcome to use other programming languages, but examples will be in Python – I will also lead a Python introduction in class), Google Slides, Forms, and Sheets will be required for the course and can be accessed for **free**. If you need a laptop, the library offers [tech lending services](#).

Course Specifics

Course goals: The focus of this course is to develop students' use of computers and programming to solve both mathematics problems, including applications. Students of the course should be able to (1) program scripts functions to explore, illustrate, and understand mathematical ideas, (2) create visualizations to communicate results to a general audience, and (3) describe the relative strengths of different programming languages.

Student Learning Outcomes: Upon successful completion of this course, students should be able to perform the following:

1. Write and explain programs to explore mathematical problems and concepts.
2. Write and explain programs, incorporating data, to explore applications outside of mathematics.
3. Create visualizations and communicate those results and mathematical ideas.
4. Write programs using computer algebra and object-oriented programming languages.
5. Create proper test cases to test computer programs.
6. Identify correct syntax and logical errors in computer programs.

Course Evaluation and Grading

Grading policy: Your final grade in the course will be based on the following:

1. Homework Assignments (10%, lowest score dropped)
2. Weekly Class Participation and Presentations (40%)
3. Midterm Projects (20%)
4. Final Project (30%)

As an educator, I am always trying to practice more [equitable forms of assessment and grading](#). So, the final grade will be assigned according to the following distribution:

Table 1 Distribution of Letter Grade to Percent and Points

A	B	C	D	F
90 – ∞	80 – 89	70 – 79	60 – 69	0 – 59

Homework. Weekly homework will be assigned for each chapter and accounts for 10% of the total grade. You may submit your homework up to 1 week late (with no penalty). After this, assignments will not be accepted. To accommodate unexpected situations, your lowest homework assignment will be dropped. Your homework will be evaluated by selecting a subset of the problems from each assignment to grade. For your assignments with code, you will be required to create a Jupyter Notebook with appropriate comments. While not required, I highly encourage you to use LaTeX, a mathematical typesetting environment for typing your homework. If you are new to LaTeX, I recommend trying the free online LaTeX editing environment called Overleaf (www.overleaf.com).

Weekly Class Participation and Presentations / Attendance. Each student is expected to attend every class meeting, be respectful of other students and the instructor, and actively participate in class discussions. Students will also be expected to present their findings and/or solutions to the class.

Instead of **quizzes**, we will have weekly check-ins to reinforce key concepts and help you apply your learning in real time.

If you are absent from class, it is your responsibility to check on announcements made while you are away.

Midterm Presentations. One individual and one group project will be assigned throughout the semester. Each project will focus on specific course content and students will present their findings and/or solutions to the class.

Final Project. The individual final project will consist of a typed report and a 5-7 minute presentation. Further details will be provided separately. The final presentation will be scheduled for the day of the final **Thursday, Dec. 18 from 3:30-5:30PM**.

Course Policies & Safety Issues

1. Try to attend every class meeting. You will be expected to work both individually and in groups during class.
2. If possible, remove distractions that may affect your learning.

3. Audio and video recordings of class lectures are prohibited unless I give explicit permission to do it. Students with an official letter from the Services for Students with Disabilities office may record the class if SSD has approved that service.
4. This syllabus and schedule are subject to change. If a change is made, it will be announced to the class.

OER Course

This is an [Open Education Resources \(OER\)](#) course that incorporates free, openly licensed materials instead of a traditional textbook.

- All course readings and materials will be available on [Canvas](#).

Fresno State has continually focused on the safety and well-being of our campus community by following state and local public health guidelines as well as California State University policies. Any COVID-19-related questions or concerns can be directed to campus Office of Environmental Health & Safety/Risk Management at 559.278.8422

Additionally, listed below are resources and quick links regarding updates on the coronavirus, campus and community resources, testing sites and more.

- Visit the [Center for Disease Control \(CDC\) website for the latest updates on the virus](#)
- For updated regarding the Fresno State campus community and response, click [Fresno State Coronavirus Updates](#).

Please remember that the same student conduct rules that are used for in-person classroom instruction also apply for virtual/online classrooms. Students are prohibited from any unauthorized recording, dissemination, or publication of any academic presentation, including any online classroom instruction, for any commercial purpose. In addition, students may not record or use virtual/online instruction in any manner that would violate copyright law. Students are to use all online/virtual instruction exclusively for the educational purpose of the online class in which the instruction is being provided. Students may not re-record any online recordings or post any online recordings in any other format (e.g., electronic, video, social media, audio recording, web page, internet, hard paper copy, etc.) for any purpose without the explicit written permission of the faculty member providing the instruction. Exceptions for disability-related accommodations will be addressed by Student Disability Services working in conjunction with the student and faculty member.

Plagiarism Detection: The campus subscribes to Turnitin, a plagiarism prevention service, through Canvas. You will need to submit written assignments to Turnitin. Student work will be used for plagiarism detection and for no other purpose. The student may indicate in writing to the instructor that they refuse to participate in the plagiarism detection process, in which case the instructor can use other electronic means to verify the originality of their work. **Turnitin Originality Reports WILL be available for your viewing.**

Course AI Policy: Language models, such as Chat GPT, are powerful tools for generating text, but it is important to use it responsibly and ethically.

Students are encouraged to use language models as a resource for generating ideas and inspiration, but they must never pass off its output as their own work. Any use of language models must be properly cited and acknowledged, just as with any other source of information.

Intellectual Property: All course materials, including but not limited to the syllabus, readings, quiz questions, exam questions, and assignments prepared by the instructor are property of the instructor and University. Students are prohibited from posting course materials online (e.g., Course Hero) and from selling course materials to or being paid for providing materials to any person or commercial firm without the express written permission of the professor teaching this course. Doing so will constitute both an academic integrity violation and a copyright violation. Audio and video recordings of class lectures as well as images of chat or messages shared during course sessions are prohibited unless I give you explicit permission in advance. Students with an official letter from the Services for Students with Disabilities office may record the class if SSD has approved that service. Otherwise, recordings of lectures are included in the intellectual property notice described above. These provisions exist regardless of the modality of the course. That is they apply to in-person, hybrid and online courses.

Student Ratings of Instruction: In the final weeks of the semester, you will be asked to complete a short survey to provide feedback about this class. The primary goal of student ratings is to help your instructor improve the class. Feedback will also be reviewed by the department chair and the college dean. You will be given 15 minutes of class time to complete student ratings. Please offer feedback honestly and thoughtfully. Your participation is appreciated. You can access your student rating surveys and get more information at [Fresno State Student Ratings for Instruction \(SRI\)](#)

University Policies

Students with Disabilities: Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the University Library, Room 1202 (278-2811).

Financial Aid Satisfactory Academic Progress Standards and Appeals Process:
<https://studentaffairs.fresnostate.edu/financialaid/policies/sap/index.html>

The following University policies can be found on the web at:

- [Adding and Dropping Classes](#)
- [Cheating and Plagiarism](#)
- [Computers](#)
- [Copyright Policy](#)
- [Disruptive Classroom Behavior](#)
- [Honor Code](#)

- Title IX

Fresno State is committed to fostering a safe, productive learning environment for all students. Title IX and CSU policy prohibit discrimination on the basis of sex, which includes sexual harassment, domestic and dating violence, sexual assault, sexual exploitation, and stalking. We understand that sexual violence can impact a students' *ability to be successful* in the learning environment. We encourage students who have experienced sexual misconduct *to seek information on where to report from any member of our faculty or staff in order to ensure that the university can provide students with the necessary resources and supportive measures.*

As an instructor, I have a mandatory reporting responsibility as a part of my role. It is my goal that you feel comfortable sharing information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep the information you share private to the extent possible. However, I am required to report any information I receive regarding sexual misconduct or information about a crime that may have occurred during your time at Fresno State.

Students can report incidents of alleged sexual misconduct to either or both of the following resources:

Office of Compliance and Civil Rights | occr.fresnostate.edu | 559.278.5003
Fresno State Police Department | fresnostate.edu/police | 559.278.8400

Students can also report other incidents of discrimination or harassment to:

Office of Compliance and Civil Rights | occr.fresnostate.edu | 559.278.5003

Students can access *confidential support* from two separate resources on campus:

Counseling Services | studentaffairs.fresnostate.edu/health/counseling | 559.278.2734 Survivor
Advocacy Services | fresnostate.edu/survivoradvocate | 559.278.6796

Pregnancy or Related Conditions:

[Pregnant Students](#) or those with related conditions should contact the Title IX Coordinator in the Office of Compliance and Civil Rights for assistance. The Title IX Coordinator can coordinate specific actions to prevent sex discrimination and ensure the student's equal access to educational programs or activities.

Office of Compliance and Civil Rights | occr.fresnostate.edu | 559.278.5003

[Parent scholars](#) provides information on priority registration and other support for parenting students.

[Services for Students with Disabilities](#) can also provide assistance with [accommodations](#).

If you have concerns and you are unsure who to contact, please visit the [Concern & Action Guide](#).

Emergency Information: In the event of an emergency, everyone in the campus community becomes a partner in the response. To ensure you are prepared and remain calm you must make yourself familiar with campus protocols. To contact the Fresno State Police Department

call 559.278.8400 from your cell phone or 911 from a campus phone. Prior to an emergency, assess your environment for options depending on the emergency. Identify all possible exit routes, in an emergency always use the closest most safe exit. Once you exit the building go to the predetermined evacuation assembly point, if that is unavailable then go to an open safe space away from the emergency. Identify where and how you can secure yourself inside if you need to shelter in place or hide from a threat. Be prepared to help guide those around you and assist individuals who may be in need. Additional information can be found at www.fresnostate.edu/emergency

University Services

The following University services can be found on the web at:

- [Associated Students, Inc.](#)
- [Students with Disabilities](#)
- [Dream Success Center](#)
- [Library](#)
- [Learning Center Information](#)
- [Student Health and Counseling Center](#)
- [Academic Success Coaching](#)
- [Survivor Advocacy](#)
- [Writing Center](#)
- [Project Rebound](#)

Subject to Change Statement

THIS SYLLABUS AND SCHEDULE ARE SUBJECT TO CHANGE IN THE EVENT OF EXTENUATING CIRCUMSTANCES.

Tentative Course Schedule

Please refer to [MATH 120 Tentative Schedule](#) for the course schedule. Please bookmark this page, as it will be updated throughout the semester.