Astronomy 10:

Introduction to Astronomy

Astronomy is an exciting and cutting-edge physical science concerned with understanding everything from the origins of Earth to the fate of the universe. In this class we will survey the universe and just about all the stuff in it (No small feat for a one semester course!). In doing so, you will become not only conversant in topics of modern astronomy but an active observer of (and thinker about) the universe. This is a “hands on” course, where you’ll work through challenging questions, conduct a “lab experiment,” and actually look through telescopes. While memorization of material is an inevitable requirement to some degree, problem sets and exams will stress understanding and application of tools you will learn in this class.

Course website: Log in with your CalNet ID to http://bspace.berkeley.edu. If you are registered for the class, you will see a tab for the class website in your bspace homepage. There is a discussion board, a calendar for the course, and a posting site for all course handouts. This will be the definitive location for course announcements and problem set postings.

Text: Astronomy Today, 6th Edition, Chaisson and McMillian. There are several copies of the text on 2 hour reserve at the Physics and Astronomy library (Hearst Field Annex; Building B).

Course Lectures: Tuesdays & Thursdays 11am - 12:30pm, Evans 10. You are expected attend all lectures in person.

Instructors:

Josh Bloom  
*Course professor & lecturer*  
Office: Campbell 447, Hours: Tues 12:30 - 2pm  
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### Course Syllabus:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Dates</th>
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<tbody>
<tr>
<td>1</td>
<td>Cosmic Orientation</td>
<td>28, 30 Aug</td>
</tr>
<tr>
<td>2</td>
<td>Waves &amp; Radiation in Space</td>
<td>4, 6, 11 Sep</td>
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<tr>
<td>3-4</td>
<td>Observing the Universe</td>
<td>13, 18 Sep</td>
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<tr>
<td>4-5</td>
<td>Earth-Sun-Moon System</td>
<td>20, 25 Sep</td>
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<tr>
<td>6</td>
<td>The Solar System</td>
<td>27 Sep, 2 Oct</td>
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<tr>
<td></td>
<td>Midterm I</td>
<td>(Oct 4)</td>
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<td>7</td>
<td>Stars &amp; Star Formation</td>
<td>9, 11 Oct</td>
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<td>8</td>
<td>Fate of Stars</td>
<td>16, 17 Oct</td>
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<td>9</td>
<td>Brown Dwarfs and Stellar Explosions</td>
<td>23, 25 Oct</td>
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<tr>
<td>10</td>
<td>Neutron Stars and Black Holes</td>
<td>30 Oct, 1 Nov</td>
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<tr>
<td>11</td>
<td>Our Galaxy</td>
<td>6 Nov</td>
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<tr>
<td></td>
<td>Midterm II</td>
<td>(Nov 8)</td>
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<tr>
<td>12</td>
<td>Galaxies</td>
<td>13 Nov</td>
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<tr>
<td>12-13</td>
<td>Clusters and the Growth of Structure</td>
<td>15, 20 Nov</td>
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<td></td>
<td>Thanksgiving</td>
<td>(Nov 22)</td>
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<tr>
<td>14</td>
<td>Big Bang</td>
<td>27, 29 Nov, 4 Dec</td>
</tr>
<tr>
<td>15</td>
<td>Life in the Universe and the Ultimate Fate</td>
<td>6 Dec</td>
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**Readings:** To be assigned on a week by week basis at the start of lecture.

**Grading Policy:**

- **Final Exam:** 30% [Dec 15; 5pm]
- **Midterms I and II:** 11% each [Oct 4; Nov 8]
- **Participation:** 9% total
  - This includes attendance and participation in section and attendance at 1 star party
- **Assignments (Problem Sets & Lab):** 39%
The best way to prepare for exams is to attend lectures, complete the problem sets and participate in section discussions. The final exam, while covering all the material from the course, will be focused more on the last third of the class material after the second midterm.

**Missed Exams**: If you know that, for legitimate reasons, you cannot be present for a midterm or the final you must let the head GSI know immediately, AT LEAST 3 weeks in advance. We will try to find an alternative testing time & date for you. If you fail you to inform us with sufficient notice you will be responsible for taking the exam along with the other students.

**Late Assignments**: The due date for problem sets is Thursday at 11am in the basement of Campbell Hall in the labeled boxes or in class *before the start of lecture* on Thursday. Please put your homework with the correct section! The boxes in Campbell will say **Ay 10 - Bloom** and will be labeled with your section number, the time and day of the week of your section, and your GSI's name. In class the boxes will have your section number. **There will be no credit for late submission of assignments.** Sometimes it’s impossible to keep up with all your classwork, so everyone will have their lowest problem set grade dropped when we figure the assignments portion of your total grade at the end of the class.

The final distribution of letter grades will be determined “on a curve”; that is, relative versus absolute.

**Academic Integrity**

You are asked to read and abide by the "Department of Astronomy Policy on Academic Misconduct" (http://astro.berkeley.edu/academics/cheating.html). You are bound by these principles.

Any test, problem set or lab report submitted by you and that bears your name is presumed to be your own original work. You may not simply copy the work of another student. To be clear, you are encouraged to work with and learn from your peers -- this often means working in study groups on problem sets -- but you must demonstrate your own comprehension of the problems and the solutions in the work you turn in.

In all of your assignments, including your homework, you may use words or ideas written by other individuals in publications, web sites, or other sources, but only with proper attribution. "Proper attribution" means that you have fully identified the original source and extent of your use of the words or ideas of others that you reproduce in your work for this course, usually in the form of a footnote or parenthesis.

If you are not clear about the expectations for completing an assignment or taking a test or
examination, be sure to seek clarification from your instructor or GSI beforehand. Finally, you should keep in mind that as a member of the campus community, you are expected to demonstrate integrity in all of your academic endeavors and will be evaluated on your own merits. So be proud of your academic accomplishments and help to protect and promote academic integrity at Berkeley. The consequences of cheating and academic dishonesty—including a formal discipline file, possible loss of future internship, scholarship, or employment opportunities, and denial of admission to graduate school—are simply not worth it.

Student Announcements

We will allow no more than one student announcement per class (limited to 2 minutes), on a first come first served basis, and must be cleared with Prof. Bloom before the start of lecture.

AY 10: Introduction to Astronomy (Fall 2007; TTh 11-12:30, Evans 10)