AST 108: Stars and Galaxies  
J-Term 2016 Syllabus; 3 Credits

Professor: Dr. D. Gobeille  
Office: East Hall 313

Office Hours: By Appointment  
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Lecture Times: Variable: T/W/R/F 4 - 8 PM


Syllabus Policy: This is the very first section of this syllabus because it is the most important. The answers to the vast majority of your questions and emails can be found here or on the Sakai page for this course. It is understood that by receiving this syllabus on the first day of class and having access to it via Sakai you will have read and be knowledgeable of all that it entails. It will be the responsibility of the student to be cognizant of this information.

Examinations: Arrive on campus early on test days. You will be tested upon all material included in class, discussions, observations, and in study questions. Documented excused absences will be dealt with on an individual basis.

An oral examination will be given in lieu of any missed exam.

Should you need to be absent from an examination for a non-emergency situation you will need to provide evidence of such at least one week prior to the exam.

Attendance Policy: Attendance in class will be checked via in class quizzes.

Students must be present for the duration of the class. Due to the brief nature of the J-Term, only one class can be missed without any excuse given.

Due to the nature of the course, students should attempt to attend all classes for maximum comprehension of the material. If you plan on missing a class, it is the responsibility of the student to get the notes and assignments from another student.

Religious Absence Policy: A student anticipating an absence from a test due to the observation of a religious observance (recognized by the university) must provide written notice to the instructor by the second class meeting.

School Absence Policy: A student who anticipates being absent from a test, due to participation in a University event (thus recognized by the university), must provide notice to the instructor, in writing, by the second class meeting.

Excuse Policy: Any excuse, given for any reason, should take place before a class, and not afterward. Excuses given after a class will rarely be considered. Further, no excuses pertaining to an unfamiliarity with the syllabus or information posted on Sakai will be accepted.

Exams: There will be two “mini-examinations” during the term, at the end of the 4th and 8th classes. Consider these as status checks to ensure that you are doing well in the course.

There will also be a final examination for the class which is cumulative in the knowledge gained throughout the class given shortly after our 8th and final class.

Quizzes: Brief quizzes will be given randomly in class to check progress. These quizzes will usually focus on the material at hand each day.

Course Materials: Students are expected to bring a notebook, pen/pencil, calculator, and their focused selves to every class. Calculators should be of the scientific variety and should be able to do exponentials. If students are required to bring other materials to class you will be informed ahead of time.

Students with Disabilities: Students in need of academic accommodations for a disability may consult with the office of Services for Students with Disabilities to arrange appropriate accommodations. Students are required to give reasonable notice (at least 10 working days) prior to requesting an accommodation.

Incomplete Grades: An “I” grade may be awarded to an undergraduate student only when a small portion of the student’s assessment is incomplete and only when the student is otherwise earning a passing grade.
Notes and Tapes: Lectures may not be taped without the written consent of the instructor. Notes and tapes are not permitted for purposes of sale and are only permitted for personal use.

Tests and Grading: The breakdown for individual contributions to your grade is listed below. The course final will be cumulative through the entire semester. Your grade will be given on the basis of: 100 – 97% = A+, 96 – 94% = A, 93 – 90% = A-, 89 – 87% = B+, 86 – 84% = B, 83 – 80% = B-, 79 – 77% = C+, 76 – 74% = C, 73 – 70% = C-, < 70% = F.

* Quizzes = 20%
* Observations = 20%
* Mini-exams = 20% each
* Final Exam = 20%

AST 108 Observations, Laboratories, and Planetarium: During the course of the term, field observations will be made to help familiarize you with the night sky and the use of optical telescopes.

There will be four graded observing runs during the course. Each will be based on where we currently are in the term and what celestial objects are available to us.

Course Expectations: Success in a science class can be broken down into several primary components. First and foremost all students are expected to participate fully in the class. Students are further expected to pose and answer questions on an active basis. The key to learning about the physical world is to question everything, including what you believe to be true.

AST 108 is an introduction and overview of cosmology, stars, and galaxies. It is designed to complement AST 118 to give a comprehensive overview of the science of Astronomy. We will cover a range of topics which have been divided into sections listed below.

General Education Areas: This course satisfies URI’s general education areas: “Scientific, Technology, Engineering, and Mathematical Disciplines” (Full); and “Mathematical, Statistical, or Computational Strategies” (Full).

Learning Outcomes:

1: The student will know and understand the astronomical topics presented in the course: Modern telescopes and observatories, properties of the Sun and other stars, large scale structure of the Universe.

2: Students will be introduced to the tools and methods that astronomers use as scientists to discover and learn about the universe around them.

3: Students will be able to correctly interpret spectrographs and light curves of celestial objects.

4: Students will understand how algebraic expressions are used to describe physical systems such as the stars and galaxies.

5: Students will be actively engaged in the learning process through class participation, lecture demonstration, project work and peer interaction.

6: At the completion of this unit students should:
   i: Be able to interpret spectrographs correctly and identify composition and radial velocity of celestial objects.
   ii: Be able to explain the physical processes occurring in the Sun and be able to explain solar evolution.
   iii: Be able to explain astronomical principles related to the workings of stars and galaxies
   iv: Be able to calculate the physical parameters of stars objects such as luminosity, distance and magnitude

7: The student will learn to extend and unify basic physical concepts in order to analyze astrophysical scenarios.

8: In doing so, the student will amalgamate basic physical concepts into larger more robust ideas, yielding depth of understanding in more complicated physical situations.

9: The student will conquer mathematical hurdles and learn to utilize so called “back of the envelope” calculations to quantify physical concepts.

10: The student will use the above to adroitly navigate through both simple and complex physical phenomenon related to the the above astrophysical concepts.

11: The student will leave with a solid understanding of the underpinnings of the above astrophysical concepts.
Rubric for Success in this Course:

1: Attend all lectures and be thoughtfully engaged at all times.

2: Work through all study questions.

3: Fully understand all study questions.

4: Conceptual understanding will reap tremendous results in this course. Memorization will not.

5: Seek help when you cannot complete homework questions or understand course content.

6: Help comes in many forms:
   a: Coming to my office hours, times listed above.
   b: Nicholas Bianchi is the TA for this course. You can reach him via email at nicholasbianchi my.uri.edu. His hours are posted outside of the graduate lounge on the second floor of East Hall.
   c: Working in student groups. Group work in class is always encouraged. Student groups should not be too large in order to maximize productivity. The only caveat to group work is that you be able to understand and explain all concepts independent of the group.