

Earth, Planetary, and Space Sciences 3: Astrobiology Fall 2016

TR 12:30 pm - 1:45 pm
Location: MOORE 100

Course Description:

Origin, evolution, distribution, and future of life on Earth and in Universe. Course material primarily from planetary and Earth science, paleontology and biology, astronomy, chemistry, and physics.

Lectures (three hours/week) are supplemented with active learning exercises, in-class demonstrations, and weekly discussion sections (one hour/week).

Instructors:

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Teaching assistants:

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Required textbook:

David Catling “[Astrobiology: A Very Short Introduction](#)”, Oxford U. Press, 2014.

EPSS 3 website:

<https://ccle.ucla.edu/course/view/16F-EPSSCI3-1>

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Readings are chapters from Catling's "Astrobiology: A Very Short Introduction".

Date	Lecture	Title	Reading
Thu Sep. 22	01	<i>Astrobiology</i>	1
Tue Sep. 27	02 TT	<i>The Origin of Life on Earth</i>	3, 5
Thu Sep. 29	03 TT	<i>The Development of the first Biogeochemical Cycles on Earth</i>	3, 4
Tue Oct. 4	04 TT	<i>Fossils of primitive Life Forms on Earth</i>	3
Thu Oct. 6	05 TT	<i>The Evolution & Extinction of Life on Earth</i>	4, 5
Tue Oct. 11	06 TT	<i>Limits of Life</i>	3, 5
Thu Oct. 13	07 TT	<i>Extremophiles on Earth</i>	3, 5
Tue Oct. 18	08 TT	<i>Search for Life beyond Earth</i>	1, 3
Thu Oct. 20		No Class	
Tue Oct. 25		In-class Exam (lectures 1-8)	
Thu Oct. 27	09 JLM	<i>The Universal Context of Life</i>	2
Tue Nov. 1	10 JLM	<i>The Universal Context of Life</i>	2
Thu Nov. 3	11 JLM	<i>Building a Habitable Planet</i>	2
Tue Nov. 8	12 JLM	<i>Nature and Evolution of Habitability</i>	4, 6
Thu Nov. 10	13 JLM	<i>Exoplanets</i>	7
Tue Nov. 15	14 JLM	<i>Europa and Enceladus</i>	6
Thu Nov. 17	15 TT	<i>Mars</i>	6
Tue Nov. 22	16 TT	<i>Titan</i>	6
Thu Nov. 24		Thanksgiving break	
Tue Nov. 29	17 JLM	<i>Search for Extraterrestrial Intelligence</i>	7
Thu Dec. 1	18 JLM	<i>Interstellar Travel, Fermi Paradox</i>	7
Tue Dec. 6	3 pm	Final exam (lectures 9-18)	

GRADING

Students will be graded out of 100 points with the following weights:

Homework & discussion sections	40%
In-class exam	30% (multiple choice)
Final exam	30% (multiple choice)

Extra credit worth 10 points can be obtained by (1) submitting a signed voluntary activity [waiver form](#) before your activity and (2) visiting one of five local area museums (students completing the extra credit will be graded out of 110 points):

- 1) La Brea Tar Pits (student ticket \$9) <http://www.tarpits.org/>
- 2) Natural History Museum (student ticket \$9/free) <http://www.nhm.org>
- 3) California Science Center (free) <http://www.californiasciencecenter.org/>
- 4) Griffith Observatory (free) <http://www.griffithobservatory.org>
- 5) Mount Wilson (\$15 guided tour) <https://www.mtwilson.edu/>

ACTIVE LEARNING

We will promote active learning and participation during lectures with multiple choice questions that students can answer via text messaging, twitter, or the web. Participation is voluntary but strongly encouraged. This activity is not graded.

DISCUSSION SECTIONS

Please refer to the UCLA Registrar's Office [Schedule of Classes](#) for the time and location of your discussion section.

OFFICE HOURS

Sean Faulk	F 2:00 — 4:00 pm
Ariel Graykowski	M 9:00 — 11:00 am
Danielle Hastings	F 9:00 — 11:00 am
Jean-Luc Margot	F 3:00 — 4:00 pm
Ashley Schoenfeld	T 2:00 — 4:00 pm
Krista Sawchuk	T 9:30 — 11:30 am
Tina Treude	R 10:00 — 11:00 am

THE FINE PRINT

You are responsible for all material covered in lectures or reading. A PDF version of the lecture notes will be posted on the course web page before each lecture.

Please make use of lectures, discussion sections, and office hours to ask scientific questions. Email communications should be reserved for administrative questions only. We will not respond to emails containing scientific questions.

Homework is assigned in your discussion section and is due at the next discussion section. Late homework is not accepted. The two lowest grades on your homework assignments will not count against your final grade.

Electronic devices (calculators, tablets, laptops, organizers, cell phones, smart watches, MP3 players, etc.) are not allowed for use during exams.

Exams will take place according to the attached schedule. There are no make-up exams.

Documentation for extra credit consists of (1) a completed and signed voluntary activity [waiver form](#) sent by email to your TA before your activity, (2) two time-stamped digital photographs sent by email to your TA after your activity: one of you inside the museum, and one of a museum item that you found interesting. Please provide a few sentences describing this item in your email. Documentation for extra credit must be provided before the end of classes.

If you have a documented religious conflict with one of the exams and wish to discuss accommodations, please contact us as soon as possible, and no later than Oct 13.

If you have a documented disability and wish to discuss academic accommodations, please contact us as soon as possible, and no later than Oct 13.

Academic integrity is expected at all times and violations will be reported to the Dean of students. Collaboration between students is never permitted except when explicitly allowed by the instructor. All students enrolled in EPSS 3 are expected to have read the relevant policies at <http://www.deanofstudents.ucla.edu/Portals/16/Documents/StudentGuide.pdf>

Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. Students who have experienced sexual harassment or sexual violence can receive confidential support and advocacy at the CARE Advocacy Office for Sexual and Gender-Based Violence, 1st Floor Wooden Center West, CAREadvocate@caps.ucla.edu, (310) 206-2465. You can also report sexual violence or sexual harassment directly to the University's Title IX Coordinator, Kathleen Salvaty, 2241 Murphy Hall, titleix@conet.ucla.edu, (310) 206-3417.