

ASTRONOMY 114: Stars, Galaxies, and Cosmology Laboratory
Spring 2012 Syllabus
Room: PS 170



Contact Information:

Instructor: Sally Watt, M.S. Office: PS113 Phone: (623) 845-3386 E-mail: sara.watt@gcmail.maricopa.edu	Office Hours: Mon, Wed, Fri 11:00 AM – 12:00 PM Tues and Thurs 9:00 – 10:00 AM
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Course Description:

This course will provide you with an introduction to astronomy and science procedures even if you are not a science major.

Prerequisites/ Co-requisites:

The only course co-requisite for this class is AST 112: Introduction to Stars, Galaxies, and Cosmology.

Laboratory Manual:

Astronomy II Laboratory Manual, by Winters and Watt, September 2008.

Note: the manual will be distributed in the second week of class.

You must bring your *lab manual*, a *scientific calculator* and a *pencil* to lab every week!

Lab Schedule:

Date	Lab
Jan. 18	Planispheres
Jan. 25	Night Time Sky
Feb. 1	Project Planning
Feb. 8	Spectroscopy
Feb. 15	The Sun and the Solar Spectrum
Feb. 22	CCD Image Processing
Feb. 29	Apparent Magnitudes
Mar. 7	Stellar Motions / Absolute Magnitudes
Mar. 14	SPRING BREAK
Mar. 21	Binary Stars
Mar. 28	Photoelectric Photometry of the Pleiades
Apr. 4	Discovery of Nova 2012
Apr. 11	Cepheid Variables
Apr. 18	Hubble Redshift Distance Relation
Apr. 25	Distances to Galaxies
May 2	Project Presentations

Disabilities:

If you have a disability that may have some impact on your work in this class and for which you may require accommodations, please notify me and the Disability Services and Resources Office on the GCC campus located in room TDS 100 (Phone: 623.845.3080)

Grades:

Each lab will be worth 10 points for completing the lab in class. You must have the lab instructor's signature at the end of the class period to get credit for doing the lab. The following week will begin with a 10 point quiz on the previous lab within the first 5 minutes. If you are not here or are late or missed the previous lab, the quiz cannot be made up! Thus, each lab is worth a total of 20 points. The research project will be worth 100 points. The total points will be 370 points. The final grades will depend on your total points in the class. 90% of the points will result in an A for the course, 80% a B, 70% a C, etc.

Safety Considerations:

Arizona Statute ASRS15-151 specifies that every student, teacher, and visitor in public and private schools shall wear appropriate eye protective ware while participating in or when observing vocational, technical, industrial arts, art or laboratory science activities involving exposure to: molten metals or other molten materials, cutting, shaping and grinding of materials, heat treatment, tempering or kiln firing of any metal or other materials, welding fabrication processes, explosive materials, caustic solutions, radioactive materials.

Attendance:

It is your responsibility to be in class on time. If you aren't here in the first 15 minutes of class you have missed the instructions for the lab and cannot stay to complete it. Other than GCC approved activities, there will be no excused absences. I will not stay past the end of lab!

Withdrawal Policy:

A student may withdraw from the course by submitting a withdrawal form to the Admissions Office. All withdrawals must be done before the last day for students to withdraw, **April 20, 2012**.

Disciplinary Action:

All labs must only be completed in class! Any labs that are completed or partially completed prior to coming to class will be confiscated and you will not be given any points for the work on the first violation. Any subsequent violation will be met with disciplinary action. I consider this cheating!

Disciplinary actions may be imposed on student for misconduct or violation of law and/or college rules and policies. Students may be subject to the following: temporary exclusion, disciplinary probation, suspension or expulsion from class. The policies followed in disciplinary actions are outlined in the official Student Handbook. The relevant section can be viewed online at http://www.gc.maricopa.edu/catalog/student_rights.html. Every student is expected to know and comply with all current published policies, rules and regulations as printed in the college catalog, class schedule, and/or student handbook.

Course Objectives:

At the end of this course, you will be able to:

1. Apply the scientific method and other critical thinking models to astronomical phenomena for hypotheses development, experimental design, data acquisition and data analysis.
2. Demonstrate ability to follow directions in completing laboratory exercises.
3. Demonstrate ability to properly and safely use laboratory tools, e.g. Calculators, computers, rulers, telescopes, photometers, maps, etc. for data acquisition, data analysis or simulation.
4. Demonstrate ability to work effectively in collaborative groups.
5. Present accurate and meaningful project reports analyzing experiments, both qualitatively and quantitatively.

Research project:

You will be required to complete a research project of some sort demonstrating your understanding of the scientific method. Presentations will be **April 30 - May 2, 2012**. The presentation need only be 5 – 10 minutes long but must include all steps of the scientific method. We will spend the lab period **Jan. 30 - Feb. 1** to plan your projects. You **MUST** have your project approved by the next class meeting, **Feb 6 - Feb. 8!**