

AST 105: General Information

Fall 2018

TuTh 10:00 - 11:20

Humanities 1003

Instructor: [Prof. Frederick M. Walter](#) (ESS 459; 632-8232; frederick.walter at stonybrook.edu)

Office Hours: most Mondays, Wednesdays and Fridays 9:00-10:00; or by appointment.

Teaching Assistant: TBD

Office Hours:

Office:

Astronomy 105 is an introduction to the solar system for non-science majors. We will cover the major aspects of modern astronomy and astrophysics relevant to planetary science, the Sun and its effects on the Earth, astrobiology, and other solar systems. An emphasis will be placed how the astronomer deduces the physical nature of the constituent parts of the solar system from observations, rather than from theory.

Prerequisites: None. This course is designed for the student with little or no training in science. We will use some mathematical reasoning, using algebra and trigonometry, and will introduce physical principles as they are needed.

Expectations: This is a rigorous science course at the college level. Students are expected to do all assigned readings prior to lecture, and to participate in class. Students should expect to spend 6-9 hours per week outside of class reading the material and doing the homework. Astronomy is a quantitative science; students in this course will be expected to be able to solve problems and answer quantitative questions.

Learning Objectives: Mastery of this course does not mean remembering facts. It means knowing how to think scientifically. A student who masters Astronomy will

be able to think critically about data (observations), and synthesize disparate facts to reach a conclusion in almost any area where the data can be quantified. More specifics can be found [here](#).

If passed, this course satisfies DEC E or SBC "study the natural world" requirements.

Course Description : This is a lecture course.

The text was last updated in 2016. Although we will use the on-line text, we will not follow it exactly. Students are strongly urged to attend the lectures. Astronomy is advancing far more rapidly than any printed text can keep up with, and we will use the latest results from the Hubble Space Telescope and various planetary science missions (including the New Horizons mission to Pluto) in this class. Students are responsible for all the material presented in lecture and in the assigned readings. Lecture synopses will be posted on this site, but these are not lecture notes, and do not substitute for the assigned readings.

Observing Sessions: We will have occasional optional observing sessions using the 14" telescope on the roof of the ESS building. Observing sessions will be announced in class and [here](#).

Other sources of information Students are encouraged to use the world-wide-web to explore topics covered in this course, but the web must be explored with caution. I've compiled a list of some [reputable astronomical web sites](#) here.

Textbook: This semester we will be using a free, open-source textbook. *Astronomy*, from Open Stax, is available at [this site](#). This book is required reading. There is a [student guide to using the textbook](#) available. You can read the text on-line, download the pdf, or even buy a print copy if you so desire.

In previous semesters we have used *The Cosmic Perspective: The Solar System* by J. Bennett, M. Donahue, N. Schneider, and M. Voit, published by Addison Wesley Pearson. This, or the full length version used in AST 101 in the past, provide good background, should you want a different perspective.

Grading : Grades will be based on:

- **Two midterm examinations.** Midterms will be given in class on Thursday September 20 and Thursday October 18. The midterms are each worth 20% of

your grade.

- A cumulative **final examination**, worth 20% of your grade. The final will be on Thursday **December 20** from 8:00 to 10:45 AM.
- **Quizzes**. There will be about 10 quizzes, one per week, except for the weeks of the midterm examinations and the last week. The lowest two quiz grades will be dropped. The quizzes will account for 10% of your grade. Quizzes will be based on the lecture material and the assigned readings for that week, including assigned homework problems.
- **Practical observing activities** will account for 20% of your grade. These are due **in class** on November 6 (part I) and December 6 (parts II and III); activities handed in late will not be graded.
- An investigation of the **role of Astronomy in Culture**, worth 10% of your grade. This project is due in class on Tuesday November 20.

The test and quiz scores (70% of your grade) will be curved such that the top grade is 100% and the median is the greater of 70% or the actual grade. The 30% of your grade that comes from the observational activities and role of Astronomy in Culture essay is not curved. The raw and curved grades will be available on the web.

Lecture Decorum:

Students attending lectures are asked to exhibit common courtesy.

- If you arrive early, please take a seat near the center of the lecture hall. Otherwise late-coming students will be forced to crawl over you.
- Please do not arrive late. This is discourteous and disruptive, and you may miss important announcements.
- Please do not leave early. This is discourteous and disruptive.
- Please do not carry on conversations with your friends during lecture.
- Please turn off cell phones and pagers during lecture. If you must use the phone, please leave the room.
- It has been shown that taking notes on paper leads to greater retention than typing notes on your laptop/pad, and it reduces the temptation to browse the web.
- Students who are disruptive will be asked to leave.

Students are encouraged to ask questions at any time during the lectures. Lecture notes will not be available, although lecture synopses may be posted to the course

website. You are responsible for taking notes.

Attendance Policy :

Students who know in advance that they will miss a class or a test because of university-related activities (including athletics) or civic obligations (e.g., jury duty) should contact the instructor as soon as possible in advance of the date of absence. Students so-engaged, who inform the instructor **in advance**, will not be penalized, and will be allowed to make up any work missed.

If you choose to miss a test for personal reasons you will not be allowed to make it up.

Testing Policy :

Testing is an important way of assessing whether or not you are learning anything from this class. The exams are cumulative. All exams are closed-book. However, each student is allowed to bring one sheet of paper, no larger than 8 1/2 x 11 inches in size, containing whatever information the student deems useful, to the exams.

During an examination:

- All books and other material, except the one crib sheet described above, must be placed under your seat.
- No one is allowed to wear a cap with a bill.
- Sunglasses are not allowed.
- Headphones are not allowed.
- No electronic devices are allowed, including calculators, cell phones, and pagers.
- For your protection, do not sit near your friends during exams. Try to avoid even the appearance of impropriety.

No electronic devices of any kind are allowed during examinations. Cell phones and pagers must be turned off. Students who who disrupt the examination because of an audible phone or pager, or by answering a call, will be asked to leave and will have their exam confiscated. Students who may have a legitimate need to be on-call during an examination should discuss this with the instructor in advance.

Students are responsible for coming to the tests prepared. The instructor does not supply pens, pencils or answers. Tests should be completed in pen (any color except red).

Attendance policy for midterms and final: Students will not be permitted to leave for the first 30 minutes (midterms) or the first hour (final). No students will be admitted after anyone leaves.

Students should have a picture ID to present upon handing in their exams.

Students who leave a test or exam for whatever reason will not be allowed to return.

Makeup Policy : Midterm and final examinations may be made up only with a valid medical excuse and a doctor's note attesting that the student could not take the exam (a note merely showing a visit to the doctor's is not acceptable). Students seeking a makeup must contact the instructor as soon as possible.

Make-up policy for quizzes: In general quizzes cannot be made up, because the lowest two quizzes are dropped. Students who must miss quizzes *because of documented university-related activities or civic obligations* will be accommodated.

Requests for extra credit assignments will not be entertained.

Homework: Homework problems will be assigned weekly, but will be neither collected nor graded. Students will be responsible for the assigned homework on quizzes and tests.

Academic Dishonesty :

Students suspected of cheating in exams, of plagiarizing their writing assignments, or of any other form of academic dishonesty, will be assigned an F grade for the course and will be reported to the [academic judiciary](#).

Students who suspect others of cheating are encouraged to report them. Reports will be kept confidential. Dishonest students make things that much harder for the majority of students, who are honest.

Americans with Disabilities Act/ Student Accessibility Support Center Statement:

If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, If any, 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 Student Accessibility Support Center. For procedures and information go to [this website](http://www.stonybrook.edu/ehs/fire/disabilities) (<http://www.stonybrook.edu/ehs/fire/disabilities>).

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AST 105: Introduction to the Solar System

Syllabus

Fall 2018

Lecture: Tuesdays and Thursdays, 10:00 AM - 11:20 PM **Room:** Humanities 1003

Instructor: [Prof. Fred Walter](#) (ESS 459; 632-8232; frederick.walter at stonybrook.edu)

Office Hours: MWF 9-10, or by appointment

TA: TBD

Office Hours:

Syllabus revised 17 August 2018

Lecture Schedule

Week	Date	Topics	Reading
1	Aug 28 Aug 30	Introduction; Scales of Space and Time; The sky	1,4
2	Sep 6	The Beginnings of Astronomy	2, 4
3	Sep 11 Sep 13	Physics I: the Universe in Motion Physics II: Matter and Light	3, 4 5
4	Sep 18	My, what big eyes you have!	6
4	Sep 20	Midterm 1	Chapters 1 - 6
5	Sep 25 Sep 27	Overview of the Solar System The Sun	7 15, 16
6	Oct 2 Oct 4	The relation of the Sun to the Earth Formation of the Solar System	15.4 7.4, 14
7	Oct 9 Oct 11	The Earth The Moon	8 9
8	Oct 16	Terrestrial Planets	9, 10
8	Oct 18	Midterm 2	Chapters 7-10, 14-16 (plus 1-6)
9	Oct 23 Oct 25	Barsoom	10

10	Oct 30 Nov 1	Jovian Planets	11
11	Nov 6 Nov 8	Pluto The Icy Moons	12
12	Nov 13 Nov 15	Asteroids Other Debris	13
13	Nov 20	Exoplanets	17
14	Nov 27 Nov 29	Exoplanets	21
15	Dec 4 Dec 6	Life in the Universe	30
	Dec 20	Final Exam	1-17, 30

*** note: this plan is subject to change ***

Readings

Readings from the [textbook](#) should be done **BEFORE** the lecture. That way the lecture can be used to clarify, and not just introduce, concepts.

Numbers refer to chapters in the textbook.

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