

Astronomy 101
Unit I Lecture Outline

14 September, 2016

Lecture	Date	Topic	Material (see outline below)
1	24 Aug	Introduction	
2	26 Aug	How Science Works	1.1., 1.2.1.
3	29 Aug	Ancient Astronomy	1.2.2. – 1.2.5.
4	31 Aug	From Sumeria to Greece	1.3.
5	2 Sep	The Celestial Sphere	1.4.1. – 1.4.4.
6	7 Sep	Sphere, Classical Greece	1.4.4. – 1.4.6., 1.5.1. – 1.5.3.
7	9 Sep	Greece, Dark Ages	1.5.3. – 1.5.5., 1.6.1. – 1.6.3.
8	12 Sep	Copernicus, Galileo, Kepler	1.6.4. – 1.6.6., 1.7.1. – 1.7.4.
9	14 Sep	Kepler, Newton	1.7.5., 1.8.
10	16 Sep	Gravity and Epilogue	1.9.
11	19 Sep	Review	
12	21 Sep	Mid-term Exam 1	

Outline for Mid-term Exam 1

0. Introduction

0.1. The Course

0.2. The Subject

0.3. The Grand Tour

1. The Birth of Astronomy

1.1. How Science Works

1. What is science?
2. It's just a theory
3. The scientific method
4. Science in action
5. Origins sciences

1.2. Ancient Astronomy

1. The need for astronomy
2. Motion of the Sun
3. Stars
4. Planets
5. Precession

1.3. From Sumeria to Greece

1. Mesopotamia
2. Egypt
3. Astrology
4. The birth of philosophy
5. The Pythagoreans

6. The Greek outlook
- 1.4. The Celestial Sphere
 1. Physical solution
 2. Coordinates
 3. The Sun and the seasons
 4. The Moon, phases, and eclipses
 5. Motion of the other planets
 6. Time
- 1.5. Classical Greece
 1. Socrates and Plato
 2. Aristotle
 3. The Alexandrian School
 4. Hipparchus
 5. Ptolemy
- 1.6. The Copernican Revolution
 1. The Dark Ages
 2. The Muslim gift
 3. The Renaissance
 4. Nicholas Copernicus
 5. The heliocentric model
- 1.7. Galileo and Kepler
 1. The telescope
 2. The trial of Galileo
 3. Tycho Brahe
 4. Kepler's method
 5. Kepler's Laws
- 1.8. Newton and Motion
 1. Background
 2. Isaac Newton's life
 3. Newton's three laws of motion
- 1.9. Gravity
 1. The Law of Universal Gravitation
 2. Halley's Comet
 3. Uranus and Neptune
 4. Pluto
- 1.10. Epilogue