



### \*ADDITIONAL WORK REQUIREMENT FOR "A" GRADE

(1) answer additional essay questions on the final exam

There will be additional essay questions on the final exam for "A" students to answer.

(2) write 9 essays from Prep Guides (Sec.6b) -due on date of final exam.

Hand in 9 essay questions of your choice from Exam #1-3 Prep Guides, with a minimum of 2 essays from each Exam Prep Guide. These 9 essays must be at least one full page per essay, and must be fully and accurately answered.

### COURSE OUTLINE AND TENTATIVE LECTURES (SEC. 1b)

The tentative lecture schedule for the semester, along with readings for each lecture.

[see Section 1b in this Handbook for details.]

### LECTURE OUTLINES SEC. 1c)

Every lecture given in class is outlined in detail.

[see Section 1c in this Handbook for details.]

### HOMEWORKS and READINGS SCHEDULE (SEC. 1d)

Homework questions and Text/Handbook readings.

[see Section 1d in this Handbook for details.]

### STUDY GUIDE and PREP GUIDE QUESTIONS

(Astronomy 320 Handbook, Sec. 6a, 6b + 6c, 6d)

1. EXAM STUDY GUIDES The study questions from which the exam prep guides are made up. [see Handbook/Sec. 6a for full details]
2. EXAM PREP GUIDES A preview of the questions from which the exams are made up. [see Handbook/Sec. 6b for full details]
3. OTHER HOMEWORK PROBLEMS Additional study problems as assigned. [see Handbook/Sec. 6c for full details]
4. EXTRA CREDIT ASSIGNMENTS Extra credit activities to improve your semester exam grades [see Handbook/Sec. 6d for full details]

Exam Study Guide questions are found in the Handbook, Sec.6a; Exam Prep Guide questions are found in Handbook, Sec.6b. These questions are designed to aid in your learning of the material of this course and to help you to prepare for the exams.

HOMEWORK SCHEDULE: Study Guide Questions to prepare and be discussed at our next lecture session [see Handbook, Sec.6a]

- (1) At The End Of Each Week: do that part of the Study Guide questions which relate to the class lecture material of that week.
- (2) Prior To Each Exam: you should review the Prep Guide questions for that exam.
- (3) In Addition: read Handbook/Sec.4-Readings which go with each lecture, as marked.

### DOING WELL IN THIS CLASS:

1. COME TO CLASS ... EVERYTIME.
2. TAKE GOOD LECTURE NOTES IN CLASS ... ON EVERYTHING! <WRITE IT ALL DOWN FULLY, COMPLETELY, ACCURATELY
3. COMPLETE THE STUDY GUIDES FOR EACH LECTURE ... AFTER EACH LECTURE.
4. COMPLETE THE PREP GUIDE FOR EACH EXAM ... (well) BEFORE EACH EXAM.
5. READ IN THE READINGS (SEC.4) THAT GO WITH THE LECTURES ... AFTER EACH LECTURE.

Lecture Dates Approximate

LECTURE SCHEDULE

Lecture Dates Approximate

Lecture Dates Approximate	LECTURE SCHEDULE	Lecture Dates Approximate
<p>Aug. 23</p> <p>25</p>	<p><b>●●PREHISTORY: THE ROOTS OF ASTRONOMY (prior to 500 BC)</b>                      Theme: The Cosmic Quest- the search to find our meaning in the universe begins with the search to find our place in the universe.                      L 1 "CLOSED WORLD TO INFINITE UNIVERSE" course introduction and overview                      L 2 "WHAT IS TRUTH?" – the philosophical foundations of the scientific view</p> <p style="text-align: center;"><b>THEME #1</b></p> <p><b>THE SKY ABOVE AND THE EARTH BELOW</b>                      Theme: The starry vault of night becomes the inspiration of ancient culture's religion                      L 3 "THE BOWL OF NIGHT" - motions in the sky                      L 4 "SKYWATCHERS OF THE ANCIENT WORLD" - archeoastronomy: Egypt to Medicine Wheel</p>	<p>11</p> <p>13</p> <p>18</p>
<p>30</p> <p>1</p>	<p><b>●●CHAOS TO COSMOS: GREEKS, ROMANS, CHRISTIANS, MOSLEMS: THE FOUNTAINHEAD (500 BC to 1000 AD)</b>                      Theme: The philosophers of classical Greece find a geometrical logic and design to the structure of the heavens, and man's place in it.                      L 5 "THE MUSIC OF THE SPHERES" - early Greek astronomy: Ionia to Pythagoreans                      L 6 "THE LOGIC OF THE HEAVENS" - the Socratic philosophers</p> <p style="text-align: center;"><b>THEME #2</b></p> <p><b>THE COSMIC GEOMETRY</b>                      Theme: Later Greek philosophers perfect the geocentric model of the universe, and Greek art and architecture embodies this grand cosmic design.                      L 7 "WHEELS ON WHEELS" - the Hellenistic astronomers                      L 8 "IDEALS AND PERFECTION" - the Greek ideal of a cosmic art and architecture</p> <p><b>MICROCOSM AND MACROCOSM</b>                      Theme: The Greek cosmic model forms the basis for Roman Empire society model and is adapted by the Christians as God's divine plan.                      L 9 "EMPEROR, GOD, AND COSMOS" – Romans, Christians, Moslems &amp; cosmology</p> <p>  Exam   <b>EXAM #1</b> Lectures 1-9</p>	<p>20</p> <p>25</p> <p>27</p>
<p>6</p> <p>8</p> <p>13</p> <p>15</p> <p>20</p> <p>22</p>	<p><b>●●THE REBIRTH OF THINKING: THE RENAISSANCE ; NEW HORIZONS FOR MAN (1200 to 1500 AD)</b>                      Theme: The paradigm shifts. The Renaissance brings new horizons and new viewpoints for man, on earth and in heaven. The old world ends; a new world begins.                      L 10 "NEW VIEWS OF HEAVEN AND EARTH" - the visions of Luther and Columbus                      L 11 "THE NEW PERSPECTIVE" - Renaissance Art and Humanism</p> <p><b>●●THE SCIENTIFIC REVOLUTION: THE SHATTERING OF THE CRYSTAL SPHERES (1500 to 1700 AD)</b></p> <p style="text-align: center;"><b>THEME #3</b></p> <p><b>THE BIRTH OF A NEW WORLD VIEW</b>                      Theme: A new model of the universe takes shape as Copernicus removes the earth from the center and Kepler discovers the mathematics of planetary motion.                      L 12 "THE EARTH MOVES!" - Copernicus and a new model of the universe                      L 13 "A MATHEMATICAL UNIVERSE" - Brahe, Kepler; the mathematics of the cosmos</p> <p><b>THE CLASH OF SCIENCE AND RELIGION</b>                      Theme: Galileo observes the heavens with a telescope and finds new evidence for the Copernican Theory. He tried by the Inquisition for heresy. The science scene shifts to England, where Newton unites the physics of heaven and earth.</p>	<p>Nov. 1</p> <p>3</p> <p>8</p> <p>10</p> <p>15</p>
<p>Oct. 4</p> <p>6</p>	<p><b>●●THE 18<sup>th</sup> and 19<sup>th</sup> CENTURY: A VISION OF AN INFINITE UNIVERSE (1700 to 1900 AD)</b>                      EXPANDING HORIZONS AND THE PLACE OF MAN                      Theme: 18<sup>th</sup> and 19<sup>th</sup> century astronomers sweep the skies and discover new worlds around the sun and others suns that form our galaxy: the Milky Way.                      L 18 "THE MEASURE OF THE EARTH" - the voyages of discovery; the longitude prob.                      L 19 "THE FAMILY OF THE SUN" - the discovery of the solar system: Vulcan to Mars                      L 20 "THE FAMILY OF THE SUN" - the discovery of the solar system: Uranus to Pluto                      L 21 "THE COSMIC PINWHEEL" - the discovery of our galaxy, from Herschel to Shapley                      L 22 "THE COSMIC PINWHEEL" - the discovery of our galaxy, from to Shapley to Baade</p> <p><b>●●THE 20<sup>th</sup> CENTURY: BRAVE NEW MAN IN A BRAVE NEW UNIVERSE (1900 to 2000 AD)</b>                      WORLDS WITHOUT END                      Theme: In the 20<sup>th</sup> century the astronomers discover an endless universe of galaxies, explore the life of the stars and question whether we are alone.                      L 23 "HUBBLE'S UNIVERSE" – The great telescopes, Hubble and the discovery of the galaxies                      L 24 "THE GREAT DEBATE &amp; THE SEARCH FOR THE YEAR 0" – superclusters and H<sub>0</sub>                      L 25 "A JOURNEY TO OZ" - stellar evolution and the search for life in the universe</p> <p><b>●●THE 21<sup>st</sup> CENTURY: QUO VADIS MANKIND? BEGINNINGS AND ENDINGS (1900 to present)</b></p> <p style="text-align: center;"><b>THEME #5</b></p> <p><b>MODERN MAN AND THE SEARCH FOR MEANING</b>                      Theme: As the 20<sup>th</sup> century ends, astronomy, philosophy and theology appear to be asking the same kinds of questions.                      L 26 "EINSTEIN AND RELATIVITY" - 4 dimensions and the shape of space                      L 27 "MAN, GODS, MEANING" – lost in the stars: flat earth to noosphere</p> <p>  Exam #3: Lectures 17-27 + previous (given during the Final Exam period.</p>	<p>20</p> <p>25</p> <p>27</p> <p>Nov. 1</p> <p>3</p> <p>8</p> <p>10</p> <p>15</p> <p>17</p> <p>22</p> <p>29</p> <p>Dec. 1</p> <p>6</p> <p>Dec 13</p> <p>3:30p</p>

# Astr 320 HOMEWORK and READING SCHEDULE

## Fall 2016

### COURSE OUTLINE AND LECTURES

This course has been divided into 5 themes, each theme covering one general topic and one historical time period. During each of these periods we will discuss the view of the universe of people living in that period, and how they came to believe in that view. Finally, we will discuss the effect that view had on their lives and their times. [see Astr320 Handbook/Sec.1b-Lecture Schedule for full details]

<p><b>THEME #1:</b> [Weeks 1-2; Lectures 1-4]</p> <p><b>THEME #2:</b> [Weeks 3-5; Lectures 5-9]</p> <p><b>THEME #3:</b> [Weeks 6-9; Lectures 10-16]</p> <p><b>THEME #4:</b> [Weeks 10-14; Lectures 17-25]</p> <p><b>THEME #5:</b> [Weeks 15-16; Lectures 26-27]</p>	<p><b>SCIENTIFIC TRUTH:</b> What does the sky look like? What is our place in it? How do we know what to believe?</p> <p><b>THE OLD VIEW:</b> Astronomy and society-Greeks, Romans, Christians, Moslems</p> <p><b>THE NEW VIEW:</b> The Scientific Revolution from Copernicus to Enlightenment</p> <p><b>THE MODERN VIEW:</b> Astronomy from Newton to Hubble</p> <p><b>LINGERING QUESTIONS:</b> Life, Religion, God, Meaning</p>
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## Astr 320 HOMEWORK and READING SCHEDULE

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	LEC No.	HOMEWORK QUESTIONS due this LECTURE (M.Choice - Sec 6a)	OTHER QUESTIONS	READINGS IN HANDBOOK- (Sec.4)	READINGS IN TEXT - (Hoskin) <i>Cambridge Illustrated History of Astronomy</i>
<b>THEME #1:</b>  SCIENTIFIC TRUTH	1			1.1 - 1.8	
	2	1-1, Brief Bio		2.1 - 2.4	
	3			3.1 - 3.2	pp. 2-21
	4	3-3	Sec.6c-1/Sec.10 Stellarium Q's	4	22-29
<b>THEME #2:</b>  THE OLD VIEW- Greeks to Moslems	5	4-12		5.1 - 5.2	29-36
	6	5-16			
	7	6-18			37-47
	8	7-21		8	
	9	8-27, 9-32		9.1 - 9.2	50-67
<b>THEME #3:</b>  THE NEW VIEW- Scientific Revolution	10	10-2		10.1 - 10.3	68-90
	11	10-5		11	
	12	11-6			90-97
	13	12-8; 12-16		13	98-121
	14	13-24		14.1 - 14.2	122-143
	15	14-29			144-175
	16	15-35		16.1 - 16.3	
<b>THEME #4:</b>  THE MODERN VIEW Newton to 20 <sup>th</sup> C.	17	17-2		17	
	18	17-4		18.1 - 18.2	175-183
	19	18-5			184-197
	20	19-8			
	21	19-9		21	198-244
	22	21-11			
	23	21-16			244-343
	24	23-18			
	25	23-19		25.1 - 25.8	271-329
<b>THEME #5:</b>  LINGERING QUESTIONS	26	25-22		26.1 - 26.4	344-365
	27	27-36		27.1 - 27.6	