

PHYSICS 1509 - INTRODUCTORY ASTRONOMY LABORATORY – Spring 2024

Section 301: <https://umsystem.instructure.com/courses/209166>

Description

A science laboratory course in which the student analyzes and interprets astronomical data. Prerequisite: Preceded or accompanied by Physics 1505 or 1515.

Instructor

Professor Marco Cavaglia

Office: Physics 204

Office hours: Wednesday 12:00 p.m. – 1:00 p.m. or by appointment. Please confirm beforehand for availability.

Email: cavagliam@mst.edu

Please address your instructor with his academic title when emailing him. **Emails that do not include a proper salutation or sign-off will not be responded to.** Your instructor will answer to your emails as quickly as possible, but please keep in mind that teaching this course is only one of his many responsibilities. Please be patient with him. If you have not received a response within one working day, don't hesitate to send a reminder. Within one working day, feel free to send a reminder.

Meeting time and location

Every second week on Monday 6:00 p.m. – 7:50 p.m. in Physics 213.

Course goals and student learning outcomes

Upon completing this course, the successful student will learn how to analyze some simple astronomical data.

Evaluation

There will be six labs during the semester. **You need to attend and return lab reports for all of them.** Each completed lab report is worth up to 200 points. A missing lab report counts as zero. The five best scores will count toward the final grade, i.e., the lowest score will be dropped. You will work the labs in groups of 3 or 4 students. You can choose your own lab team members, but they must remain the same for the whole semester. You must choose your team members before the first lab and communicate the names by email to the course instructor. The department will appoint a graduate student teaching assistant to run the labs. Their name will be communicated as soon as they have been appointed. **Please be kind to your lab instructor!**

Lab reports must be easy to read. If you scan or take a picture of an lab report written on paper, please make sure it is well legible and has your name and lab number clearly written in the top right corner of all pages. Numerical answers should have units and a reasonable number of significant digits. You should keep all returned lab reports until the final grade of the course has been posted by the instructor. Transgression of the above rules may reduce your grade on the assignment.

Grading scale (points):

A: 895 and above

B: 795 – 894

C: 695 – 794

D: 595 – 694

F: 594 and below

Course attendance policy

This course is Classroom Based. You are required to attend all labs. Please do not arrive late to the lab or leave early unless you have been previously excused by the instructor. Of course, if you are taken ill during the lab or in case of an emergency, feel free to leave. However, as soon as you feel better or the emergency is over, let the instructor know why you left. The instructor will not solicit details of the occurrence or any personal or private information.

Students with inadequate attendance may be dropped. Any student who has inadequate attendance, as evidenced by two confirmed absences or missing a total of two graded lab reports, is subject to being dropped.

The university requires that all students have their course attendance verified at least once during the first two weeks of the semester. If your attendance is not verified, you will be dropped from the course, and any financial aid will be adjusted accordingly.

Health and well-being

In this course, the physical and mental well-being of all students (as well as the instructor) takes precedence over all other considerations. The instructor will strive to keep the students safe and healthy. Your instructor hopes students will do the same for their well-being as well as the instructor's well-being. While no situation is risk-free, there are easy and effective actions you can take to protect yourself and others around you.

If you're feeling unwell, stay at home. Staying at home until you feel better or have been cleared to return to campus by health officers reduces the risk that you will pass on an illness to your friends, fellow students, your instructor, and others in your community. It will help ensure a smooth educational experience over the semester, as well as reduce the burden on our health services. Please contact Student Health Services at mstshs@mst.edu and/or 573-341-4284, if you become ill or are unable to attend the lab sessions.

COVID-19 and other viruses. To protect our campus community and each other from the risks of viral infections, Missouri S&T strongly encourages all students, faculty, and staff to be up-to-date on vaccinations. A combination of vaccination, staying home when you are sick, and seeking testing when you have symptoms will be our most effective measures to mitigate against the spread of viruses. There is no requirement to provide proof of immunization, but voluntary reporting of vaccination information at can be done at <https://studenthealth.mst.edu/>. If you are isolating, you will receive an absence note from Student Health and not Student Support and Community Standards (Care Management). You will be responsible of forwarding the absence note to the instructor.

In the event of instructor or campus emergency the course will continue online on the zoom platform.

Copyright, FERPA, and use of electronic devices during the labs

It is vitally important that our classroom environment promote the respectful exchange of ideas. This entails being sensitive to the views and beliefs expressed during discussions, whether in the lab or online. Please obtain instructor permission before recording any lab activity. It is a violation of University of Missouri policy to distribute such recordings without authorization and the permission of all who are recorded. More information is provided [online](#).

Note on the use of internet-enabled devices in the lab. Your instructor's main goal in this course is to provide the best possible teaching experience. This includes mutual respect as well as cooperation among all parties (instructor and students). Students that browse the internet, chat with friends, or watch TikTok videos during the lab are a few instances of disrespectful student conduct. **Students that use electronic devices in the lab will be requested to stop using them, unless they are directed to do so or there is a documented emergency. Students will be asked to leave if they do not comply.**

In the event of refusal, the behavior will be considered disruptive, and your instructor reserves the right to request that an appropriate disciplinary action be taken by the Campus Judicial Officer. Please keep this in mind if you still choose to use unapproved electronic devices during the labs.

Accessibility and accommodations

It is the university's goal that learning experiences be as accessible as possible. Student Accessibility and Testing provides services and accommodations that facilitate full participation in Missouri S&T's learning experience for students with disabilities. If you anticipate or experience physical, academic, and/or digital barriers due to a disability, please contact Student Accessibility and Testing at (573) 341-6655, email dss@mst.edu, or visit <https://saat.mst.edu/> for information.

Academic dishonesty and disruptive behavior

All students are expected to follow the [Honor Code](#). **Academic dishonesty and disruptive behavior will not be tolerated** and will be dealt with in accordance with university policies.

[Student Academic Regulations](#) describes the student standard of conduct relative to the University of Missouri System and offers descriptions of academic dishonesty including cheating, plagiarism, sabotage, and unauthorized use of artificially generated content, any of which will be reported to the Vice Provost for Undergraduate Education. You should familiarize yourselves with the Student Conduct Rules of the University of Missouri in [Section 200.010](#) of the [Collected Rules and Regulations](#) to review the expected standards for student academic integrity, disciplinary procedures, sanctions, and appeal procedures. Other resources for students regarding academic integrity can be found at this [link](#).

In the event of disruptive behavior, the course instructors will request the campus Judicial Officer to take effective disciplinary action after issuing a warning. See Student Academic Regulations at <http://registrar.mst.edu/academicregs>.

Disability policy

The Americans with Disabilities Act prohibits discrimination against and guarantees that people with disabilities have the same opportunities as people without a disability. Missouri S&T and your instructor are committed to providing educational opportunities for all academically qualified students. Reasonable accommodations to ensure equitable access to its programs and services for individuals with disabilities will be made in compliance with the Americans with Disabilities Act.

At the beginning of the semester, students with disabilities who have had their status verified by the Office of Student Disability Services should get in touch with the instructor to go

over their specific accommodation requirements.

To learn more about student disability services available to Missouri S&T students, please visit <https://dss.mst.edu/>.

Non-discrimination, equity and Title IX

Missouri S&T and your instructor are committed to the safety and well-being of our campus community, and to creating an environment free from discrimination and harassment.

Discrimination and harassment on the basis of race, color, national origin, ancestry, religion, sex, pregnancy, sexual orientation, gender identity, gender expression, age, disability, protected veteran status, and any other status protected by applicable state or federal law are prohibited. As used in this syllabus, the word “sex” is also inclusive of the term “gender.” During his responsibilities for this course, your instructor will uphold this policy.

Additionally, US Federal Law Title IX states that no member of the university community shall, on the basis of sex, be excluded from participation in, or be denied benefits of, or be subjected to discrimination under any education program or activity. Sexual harassment violations of this law include quid pro quo, hostile environment, sexual assault, dating/domestic violence, and stalking. The U.S. Department of Education has stated the prohibition on discrimination on the basis of sex includes sexual orientation and gender identity.

Students who are experiencing pregnancy or pregnancy-related conditions, including the birthing parent and non-birthing parent, have rights protected under Title IX. Students should contact the Office of Equity and Title IX to learn more about their rights and pregnancy-related assistance/accommodations provided by the University to ensure equitable access to University educational programs and activities.

In accordance with the University of Missouri’s Collected Rules and Regulations, all faculty and staff are required to report any information concerning discrimination disclosed through communication including, but not limited to, direct conversation, email, social media, classroom papers and homework exercises to the Equity Officer/Title IX Coordinator.

For more information regarding support for those that have been impacted or to report an incident of discrimination or harassment as defined by [Chapter 600](#) of the University’s Collected Rules and Regulations, visit the Office of Equity and Title IX or visit their website at equity.mst.edu.

Office of Equity and Title IX

Equity Officer and Title IX Coordinator: Dr. Paul Hirtz

Phone: (573) 341-7734

Location: 900 Innovation Drive, Suite 500

E-mail: equity@mst.edu

Changes to this syllabus

If a revision of the syllabus becomes necessary during the semester, it will be discussed in the lab sessions.

Statement of agreement

Please carefully review and print for your records this syllabus. **By taking this course, you confirm that you have read and understood this document and are agreeable to the policies and provisions set forth therein.**

Appendix: Other resources

S&T provides resources to support your mental, physical, and social well-being. Any of us can experience challenges that make learning difficult. If you are struggling, take advantage of the following resources offered by the university:

Student Well-Being. Student Well-Being provides counseling services, health promotion initiatives, and prevention programs to empower the S&T community to thrive and enhance personal, academic, and professional success. Department office hours are Monday–Friday, 8 a.m. – 5:00 p.m. On the website, you can find information related to confidential individual and group counseling, wellness consultations and trainings, resources for many health and wellness topics, and help for mental health crisis situations.

For the National Suicide Prevention Lifeline, call or text 988, or visit missouri988.org.

Health and Well-Being Canvas Course. The [Health and Well-Being Canvas Course](#) features trainings, presentations, and other health and well-being resources for students. The course is free for all students, is non-credit, and students can enroll at any point in the semester.

Student Support and Community Standards. [Student Support and Community Standards](#) is your central resource for support. During your time at S&T, you or a friend may need help navigating their student experience, facing a barrier, or experiencing a challenge. You are not alone! Student Support has a dedicated team and numerous resources such as [UCARE](#) and the [student emergency fund](#) to help you navigate the S&T experience and support your success. This includes support to address barriers related to academic, personal, emotional, medical, financial, or any other needs. All students can learn and grow from challenges or setbacks, they are stepping stones to success and we are here to help.

Learning Assistance through LEAD. The [Learning Enhancement Across Disciplines \(LEAD\)](#) program runs Learning Centers and Tutoring which provide an efficient means to improve your understanding and increase your mastery of the material you are studying. Discipline-based faculty and undergrad peer instructors operate openenvironment learning centers in nearly every foundational course as well as many upper-level courses. See the

schedule for LEAD learning assistance at <https://lead.mst.edu/schedule/>.

Writing and Communication Center. The [Writing and Communication Center](#)'s mission is to assist all students in their efforts to become better writers, communicators, and critical thinkers. The Center's peer consultants and coaches provide free individualized one-on-one and small group conversations to offer meaningful feedback and guidance to students across all disciplines. More information can be found on our website, through email: writing@mst.edu or stop by Curtis Laws Wilson Library 314–315.

Student Success Center. The [Student Success Center](#) (SSC) supports student development through peer Academic Mentoring focusing primarily on STEM courses, peer-to-peer soft skill coaching which can also act as an accountability buddy, and campus programming – all while providing free coffee and hot beverages! All undergraduate students are encouraged to utilize the SSC's free services to get timely support and to enhance their S&T Miner Experience. You can contact the SSC at success@mst.edu or 573-341-7590. To see the course offerings and times for SSC Academic Mentoring, visit <https://studentsuccess.mst.edu/academicmentoring/>.

Knack Tutoring (<https://mst.joinknack.com/>). Enrolled S&T undergraduate students can receive complimentary FREE tutoring assistance from peers who have successfully completed the course, available round the clock. You have the option to connect via the Knack platform online or in person on campus. If you've excelled in a course, consider becoming a Knack Tutor to support your fellow Miners!

Student Veterans Resource Center. The [Student Veterans Resource Center](#) (SVRC) is the nexus of resources and support for student veterans at S&T. The SVRC provides student veterans with a “safe space” and a familiar atmosphere. The center's Veteran Consuls provide one-on-one consultations to guide students to various resources on campus, while its advisor provides students with VA health and benefits resources. Visit the SVRC at Harris Hall, Suite G10, or contact the center at svrc@mst.edu.

Lab schedule

	Week	Section 301 (Monday)
Lab 1	2	January 22
Lab 2	4	February 5
Lab 3	7	February 26
Lab 4	10	March 18
Lab 5	12	April 1
Lab 6	14	April 22