

**AS 202 - Principles of Astronomy I**  
**Course Syllabus - Fall 2014**  
<http://people.bu.edu/philipm/teaching.html>

**Course Goals:**

- Provide an introduction to modern astronomy and astrophysics:
  - The night sky, the solar system, Sun, Earth, planets, moons, asteroids/comets, minor planets, extrasolar planets.
- Learn college-level habits for pursuing a science major at BU:
  - Good habits for working with esoteric units, jargon, astronomically large and astronomically small numbers.
  - Obtaining fundamental understanding of the material, rather than simply memorizing and reciting facts.
- Prepare you for deeper studies in higher-level courses.
  - You will not be expected to use calculus to solve homework or exam problems, but we will introduce some elements (e.g. a “rate”) to prepare you for the merging of astronomy, physics and/or geophysics with calculus, which happens in higher level science courses.

**Lectures**

MWF 11-12 CAS 502

**Day Laboratories**

A2: M 5-6:30 CAS 521

A3: T 5-6:30 CAS 521

A4: W 5-6:30 CAS 521

**Night Laboratories**

There will also be night labs on the roof of CAS on the same night as your day lab. These can stray from the schedule due to weather considerations. We will announce whether night labs are taking place at the end of your day lab.

**Corequisite:**

MA 123 - Calculus I

**Instructor**

Prof. Philip Muirhead

Email: [philipm@bu.edu](mailto:philipm@bu.edu)

Office Hours: Mon & Tues 2-3:30pm 403 CAS

**Teaching Fellows:**

Mr. Phillip Phipps. Email: [pPhillips@bu.edu](mailto:pPhillips@bu.edu). Office Hours: Tues 4-5, Wed 1-2, Th 2-3, 524 CAS

Mr. Mark Veyette. Email: [mveyette@bu.edu](mailto:mveyette@bu.edu). Office Hours: Mon & Tues 1-2, Wed 4-5, 524 CAS

**Student Code of Conduct**

Please review the Student Code of Conduct: <http://www.bu.edu/academics/policies/academic-conduct-code/>

Any students found in violation of the student code of conduct will be referred to the CAS Academic Conduct Committee.

## **Policy on Student Absence for Religious Observance**

<http://www.bu.edu/chapel/files/2011/10/ReligiousObservance.pdf>

## **Required Books**

Foundations of Astrophysics (FoA) by Barbara Ryden & Bradley M. Peterson.

This is a relatively advanced text for the scope of this course, and we will only cover specific sections.

Homework problems will be out of this book.

A Student's Guide to the Mathematics of Astronomy (MoA) by Daniel Fleisch & Julia Kregenow. We will use this book to cover basic mathematical concepts in astronomy and to develop good college-level scientific habits. All of the book problems have hints and full solutions available online here:

<http://www4.wittenberg.edu/sgmoa/>

## **Optional Book**

If students would like additional material, I suggest acquiring a copy of The Cosmic Perspective by Jeffrey Bennett, Megan Donahue, Nicholas Schneider and Mark Voit. Cosmic Perspective is the book we use for AS 101 for non-science-majors, and contains a more gentle introduction to astronomy topics. Used, early editions (6th edition or earlier) are available on Amazon for a few dollars.

## **Homework - 25% of your grade**

Problem sets are assigned on Wednesdays and are due the following Wednesday at the beginning of class (late homework will be assigned a grade of zero). I encourage students to work together if they find that it helps them understand the problems; however, students should tackle the problems on their own before meeting in groups, and all work shown should be the student's own. Mastering the homework problems is essential to performing well on the exams. We will drop your problem set with the lowest score, attendance at the Museum of Science planetarium show will count as extra credit on the homework. The problem sets will be posted online at <http://people.bu.edu/philipm/teaching.html>

## **Exams - 45 % of your grade**

There will be three midterm exams and one final exam. There will be no make-up exams. Instead of a make-up policy, we will drop the midterm exam with the lowest score and only two will count toward your grade. Each midterm will be worth 15% of your grade. The midterms will be held during class on Wednesday Oct 1, Wednesday Nov 5, and Friday Dec 5. The final will be held on Monday, December 15 in 522 CAS, and is worth 15% of your grade. The exam problems will be similar to the homework problems.

## **Labs - 30% of your grade**

**(Day labs - 20%, Night labs - 10%)**

AS 202 includes a lab component. Labs are split into day labs and night labs. Day labs are held on MTW in Room 521 from 5pm until 6:30pm. In the event of good weather, there will be a night lab beginning at sunset (7:30pm at the start of the semester) and continuing for several hours on the same day as your day lab. The TFs will decide whether a night lab is taking place or not and inform the class at the end of the day lab.