No. | Dy | Date | Read | Due | Topic
---|---|---|---|---|---
1 | Tu | 1/15 | A | | Introduction
2 | Th | 1/17 | B | | Solar System Physics
3 | Tu | 1/22 | C | Hmk 1 | Solar System Physics and Chemistry
4 | Th | 1/24 | D | | Molecules and Solar System Formation
5 | Tu | 1/29 | E | | Terrestrial Processes – Exogenic
6 | Th | 1/31 | F | Hmk 2 | Comets and The Real Deep Impact – Cratering Hazards
7 | Tu | 2/05 | G | | Terrestrial Processes – Endogenic (Tectonics, Volcanos)
8 | Th | 2/07 | H | Hmk 3 | Terrestrial Processes – Endogenic (Ices, Dating, Isotopes)
9 | Tu | 2/12 | I | | Terrestrial Processes – Atmospheres
10 | Th | 2/14 | J | Hmk 4 | Evolution of Early Earth (Land/atmosphere)
11 | Tu | 2/19 | | | QUIZ 1
12 | Th | 2/21 | K | | Life and its Requirements
13 | Tu | 2/26 | L | | Origin and Evolution of Life
14 | Th | 2/28 | M | Hmk 5 | Life in Extreme Environments
15 | Tu | 3/04 | N | | Mars Habitability, Mars Environment
16 | Th | 3/06 | O | Hmk 6 | Life on Mars? Viking, ALH84001, Where to look
17 | Tu | 3/11 | P | | Future Mars Missions and Biohazards
18 | Th | 3/13 | Q | Hmk 7 | Other Extreme Environments: Europa, Titan
19 | Tu | 3/18 | R | | Extra Solar Planetary Systems and Habitable Zones
20 | Th | 3/20 | S | Hmk 8 | SETI – Techniques
21 | Tu | 3/25 | | | SPRING BREAK
22 | Th | 3/27 | | | SPRING BREAK
23 | Tu | 4/01 | T | | SETI – Programs
24 | Th | 4/03 | | | QUIZ 2
25 | Tu | 4/08 | U | | Atmospheric Optics
26 | Th | 4/10 | V | | UFOs
27 | Tu | 4/15 | W | Hmk 9 | Space Environment and Hazards
28 | Th | 4/17 | X | | Space Transportation & Orbits
29 | Tu | 4/22 | Y | Hmk 10 | Space Resources
30 | Th | 4/24 | Z | | US Space Program: History & Modern Era
31 | Tu | 4/29 | AA | | Biosphere II
32 | Th | 5/06 | BB | | Space Colonies & Lunar Bases
33 | | 5/xx | | | FINAL EXAM


**Pre-Requisites** – Astronomy 110, Intro to Astronomy (C or better) or equivalent. For exceptions, see instructor. From 110 you should know the basics of scientific principles / inquiry, and have a general knowledge of the scale and content of the universe, and know the basic architecture of our Solar System, and be familiar with electromagnetic radiation.

**Grades** – Grading is based on class participation (15%), homeworks (35%), quizes (30%), and the final exam (20%). The quizes and final are closed book and consist of T/F, multiple choice and short answer questions. No late homeworks are accepted for any reason; I will drop the 2 lowest scores.
Required Readings

The reading assignments from the text and *Elements* magazine as well as other articles are listed below. These additional readings will be passed out in class. These are intended to supplement the lecture materials, and the content will be covered in the homeworks and quizzes.

- **A** — **Text**: pp. 1-15
- **B** — **Text**: pp. 80-88, 132-138; *Knowledge and Wonder – The Natural World as Man Knows it*, [V. Weisskopf], pp. 48-66, 81-97, 113-118.
- **C** — **Text**: pp. 343-354; *Earth, Evolution of a Habitable World*, [J. Lunine], 75-84.
- **D** — **Text**: pp. 70-80; **Elements**: pp. 205-210; *Holt Chapter – Formation of the Solar System*, [K. Meech]
- **E** — **Text**: pp. 139-143, 215-220; **Elements**: 211-215.
- **H** — **Text**: pp. 106-115, **Elements**: pp. 201-4.
- **I** — http://meted.ucar.edu/hao/aurora/txt/x_t,1,0.php
- **L** — **Text**: pp. 191-214; **Elements**: 229-33.
- **N** — **Text**: pp. 260-280.
- **Q** — **Text**: pp. 295-323.
- **S** — **Text**: pp. 437-466.
- **W** — NRC Document: *Space Radiation Hazards and the Vision for Space Exploration*, Chapter 1, pp. 7-23; *The Ionosphere, Radio Wave Propagation*.
- **X** — www.permanent.com - Chapter 3 (Transportation).

• Z — Holt Chapter – History of Space Exploration, [K. Meech], 1-19.

• AA — Space Biospheres – chapters 2-3, p. 45-72.

• BB — Space, the Next 25 Years, [T. McDonough], 207-222.


Useful References

• Evolution of a Habitable World — J. Lunine

• Cradle of Life — W. Schopf

• Terraforming, Engineer Planetary Environments — Fogg

• Lunar Bases and Space Activities of the 21st Century — W. K. Mende ll, ed.


• When SETI Succeeds: The Impact of High-Information Contact — A. Tough, ed.

• The Ages of Gaia — J. Lovelock

• The SETI Pioneers — Swift

• UFOs - the Public Deceived — P. Klass

• Inside NASA — H. McCurdy

• Prospects for Interstellar Travel — J. Mauldin

• Rainbows, Halos and Glories — R. Greenler