

AST 203: Astronomy / Spring 2019

Instructor: Prof. Michael Zingale, ESS 452, michael.zingale@stonybrook.edu

Teaching Assistant: TBD

Class Meeting Time/Place: Tues. and Thurs., 11:30 am to 12:50 pm, location: Javits 103

Recitation Meeting Time/Place: Fri., 1:30 pm to 2:23 pm, location: Harriman 111

Fri., 2:30 pm to 3:23 pm, location: Harriman 111

Learning Outcomes

Students will use physics and calculus to study the stars, the interstellar medium, galaxies, and the Universe.

Prerequisite

PHY 125 or 131/133 or 141. It is very important that you have the necessary prerequisites—we will assume a knowledge of mechanics from your physics class. Any other material needed from physics will be introduced during the course. *As this is a 4 credit course, you should expect to spend 8-12 hours per week on this course.*

Course Website / Syllabus

The syllabus and all course material/class announcements will be available on the AST 203 Blackboard webpage.

Office Hours

Tues. 2:00 to 4:00 pm; *Thurs.* 2:00 to 3:00 pm

It is not possible to pick office hours that can accommodate the schedule of all students in this class. You are encouraged to contact the instructor to make an appointment outside of these times, or just come by the office.

Textbook

The required text is *Astronomy: A Physical Perspective, 2nd Ed.* by Kutner (Cambridge). This is at the appropriate mathematical level for our course. For a complimentary discussion of the course topics, the recommended text is *Cosmic Perspective: Stars, Galaxies, Universe* by Bennett et al. (Addison-Wesley). Any of the 4th through 8th editions will work.

Recitation

There is a weekly recitation associated with this course. The purpose of the recitation is to review the lecture material and practice problem solving. *All students are required to attend.*

Homework

There will be 9 homework assignments throughout the course (see the course schedule for due dates). Students will typically have 1 week to complete an assignment. While it is recognized that students sometimes work together and discuss the homeworks as part of the learning process, *what you turn in must be your own work. Copying will not be tolerated.*

Homeworks are due at the time/date listed on the assignment. Late homeworks received within 24 hours of the due date/time will be assessed a 20% penalty. *No late homeworks will be accepted after that 24-hour window.*

Homework grades will be posted to the Blackboard gradebook approximately 1 week after the due date, and the graded assignments will be returned in class. Students should report any errors/missing grades promptly. *The lowest homework score will be dropped* and the remainder will be averaged to compute your total homework percentage.

Observing Sessions

The monthly Astronomy Open Night series provides observing sessions throughout the semester.

Course Materials

The lecture notes used in class complement, but do not replace the course texts. *You are responsible for any information in the assigned readings that is not covered in the lectures. The course notes, homeworks, exams, and solutions are intended for AST 203 students only, and cannot be shared on third-party websites.*

Assigned Reading

Each lecture in the course schedule has chapter numbers listed next to it for both texts—this is your assigned reading. Students are expected to have read the assigned chapters in the required text before the corresponding lecture. Occasionally we will not cover a few sections in a chapter—this will be pointed out in class.

Course Schedule

#	month	day	Kutner Ch.	Bennett Ch.	topic	HW assigned	HW due		
1	Jan.	29	1	1–3	Organization/Radiation	–	–		
2	Jan.	31	2	5	Radiation	1	–		
–	Feb.	1	recitation 1						
3	Feb.	5	2	5	Radiation / Spectra	–	–		
4	Feb.	7	3,4	5,6	Spectral Lines / Telescopes	2	1		
–	Feb.	8	recitation 2						
5	Feb.	12	5	15.1	Binary Stars	–	–		
6	Feb.	14	snow day						
–	Feb.	15	recitation 3					–	2
7	Feb.	19	5	15.1 (& 3.3)	Binary Stars	3	–		
8	Feb.	21	6	14	The Sun	–	–		
–	Feb.	22	recitation 4						
9	Feb.	26	6	14	The Sun	–	3		
10	Feb.	28	Exam # 1; Kutner Ch. 1 to 5						
–	Mar.	1	recitation 5						
11	Mar.	5	9	14, S4	Main-Sequence & Stellar Structure	–	–		
12	Mar.	7	9, 10	14, S4, 17	Stellar Structure / Stellar Old Age	4	–		
–	Mar.	8	recitation 6						
13	Mar.	12	9, 10	14, S4, 17	Stellar Structure / Stellar Old Age	–	–		
14	Mar.	14	10	17	Stellar Old Age	–	4		
–	Mar.	15	recitation 7						
Spring Break									
15	Mar.	26	10	18	White Dwarfs	5	–		
16	Mar.	28	11	17	Type II Supernovae / Neutron Stars	–	–		
–	Mar.	29	recitation 8						
17	Apr.	2	11	18	Neutron Stars/Pulsars/Black Holes	6	5		
18	Apr.	4	12	18	Close Binaries / Type Ia Supernovae	–	–		
–	Apr.	5	recitation 9						
19	Apr.	9	13	15.3	Clusters of Stars	–	6		
20	Apr.	11	Exam # 2; Kutner Ch. 6, 9–12						
–	Apr.	12	recitation 10						
21	Apr.	16	14	19.2	Clusters/Interstellar Medium	–	–		
22	Apr.	18	14, 15	16	ISM	7	–		
–	Apr.	19	recitation 11						
23	Apr.	23	15	16	Star Formation	–	–		
24	Apr.	25	16	19	The Milky Way	8	7		
–	Apr.	26	recitation 12						
25	Apr.	30	17	20	Normal Galaxies	–	–		
26	May	2	18	20	Clusters of Galaxies	9	8		
–	May	3	recitation 13						
27	May	7	20/21	22/23	Cosmology	–	–		
28	May	9	20/21	22/23	Cosmology	–	9		
–	May	10	recitation 14						
finals	May	21	Final exam (all course material)						

Exams

There are two midterms and a final exam. The midterms will focus on the material since the previous exam. The final will cover the entire course. For each of the exams, students are responsible for knowing the material presented in the lectures, recitations, assigned as homework, and in the assigned chapters of the text. Students are expected to come to class on-time on exam days.

Students should not expect that they will be allowed to make up an exam. Reasons for wanting to make-up an exam will be judged on a case-by-case basis. Students wanting to make up an exam must have a *valid* excuse (e.g. athlete in University-related sporting event, jury duty, medical emergency), notify the instructor *before* the scheduled exam, and be prepared to provide documentation supporting their excuse. *No make-ups will be allowed more than one week after the original exam date.*

Final Exam

According to the University Registrar¹, the final exam is scheduled for Tues., May 21 from 11:15 am to 1:45 pm. *In the event of a discrepancy between what is listed here and what is on the Registrar's site, the date/time given by the Registrar will be used.* Any changes to the time, as well as the location of the exam will be announced in class toward the end of the semester. The final exam will be cumulative. *All students must take the final exam at the scheduled time.*

Extra Credit

There will be one opportunity for extra credit during the semester. Students can pick an "astronomy current event" related to this course (e.g. new results from the Cassini mission, discovery of a new exoplanet, ...) and present a 2–3 slide / 5 minute summary of the result at the beginning of a class meeting. *Don't wait until the end of the semester! To allow for scheduling, no new requests for extra credit will be accepted during the last 2 weeks of class.* No more than 2 presentations per class will be scheduled. Topics and timeslots are on a first-come-first-served basis. *You must let the instructor know a week in advance that you wish to present, and submit the topic for approval.* Successful presentations will get 2 points of extra credit added to their final course grade. A PDF of the slides must be sent to the instructor at least 24 hours in advance of the presentation.

Course Grade

The final grade will be based on the homeworks, midterms, and final exam using the following weighting:

- homework: 30%
- midterms: 40% (equally weighted)
- final exam: 30%

Computed this way, the overall course grade will range from 0–100. Any extra credit points (up to 2 total) will then be added. Letter grades will be based on a standard grade scale (i.e. an overall score > 90/100 would be an A– or better). However, if necessary, a curve will be applied to the overall course grade, considering the overall performance of the class. Students who wish to discuss their grades or class performance should see the instructor in person. *For privacy reasons, grades will not be discussed via e-mail or phone.*

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 the following website: <http://www.stonybrook.edu/ehs/fire/disabilities>.

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 & 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/

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 Judicial Affairs 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.

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 this:

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

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

¹https://www.stonybrook.edu/commcms/registrar/registration/_exams/spring19-finals.php

Religious Observances

See the policy statement regarding religious holidays at http://www.stonybrook.edu/commcms/provost/faculty/handbook/employment/religious_holidays_policy.php

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 instructor(s) how they will be able to make up the work covered.