



Department of Physics and Astronomy  
Online Syllabus

**Important Note:** Every effort will be made to avoid changing the course schedule, but the possibility exists that unforeseen events will make syllabus changes necessary. It is your responsibility to check Brightspace for corrections or updates to the syllabus. Any changes will be clearly noted in course announcements or through Stony Brook email.

### Part 1: Course Information

**Course title:** Introduction to Planetary Sciences

**Course catalog # and section:** AST 205 (STEM+)

**Credit hours:** 3

**Semester:** Fall 2024

**Location:** Frey Hall 313

**General education designation(s) (SBC)** (*undergraduate only*):

**Prerequisites:** PHY 125 or 131/133 or 141.

**Instructor name:** Rosalba Perna

**Instructor's Stony Brook email, phone number**

[rosalba.perna@stonybrook.edu](mailto:rosalba.perna@stonybrook.edu), 631-632 1558

**Office hours:** Tue 5pm-6:15pm and Thu 12:30pm-1:45pm (ESS461) or online by appointment

#### Course Description:

An introduction to the solar system for the student with a background in mathematics or physical sciences. A survey of the planets, comets, asteroids, and interplanetary medium, based upon the latest scientific discoveries.

#### Recommended Readings/Bibliography:



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The two recommended textbooks are [\*Planets and Planetary Systems\*](#) by Stephen Eales and [\*The Cosmic Perspective\*](#), by Bennett, Donahue, Schneider and Voit. Neither of them needs to be the latest edition.

## **How we will communicate/share course resources and material**

Important announcements will be sent via email/Brightspace.  
Homework and solution sets will be posted on Brightspace.

The course webpage:

<https://www.astro.sunysb.edu/rosalba/ast205/ast205home.html>

under “Timetable”:

<https://www.astro.sunysb.edu/rosalba/ast205/ast205timetable.html>

will indicate:

- Reading after each class
- Lecture notes after each class and summary of material covered on each class
- Reminders of in-class exams

Please feel free to contact me via e-mail for any question related to the course material, homeworks, exams. I will do my best to reply within 24 hours during weekdays.

For questions related to grading and grade posting in Brightspace, please e-mail Soumendra:

[SoumendraKisho.Roy@stonybrook.edu](mailto:SoumendraKisho.Roy@stonybrook.edu)

### **Technical Assistance:**

If you need technical assistance at any time during the course or to report a problem with Brightspace you can, please visit

<https://it.stonybrook.edu/services/brightspace>

## **Part 2: Course Learning Objectives and Assessments**

Upon completion of the course, students will have a global understanding of our Solar System, how it was formed, and its place within a larger scale. They will also learn the history of the

science which led to our current knowledge. While working in groups towards solving class assignments, students will experience the collaborative nature of science, especially today.

**How to Succeed in this Course:**

- Complete all assigned readings in the course
- Attend the lectures
- Do not miss any of the tests and other assignments.

**Part 3: Course Schedule by Topic**

The topics discussed in this class are listed in the following, in the order in which they will be taught:

Overview/Basic Definitions

Basic Observations

History of Astronomy

Kepler's Laws

Moon and Tides

Concepts from Astrophysics/Albedos

The Sun

The Solar System

Terrestrial Planet Surfaces

Mars

Planetary Interiors

Planetary Atmospheres

Rings and Moons

Asteroids, Comets, the Kuiper Belt & Pluto

Solar System Formation

Exoplanets

Life

(Depending on how the course progresses, we may add or subtract from these topics)

<b>Part 4: Assessment and Grading</b>
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**Viewing Grades on Brightspace:** Points and feedback for graded activities will be posted to Brightspace. The goal is to have grades for each assessed activity within a week.

In this course, you will be assessed based on the following:

Activity/Assignment	Percentage	When
Clicker questions	5%	On most classes
Homework	30%	5-7 throughout the semester
1 randomly selected among the in-class group projects	5%	4-6 times during the semester
3 midterms	15% each (45% total)	Each after roughly 1/3 of semester
Final Exam	15%	December 12, 2024 11:15am-1:45pm
Total	100%	

More details on each of the above assessments/graded activities:

[Clicker Questions](#)

Occasionally during class I will ask questions to get you to think carefully about some of the concepts we have covered. These are multiple choice questions, and the answer will be provided via the Turning Technology poll system. Each student will need to download their App: <https://www.turningtechnologies.com/>

The lowest 2 scores (by day) will be removed to account for possibly missed class days.

Clicker questions:

- Improve your grade
- Give YOU immediate feedback regarding what you do and do not understand

- Give ME immediate feedback on a concept not clear to the class
- Greatly improve class participation and attention

Points will be assigned as follows:

- Correct answer: 2 points
- Wrong answer: 1 point
- No answer: 0 point

### Homework

Home assignments will be handed out at regular intervals during the semester, and will mostly cover the material in the previous weeks. Note that they do not carry the same weight. Grading will be based on the cumulative points accumulated on all the questions from all the homework.

### Groups Projects

These will have both qualitative and quantitative questions and will cover mostly material in the previous 2-3 classes. Students will work in groups of 3, randomly selected. They will be held every 2-3 classes, in the last 20-30 minutes of class. At the end of the course, one of those study group reports will be randomly selected for grading and will count for 5% of the grade. If a student missed that report, another one will be randomly selected for the grading.

### Midterms

Each of the three midterms will cover the previous course material (or since the previous midterm). They will be administered each after roughly 1/3 of the course.

### Final Exam

The final exam will cover the entire course.

### Extra Credit

Students may pick up a “current astronomy event” related to this course and present a 5-6 slides/7-8 minutes summary at the start of one of the classes. Up to 2/100 points. One opportunity per student.

**University Policies:****Student Accessibility Support Center Statement:**

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, 128 ECC Building, (631) 632-6748, or at [sasc@stonybrook.edu](mailto:sasc@stonybrook.edu). They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: <https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-people-physical-disabilities> and search Fire Safety and Evacuation and Disabilities.

**Academic Integrity Statement:**

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 is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, 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 website at [http://www.stonybrook.edu/commcms/academic\\_integrity/index.html](http://www.stonybrook.edu/commcms/academic_integrity/index.html)

**Important Note:** Any form of academic dishonesty, including cheating and plagiarism, will be reported to the Academic Judiciary.

**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. Faculty in the HSC Schools and the 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.

**Course Policies:****Understand When You May Drop This Course:**

It is the student's responsibility to understand when they need to consider withdrawing from a course. Refer to the Stony Brook Academic Schedule for dates and deadlines for registration: [http://www.stonybrook.edu/commcms/registrar/calendars/academic\\_calendars](http://www.stonybrook.edu/commcms/registrar/calendars/academic_calendars).

- [Undergraduate Course Load and Course Withdrawal Policy](#)

- [Graduate Course Changes Policy](#)

**Incomplete Policy:**

Under emergency/special circumstances, students may petition for an incomplete grade. Circumstances must be documented and significant enough to merit an incomplete. If you need to request an incomplete for this course, contact me for approval as far in advance as possible.

**Course Materials and Copyright Statement:**

Course material accessed from Brightspace, or a Stony Brook Course website is for the exclusive use of students who are currently enrolled in the course. Content from these systems cannot be reused or distributed without written permission of the instructor and/or the copyright holder. Duplication of materials protected by copyright, without permission of the copyright holder is a violation of the Federal copyright law, as well as a violation of Stony Brook's Academic Integrity.

**Online Communication Guidelines and Learning Resources:**

Maintain professional conduct both in the classroom and online. The classroom is a professional environment where academic debate and learning take place. I will make every effort to make this environment safe for you to share your opinions, ideas, and beliefs. In return, you are expected to respect the opinions, ideas, and beliefs of other students—both in the face-to-face classroom and online communication. Students have the right and privilege to learn in the class, free from harassment and disruption. The course follows the standards set in the Student Code of Conduct, and students are subject to disciplinary action for violation of that code. If your behavior does not follow the course etiquette standards stated below, the grade you receive for a posting may suffer. I reserve the right to remove any discussion messages that display inappropriate language or content.

**Online Etiquette:**

- Offensive language or rudeness will not be tolerated. Discuss ideas, not the person.
- Avoid cluttering your messages with excessive emphasis (stars, arrows, exclamations).
- If you are responding to a message, include the relevant part of the original message in your reply, or refer to the original post to avoid confusion;
- Be specific and clear, especially when asking questions.
- Use standard punctuation and capitalization. Using all UPPERCASE characters gives the appearance of shouting and makes the message less legible;
- Remember that not all readers have English as their native language, so make allowances for possible misunderstandings and unintended discourtesies.

Academic and Major Advising (*undergraduate only*): Have questions about choosing the right course? Contact an advisor today. Phone and emails vary-please see website for additional contact information; website: <https://www.stonybrook.edu/for-students/academic-advising/>

Academic Success and Tutoring Center (*undergraduate only*):  
<https://www.stonybrook.edu/tutoring/>

Amazon @ Stony Brook: Order your books before classes begin. Phone: 631-632-9828; email: Bookstore\_Liaison@stonybrook.edu; website: <http://www.stonybrook.edu/bookstore/>

Bursar: For help with billing and payment. Phone: 631-632-9316; email: bursar@stonybrook.edu; website: <http://www.stonybrook.edu/bursar/>

Career Center: The Career Center's mission is to support the academic mission of Stony Brook University by educating students about the career decision-making process, helping them plan and attain their career goals, and assisting with their smooth transition to the workplace or further education. Phone: 631-632-6810; email: sbucareercenter@stonybrook.edu; website: <http://www.stonybrook.edu/career-center/>

Counseling and Psychological Services: CAPS staff are available by phone, day or night.  
<http://studentaffairs.stonybrook.edu/caps/>

Ombuds Office: The Stony Brook University Ombuds Office provides an alternative channel for confidential, impartial, independent and informal dispute resolution services for the entire University community. We provide a safe place to voice your concerns and explore options for productive conflict management and resolution. The Ombuds Office is a source of confidential advice and information about University policies and procedures and helps individuals and groups address university-related conflicts and concerns. <http://www.stonybrook.edu/ombuds/>

Registrar: Having a registration issue? Let them know. Phone: 631-632-6175; email: registrar\_office@stonybrook.edu; <http://www.stonybrook.edu/registrar/>

SBU Libraries: access to and help in using databases, ebooks, and other sources for your research.

- Research Guides and Tutorials: <http://guides.library.stonybrook.edu/>
- Getting Help: <https://library.stonybrook.edu/research/ask-a-librarian/>

Student Accessibility Support Center: Students in need of special accommodations should contact SASC. Phone: 631-632-6748; email: sasc@stonybrook.edu;  
<https://www.stonybrook.edu/sasc/>

Support for Online Learning: <https://www.stonybrook.edu/online/>

Writing Center: Students are able to schedule face-to-face and online appointments.  
<https://www.stonybrook.edu/writingcenter/>



**Course Number/Name**

**Semester**