Version 1

AST 203 & 203-R (Spring 2022): Astronomy

Class Meeting: Tu & Th. 11:30-12:50, Heavy Engineering Lab 201
Recitation: Fr. 13:00-13:55 (R02) or 14:40-15:35 (R01), Melville Library N4072

Instructor: Prof. Jin Koda
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Office Hours: To be announced

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Office Hours: To be announced

Course Description and Learning outcomes:
A survey of the physical nature of the universe for the student with some background in physics and mathematics. 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 you 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, course material, and class announcements will be available on the AST 203 Blackboard webpage.

Textbook:
The required textbook is *"An Introduction to Modern Astrophysics, 2nd Ed."* by Carroll and Ostlie (Cambridge). This book is at the appropriate mathematical level for our course. To provide a complimentary discussion of the course topics, the recommended textbook is *"Cosmic Perspective: Stars, Galaxies, Universe"* by Bennett et al. (Addison-Wesley).

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

listed on the assignment. Late homework received within 24 hours of the due date/time will be assessed a 20% penalty. **No late homework 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. *No makeup of missed homework will be allowed, but two lowest homework scores will be dropped to accommodate all unforeseen circumstances.* The remainder will be averaged to compute your total homework percentage.

Observing Sessions:
There will be no observing session scheduled for this course in this semester. Students are encouraged to attend the monthly Astronomy Open Night series, which may provide 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, homework, 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.

Exams:
There are one midterm and one final exam. The exams will focus on the material since the previous exam. The final exam is *not* cumulative. 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, and late students may not be allowed to take the exam.

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.

Extra Credit:
No extra credit is offered under any circumstance.

Course Grade:
The final grade will be based on the homework, midterm, and final exam using the following weighting: homework: 40%, midterm: 30%, final exam: 30%. Computed this way, the overall course grade will range from 0–100. 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. 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 are 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: https://www.stonybrook.edu/commcms/studentaffairs/dss/

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, SocialWelfare, 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.

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AST 203 Spring 2022 Schedule (Recitation Friday)					
Class #	Date	C&O Chapter	Bennett Chapter	Topic	HW assigned	HW due
1	Jan 25		1, 2, 3	Organization/Basic Concepts		
2	27	3	5	Continuum Radiation	1	
3	Feb 1	3	5	Continuum Radiation		
4	3	5	5	Spectral Lines	2	1
5	8	5, 8	5	Spectral Lines and H-R Diagram		
6	10	7	15.1	Binary Stars	3	2
7	15	7	15.1	Binary Stars		
8	17	10,11	14	The Sun	4	3
9	22	10,11	14	The Sun		
10	24	13	15, 17	Main-Sequence	5	4
11	Mar 1	13	15, 17	Main-Sequence		
12	3	6	6	Telescopes		5
13	8		15.5	Star Clusters		
14	10		18	**Midterm**		
	15			*Spring Break*		
	17			*Spring Break*		
15	22	13, 16	17	Stellar Old Age		
16	24	16, 15	18	Stellar Death	6	
17	29	15	18	Stellar Death		
18	31	12	19.2	Interstellar Medium	7	6
19	Apr 5	12	19.2	Interstellar Medium		
20	7	12	16	Star Formation	8	7
21	12	24	19	The Milky Way		
22	14	25	20	Normal Galaxies	9	8
23	19	27	20	Cluster of Galaxies		
24	21	28, 26	20, 21	Active Galaxies and Galaxy Evolution	10	9
25	26	29	22, 23	Cosmology		
26	28	29	22, 23	Cosmology		10
27	May 3	29	22, 23	Cosmology		
28	5			**Final Exam**		