

Astronomy 183 — Course outline (may be subject to change)

Welcome, introduction to astrobiology and science

Lectures 1, 2 January 12, 14
Reading: Chapter 1; Section 2.3; Epilogue

The definition of life and the origin of life

Lectures 3, 4 January 19, 21
Reading: Sections 5.1, 6.1, 6.2

Chemistry and life

Lectures 5, 6 January 26, 28
Reading: Section 3.4

Assignment out: Homework #1 (January 26)

Biology and life

Lectures 7, 8 February 2, 4
Reading: Sections 5.2, 5.3, 5.4, 5.5, 6.1

Assignment in: Homework #1 (February 4)

Physics and life

Lectures 9, 10, 11 February 9, 11, 16
Reading: Sections 2.4, 3.4

Assignment out: Homework #2 (February 9)

Astronomy and life

Lectures 12, 13, 14 February 18, 23 [no class Feb 25]; March 2
Reading: Sections 2.1, 2.2, 2.4, 3.1, 3.2, 3.3, 3.4, 7.2, 7.3, 9.1; Chapter 11

Assignment in: Homework #2 (February 18)

Assignment out: Homework #3 (February 23)

Assignment out: Final paper assignment (February 23)

Geology, Earth evolution, and life

Lectures 15, 16 March 4, 9
Reading: Sections 4.1, 4.4, 7.1

Assignment in: Homework #3 (March 4)

Midterm exam

Midterm exam March 11

Comparative planetology

Lecture 17 March 23

Reading: Sections 4.3, 4.5, 8.3; Chapter 10, and especially Section 10.5

Case studies

Lecture 18: Mars March 25

Lecture 19: Europa March 30

Lecture 20: Enceladus April 1

Lecture 21: Titan April 6

Reading: Sections 7.2, 7.3; Chapters 8 and 9

Assignment in: Term paper proposal (March 25)

Assignment out: Homework #4 (March 30)

Life on Earth

Lecture 22: Prokaryotes and eukaryotes April 8

Lecture 23: Evolution April 13

Lecture 24: Mass extinctions April 15

Reading: Sections 5.1, 5.2, 5.4, 6.1, 6.3, 6.4, 6.5

Assignment in: Homework #4 (April 8)

Assignment out: Homework #5 (April 13)

Life elsewhere

Lecture 25: Detection of life elsewhere, signatures of life April 20

Lecture 26: Drake equation, SETI April 22

Lecture 27: Messages sent to space April 27

Reading: Section 8.4; Chapter 11 and 12

Assignment in: Homework #5 (April 22)

Putting it all together

Lectures 28: Global thoughts April 29

Reading: Section 7.4; Chapter 13

Assignment in: Term paper (April 29)

Final exam

Final exam May 6, 12:30 – 2:30 p.m.