

## **AST 105: Introduction to the Solar System Fall 2021**

### **Instructor**

Prof. Kenneth M. Lanzetta  
ESS 456  
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### **Course Description**

A general survey of present knowledge of the planets, satellites, interplanetary medium, comets, asteroids, and outer regions of the Sun. Begins with a historical introduction and discussion of the methods of science. Emphasizes current NASA deep-space exploration missions and other modern astronomical methods. Not for major credit. Not for credit in addition to AST 205 or GEO 106.

### **Class Meeting**

Class meetings will be held TuTh 9:45–11:05 in Light Engineering 102.

### **Text**

The required text for the course is *The Cosmic Perspective: The Solar System (9th Ed.)* by J. Bennett et al. (Pearson). Note that the 8th, 7th, or 6th edition texts are also suitable, although there may be differences in details. *Also note that exams and quizzes will be based on the assigned reading.*

### **Office Hours**

Office hours will be held online via Zoom by appointment.

### **Teaching Assistant**

There is a graduate student teaching assistant assigned to the course: Soumendra Kisho Roy. Soumendra's contact information is as follows:

Soumendra Kisho Roy  
SoumendraKisho.Roy@stonybrook.edu  
Office hours: Office hours will be held online via Zoom by appointment.

### **Assigned Reading**

Each lecture cover a chapter or a portion of a chapter of the text; this chapter is the assigned reading. Reading assignments are to be completed *before* the corresponding lecture. Exams and quizzes will be based largely the assigned reading.

### **Quizzes**

There will be 13 quizzes over the course of the semester. Quizzes will be based on the assigned reading. *Note that quizzes may be administered on Tuesday or Thursday at the beginning or end of class. Also note that there will be no way to make up missed quizzes.* For each student, the

lowest two quiz scores across the semester will be dropped when determining the quiz average, so the quiz average will be based on the highest 11 (of 13) quiz scores.

### Exams

There will be two mid-term exams over the course of the semester and a final exam at the end of the semester. No electronic devices (calculators, cell phones, etc.) may be used during the exams, and no notes or books may be consulted during the exams. Students must arrive on time for the exams with their student ID cards. Students who arrive late for an exam will not be given extra time. *Note that there will be no way to make up missed exams*, although with advanced notice or careful documentation of extenuating circumstances, a missed exam may be excused or other accommodations made. The schedule of exams is presented in the “Course Schedule” below.

### Final Exam

According to the University registrar, the final exam is currently scheduled for Tuesday, December 14, 2021 from 8:00 AM to 10:45 AM. In the event of a discrepancy between what is listed here and what is listed by the registrar, what is listed by the registrar will take precedence. The final exam will be cumulative. *Note that students are required to take the final exam, and there will be no way to make up a missed final exam.*

### Course Grade

The course grade will be based on two mid-term exams (25% each), the final exam (30%), and the quizzes (20%).

### Extra Credit

There will be no possibility of extra credit.

### Course Schedule

| Class | Date | Chapter | Topic   |
|-------|------|---------|---|
| 1     | 8/24 | 1       | A Modern View of the Universe   |
| 2     | 8/26 | 2       | Discovering the Universe for Yourself                                   |
| 3     | 8/31 | 3       | The Science of Astronomy  |
| 4     | 9/2  | 3       | The Science of Astronomy  |
| 5     | 9/7  | S1      | Celestial Timekeeping and Navigation                                    |
| 6     | 9/9  | S1      | Celestial Timekeeping and Navigation                                    |
| 7     | 9/14 | 4       | Making Sense of the Universe: Understanding Motion, Energy, and Gravity |
| 8     | 9/16 | 4       | Making Sense of the Universe: Understanding Motion, Energy, and Gravity |

| <b>Class</b> | <b>Date</b> | <b>Chapter</b> | <b>Topic</b>  |
|--------------|-------------|----------------|---|
| 9            | 9/21        | 5              | Light and Matter: Reading Messages from the Cosmos                      |
| 10           | 9/23        | 5              | Light and Matter: Reading Messages from the Cosmos                      |
| 11           | 9/28        |                | Midterm 1: Chapters 1–5, S1   |
| 12           | 9/30        | 7              | Our Planetary System  |
| 13           | 10/5        | 7              | Our Planetary System  |
| 14           | 10/7        | 8              | Formation of the Solar System   |
|              | 10/12       |                | No class  |
| 15           | 10/14       | 8              | Formation of the Solar System   |
| 16           | 10/19       | 9              | Planetary Geology: Earth and the Other Terrestrial Worlds               |
| 17           | 10/21       | 9              | Planetary Geology: Earth and the Other Terrestrial Worlds               |
| 18           | 10/26       | 10             | Planetary Atmospheres: Earth and the Other Terrestrial Worlds           |
| 19           | 10/28       | 10             | Planetary Atmospheres: Earth and the Other Terrestrial Worlds           |
| 20           | 11/2        |                | Midterm 2: Chapters 7–10  |
| 21           | 11/4        | 11             | Jovian Planet Systems   |
| 22           | 11/9        | 11             | Jovian Planet Systems   |
| 23           | 11/11       | 12             | Asteroids, Comets, and Dwarf Planets: Their Nature, Orbits, and Impacts |
| 24           | 11/16       | 12             | Asteroids, Comets, and Dwarf Planets: Their Nature, Orbits, and Impacts |
| 25           | 11/18       | 13             | Other Planetary Systems: The New Science of Distant Worlds              |
| 26           | 11/23       | 13             | Other Planetary Systems: The New Science of Distant Worlds              |

| Class | Date  | Chapter | Topic                |
|-------|-------|---------|----------------------|
|       | 11/25 |         | No class             |
| 27    | 11/30 | 24      | Life in the Universe |
| 28    | 12/2  | 24      | Life in the Universe |

### **Americans with Disabilities Act**

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact Disability Support Services, ECC Building, Room 128, 631-632-6748. They will determine what accommodations, if any, are necessary and appropriate. All information and documentation is confidential.

### **Academic Integrity**

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology and Management, Nursing, Social Welfare, and Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary web site at <http://www.stonybrook.edu/uaa/academicjudiciary/>.

### **Critical Incident Management**

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Health Sciences Center (School of Health Technology and Management, Nursing, Social Welfare, and Dental Medicine) and School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

### **Electronic Communication**

Email to your University email account is an important way of communicating with you for this course. For most students, the email address is `firstname.lastname@stonybrook.edu`. *It is your responsibility to read your email received at this account.* For instructions about how to verify your University email address, see

<http://it.stonybrook.edu/help/kb/checking-or-changing-your-mail-forwarding-address-in-the-epo>.

You can set up email forwarding using instructions described at

<http://it.stonybrook.edu/help/kb/setting-up-mail-forwarding-in-google-mail>.

If you choose to forward your University email to another account, we are not responsible for any undeliverable messages.

### **Religious Observances**

See the policy statement regarding religious holidays at

<http://www.stonybrook.edu/registrar/forms/RelHolPol\%20081612\%20cr.pdf>.

Students are expected to notify the course professors by email of their intention to take time out for religious observance. This should be done as soon as possible but definitely before the end of the add/drop period. At that time, they can discuss with the instructors how they will be able to make up the work covered.