

**ASTRONOMY 113**  
**(a.k.a. ASTR 117, GEOL 117, BIOS 117)**  
**Life in the Universe**  
**Fall 2015**

Instructor: Edward Schmidt  
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Required Text: *Life in the Universe, Third Edition* by Bennet & Shostak  
Class: MWF, 13:30-14:20, Jorgensen 247  
Office Hours: MWF, 12:30-13:15, Jorgensen 244G  
Other times by appointment or just drop in or call  
Prerequisites: There are no prerequisites  
Attendance policy: Students are expected to attend and participate in all classes.

**COURSE OBJECTIVES:**

- 1) To develop skills in scientific reasoning and argument, and
- 2) To explore what modern science tells us about the possibilities of life elsewhere in the universe.

**GRADING AND EXAMS:** Grades in this course will be determined as follows:

- 40% In-class activities, response papers, homework, etc.
- 30% Midterm exam.
- 30% Final exam

**COURSE POLICIES**

1. All exams, homework, response papers, in-class activities, etc. are required. Late exams will only be given in extraordinary circumstances and there will not be an opportunity to make up in-class activities that are missed unless class was missed for a very good reason. Assignments must be turned in on time to receive full credit.
2. Students are expected to adhere to the Student Code of Conduct that can be found at <http://stuafs.unl.edu/ja/code>, section 4.2 in particular.
3. It will be assumed that students will read the assigned material before coming to class. The class is not a substitute for reading the book and vice versa. Exams will cover material from both the lectures and the book.

**REQUIREMENTS SATISFIED BY THIS COURSE**

This course counts towards the ACE Outcome 4 requirement or the Distribution Requirement in Arts and Sciences in Natural, Physical and Mathematical Sciences.

# Tentative schedule of topics Fall 2015

This schedule indicates the chapters you should read before coming to class.

As we go along, the instructor will modify the schedule as needed.

	Date	topic & lecturer	reading
	Aug 24	Introduction	Chapters 1 & 2
	Aug 26, 28 & 31	Science of life in the Universe	
<b>1</b>	Sept 2	In class activity	
	Sept 4	Chirality and Life on Earth: Gay	
	9-Sep	The Universal Context	Chapter 3
<b>2</b>	Sept 11, 14 & 16	The Earth: the history of the Earth and the climate: Watkins & Kettler	Chapter 4
	Sept 18 & 21	The Origin and Early Evolution of Life: Nickerson	Chapter 5 & 6
	Sept 23	In class activity	
	Sept 25	The nature of life: Extremophiles: Blum	
<b>3</b>	Sept 28	The origin of Viruses: Morris	
	Sept 30	Did a Giant Impact Kill the Dinosaurs?: Snow	
	Oct 2	In class activity	
	Oct 5	Evolution up to primates: Janovy	
	Oct 7, 9 & 12	Searching in the solar system and review for exam (Geology lectures)	Chapter 7
	Oct 14	Review for exam (Biology lectures)	
	Oct 16	Mid-term exam	
<b>4</b>	Oct 21 & 23	Mars	Chapter 8
	Oct 26	Water on Mars: Searls	
	Oct 28	Blueberries and concretions: Loope & Kettler	
	Oct 30 & Nov 2 & 4	Jovian Moons	Chapter 9
	Nov 6, 9, 11 & 13	The Nature and Evolution of Habitability	Chapter 10
<b>5</b>	Nov 16, 18, 20 & 23	Extrasolar planets and habitability outside the Solar System	Chapter 11

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Nov 30 & Dec 2 & 4

Search for Extraterrestrial Intelligence

Chapter 12

Dec 7, 9 and 11

Interstellar Travel

Chapter 13

Dec 14, 1:00-3:00 p.m.

Final Exam; location TBA

Revised August 4, 2015