AS 101: The Solar System (Fall 2014)

Instructor:
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Teaching fellow:
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Office hours: Mondays, Tuesdays, and Wednesdays 1-2 pm or by appointment

Lecture meeting time and location:
Mondays, Wednesdays, and Fridays at 11-noon in CAS 522
Lecture schedule can be found below.

Course Description:
AS101 is an introduction to the Solar System. In order to understand the Solar System in the context of the Universe, we will explore key concepts in astronomy, how planets form, and planets orbiting other stars in addition to the Sun and planets in our Solar System. The goal of the course is to help students understand some basic physical principles, the scientific process, and to appreciate our place in the universe. Note that the syllabus may change based on class progress. Changes will be announced in class and on the class website.

Prerequisites:
This course is taught at the introductory level and is intended for students from any college at the university. There are no requirements beyond high school level algebra and science. The Department of Astronomy also offers a more advanced introductory course (AS 202) for those prospective or active physical science or engineering majors.

Required Textbook:
For this course we will be using the Seventh Edition of "The Solar System: The Cosmic Perspective," by Bennett, Donahue, Schneider, and Voit published by Pearson. In order to do the homeworks (see below) you will also need access to the MasteringAstronomy.com web site, which is included with new copies of the textbook.

If you purchased a used copy, go to the website and call their help number to inquire how to purchase access. The Course ID for this class is AS101ESPAILLAT.

Website:
Course materials and grades will be posted on MasteringAstronomy.com for course ID AS101ESPAILLAT.

Grading:
20% homeworks
20% in-class exams
25% final exam
10% participation
25% lab exercises
All requests for grading corrections need to be made in writing.

Homeworks: The purpose of the homeworks is to keep you on track with the readings and give you frequent feedback on how you are doing in the course. Homeworks will be due on Academic Mondays at 9am, except on weeks when exams are scheduled. There will be 10 homeworks, all of which will be factored into your final homework grade (i.e., no homeworks will be dropped). The homeworks will be assigned through the MasteringAstronomy.com web site (see "Required Textbook" section above) and will consist of 7-10 questions consisting of multiple choice, true/false, math problems, and short essays. This site has strict deadlines, so please avoid missing them. To prevent issues submitting homework if there is a technology failure (i.e., loss of power, connectivity), you are responsible for taking screen captures your work and submitting it via email to Michael by the deadline in the case that you cannot do this via the website.

Exams: The exams will test your knowledge of ideas discussed, simple problem solving skills, and your ability to write brief essays about Astronomy. We will have 3 in-class exams and one final exam. The lowest score of the in-class exams will be dropped. No make-up exams will be given. If you need to miss an exam for any reason, it will be the exam that you drop as your lowest score. You cannot miss the final exam and there are no opportunities to take it at a different time. If you have been certified as needing to take an exam under special circumstances, please see me privately. The first exam, covering Chapters 1-3, will occur on Monday Sep 29. The second exam, covering Chapters 4-7, will occur on Monday Oct 27. The third exam, covering Chapters 8 and 11-12, will occur on Monday Nov 24. The duration of each in-class exam will be one academic hour or 50 minutes. There will be one final exam at noon – 2 pm on Monday Dec 15. The location of the final exam will be Room CAS 522. The final exam will cover Chapters 1-8 and 11-14 and all material presented in class.

Participation: In order to help engage you in the material, it is expected that you participate in class. Your participation grade will be based on the completion of in-class activities such as individual minute papers and group written exercises. These in-class

activities will be done randomly and cannot be made up so attendance is strongly encouraged. All in-class activities will be factored into your final participation grade (i.e., no in-class activities will be dropped). Since we realize that unforeseen circumstances occur, each student will be allowed to miss one in-class activity.

Lab Exercises: This is a laboratory course where lab reports constitute a major part of your final grade. The lab grade will be based on 5 indoor lab exercises and 2 observing lab exercises. We will drop the lowest score from the indoor labs only (not observing labs) so if you are unable to complete one of the exercises, it will be dropped.

Indoor Labs

The indoor labs will be performed in assigned sections lead by Michael. You must be enrolled in one of the lab sections (B4-7) in addition to the lecture (B1). The lab report will be due one week after completion of the lab. Late lab reports will have 25% of the maximum possible score deducted for each day they are overdue. The indoor lab schedule can be found below. Labs can be downloaded from http://www.bu.edu/astronomy/academics/undergraduate-studies/manuals/

Observing Labs

The Department of Astronomy's J. B. Coit Observatory is located on the roof of the CAS building. Observing labs will be done here and each lab should take about an hour to complete. It is essential not to wait until the end of the possible observing sessions to observe since weather is unpredictable. If you miss one of the two observing sessions because the last two weeks are cloudy, no make-up will be possible. To check if the observatory will be open on a given night, call 617-353-2630 for a recorded message about 1 hour before the lab start time. Choose option #1 to see if the night lab will be held that night and option #2 for other night lab information. The observing lab schedule can be found below. Labs can be downloaded at http://www.bu.edu/astronomy/academics/undergraduate-studies/manuals/

Planetarium Visit

The Boston Museum of Science has a planetarium capable of displaying the night sky as seen from any point on Earth. We have arranged a planetarium visit on Sep 25 and Sep 29 starting at 6:30pm. After the program, you will turn in a simple set of questions for extra credit which will count as extra credit towards your lab grade. Note that it is not possible for us to schedule an additional planetarium visit. You only need to attend one of the shows. It is not possible to earn additional credit by attending both shows.

Attendance & late policy:

You are expected to attend class. If you miss a class, check the course website for any assignments or news and talk with a fellow student to learn what else you missed. Under normal circumstances, the policies on late work are as follows. Late homeworks will not be accepted. If your lab reports are late, they will have 25% of the maximum possible score deducted for each day past the due date. The exams must be taken at the scheduled time.

Classroom etiquette:
Please arrive punctually for the start of class and remain for the duration of the class. If you arrive late or depart early, try to minimize the disruption this causes to other students. Turn mobile phones off during class.

Academic integrity:
Group study is encouraged, but work you hand in must be your own. Your lab reports should not be copied. Work that is copied will not be given any credit. If an answer in a homework question or a lab report requires written sentences, do not copy your answer directly from the textbook, a website, or any other source. All students are expected to follow the BU Academic Conduct Code (www.bu.edu/academics/resources/academic-conduct-code/). Cases of suspected academic misconduct will be referred to the Dean's Office.

Class Schedule:

Lectures

Week	*#*	*Date*	*Topic*	*Chapter*
1	1	Wed Sep 3	Welcome	-
	2	Fri Sep 5	A Modern View of the Universe	1
2	3	Mon Sep 8	HW#1 Due; Chapter 1 continued	1
	4	Wed Sep 10	Chapter 1 continued	1
	5	Fri Sep 12	Discovering the Universe for Yourself	2
3	6	Mon Sep 15	HW#2 Due; Chapter 2 continued (Note: last day to add course)	2
	7	Wed Sep 17	Chapter 2 continued	2
	8	Fri Sep 19	The Science of Astronomy	3
4	9	Mon Sep 22	HW#3 Due; Chapter 3 continued	3
	10	Wed Sep 24	Chapter 3 continued	3
	11	Fri Sep 26	Making Sense of the Universe	4
5	12	Mon Sep 29	EXAM #1	1-3
	13	Wed Oct 1	Chapter 4 continued	4
	14	Fri Oct 3	Chapter 4 continued	4
6	15	Mon Oct 6	HW#4 Due; Light and Matter (Note: last day to drop course)	5
	16	Wed Oct 8	Chapter 5 continued	5

	17	Fri Oct 10	Chapter 5 continued	5
7		Mon Oct 13	NO CLASS	-
	18	Tue Oct 14	HW#5 Due; Telescopes	6
	19	Wed Oct 15	Chapter 6 continued	6
	20	Fri Oct 17	Chapter 6 continued	6
8	21	Mon Oct 20	HW#6 Due; Our Planetary System	7
	22	Wed Oct 22	Chapter 7 continued	7
	23	Fri Oct 24	Chapter 7 continued	7
9	24	Mon Oct 27	EXAM #2	4-7
	25	Wed Oct 29	Formation of the Solar System	8
	26	Fri Oct 31	Chapter 8 continued	8
10	27	Mon Nov 3	HW#7 Due; Chapter 8 continued	8
	28	Wed Nov 5	Jovian Planet Systems	11
	29	Fri Nov 7	Chapter 11 continued	11
11	30	Mon Nov 10	HW#8 Due; Asteroids, Comets…	12
	31	Wed Nov 12	Chapter 12 continued	12
	32	Fri Nov 14	Chapter 12 continued	12
12	33	Mon Nov 17	EXAM #3	8,11-12
	34	Wed Nov 19	Other Planetary Systems	13
	35	Fri Nov 21	Chapter 13 continued	13
13	36	Mon Nov 24	HW#9 Due; Chapter 13 continued	13
		Wed Nov 26	NO CLASS	-
		Fri Nov 28	NO CLASS	-
14	37	Mon Dec 1	HW#10 Due; Our Star	14
	38	Wed Dec 3	Chapter 14 continued	14
	39	Fri Dec 5	Chapter 14 continued	14
15	40	Mon Dec 8	Synthesis	-
	41	Wed Dec 10	Review session	-
		Mon Dec 15	FINAL EXAM	1-8, 11-14

Indoor labs

There are four sections that meet in CAS 521 starting on Sep 9 and ending on Dec 5.
B4 Tuesdays 11-12:30
B5 Thursdays 12:30-2
B6 Thursdays 2-3:30

B7 Wednesdays 2-3:30

The labs you will cover are the following:
Skygazer-Orrery Sept 9-22
Gravity Sept 23-Oct 6
Spectroscopy Oct 7 - 21
Reflectance Oct 22 – Nov 4
Cratering Nov 5 – Nov 18

More information about the indoor labs will be available in the sections.

Outdoor labs

Observing Lab #1 (N1) Motions in the Sky
Sept 8 to Oct 23 Mondays, Tuesdays, Thursdays at 8:30pm

Observing Lab #2 (N2) What's the Name of that Star
Oct 27 to Dec 9 Mondays, Tuesdays, Thursdays at 8:30pm

Planetarium Visit

Sept 25 and Sept 29 at 6:30pm