

ASTR 501

Introduction to Computing

(Fall 2022)

Lectures: 9:30 AM - 10:45 AM AZ time Tuesday

Location: Steward 208 or zoom <https://arizona.zoom.us/j/6849448207>

Instructor: Dr. Tim Eifler

Email: timeifler@arizona.edu

Office hours: Tue 10:30 - 11:00 AM, Steward 322 or 208, please email to set an appointment

Course description: ASTR 501 is an elective grad level course introducing basic concepts of computing in astrophysics. The course is structured as a discussion section of code repositories that were built to address astrophysics research problems. Participants are expected to showcase one of their own repositories that they have used in past research projects or that they are building right now for their first PhD research project, including a demo of the code. Alternatively, participants can also discuss a git repo that hosts code relevant to their research interests. The discussion sessions alternate with a help desk session, where participants can ask about specific coding problems that they have encountered in their research and ask for tailored training material to improve their coding abilities in specific areas of their interest.

Grading: Course grade will be based on presentation of the git repository.

Homework Assignments: No homework is assigned as part of this course.

Texts/resources: <https://scikit-learn.org/stable/>. Additional texts/software will be provided via d2l.

Course Objectives and Expected Learning Outcomes: The overarching goal of this course is for participants to become familiar with the HPC environment at UArizona and to learn about different techniques how to efficiently develop complex science software. The course aims to improve the participants research projects by discussing the specific code repos that the participants are currently working on (or alternatively code repos that are directly linked to their field). The course also provides a tailored self-study program for python (and c or c++ upon request) depending on the participants knowledge.

Incomplete/Withdrawal: Requests for incomplete (I) or withdrawal (W) must be made in accordance with University policies, which are available at <http://catalog.arizona.edu/policy/grades-and-grading-system#incomplete> and <http://catalog.arizona.edu/policy/grades-and-grading-system#Withdrawal> respectively.

Attendance:

- If you feel sick, or may have been in contact with someone who is infectious, stay home. Except for seeking medical care, avoid contact with others and do not travel.
- Notify your instructor(s) if you will be missing a course meeting or an assignment deadline.
- Non-attendance for any reason does not guarantee an automatic extension of due date or rescheduling of examinations/assessments. Please communicate and coordinate any request directly with your instructor.
- If you must miss the equivalent of more than one week of class, you should contact the Dean of Students Office DOS-deanofstudents@email.arizona.edu to share documentation about the challenges you are facing.
- Voluntary, free, and convenient COVID-19 testing is available for students on Main Campus.
- If you test positive for COVID-19 and you are participating in on-campus activities, you must report your results to Campus Health. To learn more about the process for reporting a positive test, visit the Case Notification Protocol.
- COVID-19 vaccine is available for all students at Campus Health.
- Visit the UArizona COVID-19 page for regular updates.

Course Website: In this class we will make use of D2L. It is your responsibility to check D2L regularly for course announcements/updates and assignments.

Classroom Behavior Policy: To foster a positive learning environment, students and instructors have a shared responsibility. We want a safe, welcoming, and inclusive environment where all of us feel comfortable with each other and where we can challenge ourselves to succeed. To that end, our focus is on the tasks at hand and not on extraneous activities (e.g., texting, chatting, reading a newspaper, making phone calls, web surfing, etc.).

Threatening Behavior Policy: The UA Threatening Behavior by Students Policy prohibits threats of physical harm to any member of the University community, including to oneself. See <http://policy.arizona.edu/education-and-student-affairs/threatening-behavior-students>.

Code of Academic Integrity: Students are expected to adhere to the UA Code of Academic Integrity as described in the UA General Catalog. See: <http://deanofstudents.arizona.edu/academic-integrity/students/academic-integrity>.

UA Nondiscrimination and Anti-harassment Policy: The University is committed to creating and maintaining an environment free of discrimination; see <http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>.

Academic advising: If you have questions about your academic progress this semester, or your chosen degree program, please note that advisors at the Advising Resource Center

can guide you toward university resources to help you succeed.

Life challenges: If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office can be reached at 520-621-2057 or DOS-deanofstudents@email.arizona.edu.

Physical and mental-health challenges: If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520-621-9202). For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.

Accessibility and Accommodations: At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the Disability Resource Center (520-621-3268, <https://drc.arizona.edu/>) to establish reasonable accommodations.

Equipment and software requirements: For this class you might need access to the following hardware: laptop or web-enabled device with webcam, headphone, and microphone; regular access to reliable internet signal; ability to download and run software. Google CoLab, Jupyter lab, or jupyter notebook with some version of python 3 (please go for 3.7 if you are installing from scratch) are required for the term project and the exercises. The term project should be written in latex (overleaf). github username and access are also required.

Class Recordings: This class is not recorded. All recordings are subject to government and university regulations. Therefore, students accessing unauthorized recordings or using them in a manner inconsistent with UArizona values and educational policies are subject to suspension or civil action. You may record the class for your private notetaking purpose, but widely sharing/publication is disallowed.

Subject to Change Statement: Information contained in the course syllabus may be subject to change as deemed appropriate by the instructor. Updates will be announced.