

## NS 209 - What is There in the Universe: Beyond the Milky Way?

### COURSE CONTENT:

- Review of Basic Physics and Concepts Required for the Course (Chapter 0)

(Time and distance scales/measurement, Kepler's/Newton's laws, electromagnetic spectrum, blackbody radiation, line-emission and line-absorption, Stars: energy source, spectra, Formation and Evolution, Supernovae, Dead Stars: neutron stars, white dwarfs, blackholes)

- The Milky Way Galaxy

- Galaxies

- Galaxies and Dark Matter

- Cosmology

- The Early Universe

- Life in the Universe

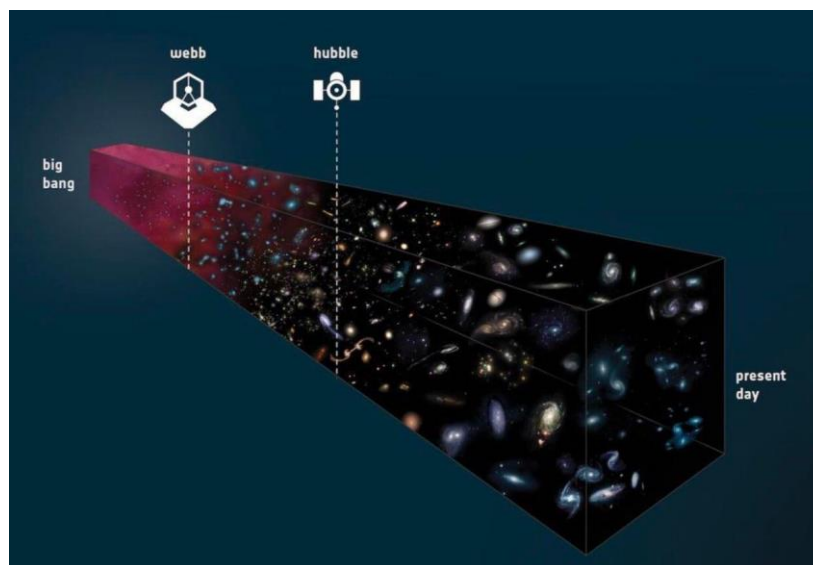


Figure 1 Credit: NASA, ESA, and A. Feild (STScI)

### TEXT BOOK:

E. Chaisson & S. McMillan, ASTRONOMY TODAY , 9<sup>th</sup> Edition (e-text)

**Access code:** From HOMER Bookstore, through the link below:

<https://www.homerbooks.com/urun/astronomy-today-standalone-ebook>

### GRADING:

- **Midterm Exam I**

- **Midterm Exam II**

- **Final Exam**

**You should take at least any two of these exams with 50 % weight for each. There is no make-up exam. For those who took all three exams, we will count the exams with the highest two grades to calculate the letter grade.**

**Homework: 10 %** A homework will be assigned. If you do the homework, its total grade (10 points) will be considered as a bonus in your total grade.

**Questionnaires: 10 %** There will be 10 -15 (or more) questionnaires which are given at random times in some of the lectures. You are asked simple questions and/or the points that you did not understand in the current subject, which provide a feed-back for the instructor to clarify these points in the following lectures. This additional 10% could be considered as a bonus in your total grade. There won't be make up for the questionnaires that you fail to attend, even if you have reasonable excuses. We only count 10 of the questionnaires. The questionnaires will be given in SUCourse. You should bring your own device to the classroom (mobile phone, ipad..) to submit your answers on-line. Only those who are currently present in the class or in the on-line connection can attend the given questionnaire.

**During the lectures you are allowed using electronic devices only for questionnaires.**

**Worksheets & Problems:** They will not be graded.

Your total grade is converted into letter grade as follows:

<u>85 - 100: A</u>	<u>55 - 59: C</u>
<u>80 - 84: A-</u>	<u>50 - 54: C-</u>
<u>75 - 79: B+</u>	<u>45 - 49: D+</u>
<u>70 - 74: B</u>	<u>40 - 44: D</u>
<u>65 - 69: B-</u>	<u>&lt; 40 : F</u>
<u>60 - 64: C+</u>	

### **Academic Integrity**

In the exams each student will be evaluated only for her/his own work. Students are encouraged to work and study together. But what you put down on exam papers should be your own work in your own words. If your friends want to use of your paper in exams, assignments or quizzes, to allow this is not helping them. Such behavior, as all forms of cheating, is unfair and disrespectful, to yourself, to all the students in the class, to your teachers and teaching assistants, and to the university. A student involved in cheating has misused the trust extended to him or her. Violations of academic integrity will result in zero grades, both for those who cheat and those who allow and help them. These students may also face disciplinary action. In all such situations we will ask you to have a face-to-face meeting with your faculty member. We have mutual trust and respect for each other as individuals sharing in a collaborative learning experience. This is very valuable for all of us, and having to lose this trust and respect would be very regrettable.