

ASTR 008 – Introduction to Astronomy Lab
Fall 2018
LL 221

Instructors:

Prof. Ginny McSwain
pronouns: she, her
office: LL 405
email: mcswain@lehigh.edu
phone: 610-758-5322

TA: TBD

Course Objectives:

Students will gain experience applying astronomical research methods to understand the Solar System, stars, supernovae, and the Universe.

This one-credit laboratory is designed to accompany the three-credit course ASTR 007, Introduction to Astronomy. Although the course (007) can be taken without the laboratory (008), the reverse is not permitted. Students registered for ASTR 008 must be enrolled concurrently in ASTR 007 or have already passed ASTR 007.

Required Materials:

- Course pack: *Investigations in Astronomy* by McSwain & Blauvelt
- Scientific calculator

Grading:

Each laboratory will be graded on the basis of 10 points maximum. Your grade will be based on how well you performed and analyzed the experiment and, particularly, on how well you communicated your results. Completed labs will be collected at the end of each session. You are required to do all of the experiments and to be present for all of your scheduled laboratory meetings.

Makeup labs are not allowed without a valid written excuse. If you do have to miss a lab, consult with Prof. McSwain and/or the TA as soon as possible (in advance, if possible) so that they so that can work with you to schedule a makeup lab session.

Lab grades will not be curved. After all student work is accounted for, a curve may be applied to the final averages if necessary.

Academic Integrity:

Copying work from other students or outside sources is considered plagiarism, and it will not be tolerated. Although students will work in small groups (2–3 students) during lab, each student should write their own analysis in their own words, to be graded individually unless otherwise specified. Copying the analysis of a lab partner or another student is considered cheating. Outside references (other than the ASTR 007 textbook or ASTR 8 lab manual) must be properly cited if used on any assignment. Any student found to have engaged in academic misconduct on a graded assignment or exam may be assigned a zero for that assignment, assigned an F in the course, and/or reported to the Dean of Students.

Electronics Policy:

Each lab will use the desktop computer provided in the classroom. Personal laptops, cell phones, or other electronic devices (other than a calculator, perhaps) are not allowed.

Accommodations for Students With Disabilities:

If you have a disability for which you are or may be requesting accommodations, please contact both the professor and the Office of Academic Support Services, Williams Hall, Suite 301 (610-758-4152) as early as possible in the semester. You must have documentation from the Academic Support Services office before accommodations can be granted.

The Principles of Our Equitable Community:

Lehigh University endorses The Principles of Our Equitable Community¹. We expect each member of this class to acknowledge and practice these Principles. Respect for each other and for differing viewpoints is a vital component of the learning environment inside and outside the classroom.

¹<https://www.lehigh.edu/~inprv/initiatives/PrinciplesEquitableCommunity-Individuals.pdf>

Tentative Laboratory Schedule:

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| Week of Aug. 27: | Review of syllabus |
| Week of Sept. 3: | Lab 1: Exploring the Night Sky with <i>Stellarium</i> |
| Week of Sept. 10: | Lab 2: Understanding Astronomical Quantities |
| Week of Sept. 17: | Lab 3: Orbits of the Moons of Jupiter |
| Week of Sept. 24: | Lab 4: Atomic Spectra |
| Week of Oct. 1: | Lab 5: Measuring Features on the Moon |
| Week of Oct. 8: | Lab 6: Drawing Conclusions about the Moon |
| Week of Oct. 15: | Pacing Break Oct. 15–16 ; No labs this week |
| Week of Oct. 22: | Lab 7: The Weather and Climate of Mars |
| Week of Oct. 29: | Lab 8: Sunspots and the Rotation of the Sun |
| Week of Nov. 5: | Lab 9: Drawing Conclusions about Sunspots |
| Week of Nov. 12: | Lab 10: The Hertzsprung-Russell Diagram |
| Week of Nov. 19: | Thanksgiving Break Nov. 21–23 ; No labs this week |
| Week of Nov. 26: | Lab 11: The Lightcurve of the Supernova SN 2014J |
| Week of Dec. 3: | Lab 12: Hubble's Law |

This syllabus is only a tentative outline of the course. The grading policy, lab schedule, or the topics covered in class may change as needed.