

ASTRONOMY 5 – FALL 2019
GENERAL SCHEDULE OF ACTIVITIES

WEEK #	WEEK BEGINNING	LECTURE TOPICS AND ACTIVITIES	TEXTBOOK READING*	HOMEWORK**	3RD HR EXERCISE	CONTENT CHECKS
1	8/26	Enrollment Check, Introduction and Objectives Overview of Astronomy and the Universe Distance and Time Scales, Our Place in the Cosmos	Chapter 1	Assignment 0 Due 09/05	Intro-go to 3 rd hour!	—
2	9/2 Monday Holiday	Planetarium Sky Demonstrations – Terminology and Motions Seasons, Precession, Moon Phases, Eclipses Ancient Mysteries – Retrograde Motion and Stellar Parallax	Chapter 2	Assignment 1 Due 09/05	A***	—
3	9/9	Early History and the Geocentric Models, Ptolemy Origins of Modern Astronomy – Copernicus, Brahe, and Kepler Galileo – Nature of Science, Observations, and Inertia and Motion	Chapter 3	Assignment 2 Due 09/12	B	AA
4	9/16	Newton’s Three Laws of Motion, Force and Acceleration Conservation Laws, Momentum and Energy Law of Universal Gravitation, Orbits and Tides	Chapter 4	Assignment 3 Due 09/19	C	BB
5	9/23	Properties of Light, Waves & Photons, Electromagnetic Spectrum Properties of Matter, Atomic Structure, Phase Changes Atoms and Spectra, The Stefan-Boltzmann and Wien Laws Doppler Shift, Radial Velocity and Rotation	Chapter 5	Assignment 4 Due 09/26	D	CC
6	9/30	Telescopes – Refractors & Reflectors, Interferometers Light Gathering, Angular Resolution, Magnification Observations at Nonvisible Wavelengths, Instrumentation Atmospheric Effects – Light Pollution, Twinkling, Windows	Chapter 6	Assignment 5 Due 10/03	E	DD
7	10/7	Physical Characteristics and Processes of the Sun Sunspots, Solar Activity Cycle, and the Sun-Earth Connection	Chapter 14	Assignment 6 Due 10/10	F	EE
8	10/14	Properties of Stars – Luminosity, Temperature, Mass, Radius Magnitude System, Parallax, and Binary Star Systems Stellar Classifications and the HR Diagram Globular and Open Star Clusters, Stellar Birth and Aging Take-Home Midterm Available (Part 1)	Chapter 15	Assignment 7 Due 10/17	G	FF

* Supplementary Chapter S1, although not required reading, may be helpful in understanding Week 2 lectures and third-hour activities.

** Assignments are found on the “Mastering Astronomy” web site for “The Cosmic Perspective: Stars, Galaxies, and Cosmology”.

*** Since Monday is a holiday this week, Monday Third-Hour students need to attend a Third-Hour class at a later time during the week.

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(continued)

WEEK #	WEEK BEGINNING	LECTURE TOPICS AND ACTIVITIES	TEXTBOOK READING[†]	HOMEWORK^{††}	3RD HR EXERCISE	CONTENT CHECKS
9	10/21	The Interstellar Medium and Star-Forming Clouds Stellar Formation Processes, Protostars, Disks, Jets and Winds Life Tracks and the Masses of Newborn Stars Evolution and Death of Low-Mass Stars <u>In-Class Midterm</u> (Part 3) <u>in Third Hour</u> (Bring Scantron 882) Extra Credit (first 10 pts) – Due 10/25 by 12:00 Noon	Chapter 16 Chapter 17	<u>Take-Home Midterm</u> (Part 1 - 40 pts Part 2 - 10 pts) Due 10/24	<u>In-Class Midterm</u> (Part 3 – 50 pts)	GG
10	10/28	Evolution and Death of High-Mass Stars White Dwarfs, Neutron Stars, and Black Holes Accretion Disks, Novae, Supernovae, Creation of the Elements Pulsars, X-Ray Binaries and Bursters, Gamma-Ray Bursts	Chapter 17 Chapter 18	Assignment 8 Due 10/31	H	HH
11	11/4	The Milky Way Galaxy – Characteristics, Dynamics, Populations Galactic Recycling, Star-Forming Regions, The Spiral Arms History of the Milky Way, The Galactic Center	Chapter 19	Assignment 9 Due 11/07	I	II
12	11/11 Monday Holiday	Galaxy Types – Spirals, Ellipticals, and Irregulars Galaxy Distances and Standard Candles, Cepheid Variables Hubble Law, Universal Expansion, and the Lookback Time	Chapter 20	Assignment 10 Due 11/14	J ^{†††}	JJ
13	11/18	Galactic Evolution, Collisions, and Starbursts Quasars and Other Active Galaxies, Supermassive Black Holes Quasars as Probes of the Intergalactic Medium	Chapter 21	Assignment 11 Due 11/21	K	KK
14	11/25 Thursday Friday Holiday	The Big Bang and the Universe’s Early Evolution Observational Evidence & the Need for Inflation, Olbers’ Paradox	Chapter 22	Assignment 12 Due 11/28	L ^{††††}	LL
15	12/2	Dark Matter and Dark Energy – Evidence and “Composition” The Large Scale Structure of the Universe Fate of the Universe – Expand Forever or Big Crunch? Balance of Extra Credit Due 12/06 by 12:00 Noon	Chapter 23	Assignment 13 Due 12/05	M	MM
16	12/9	<u>Final Exam</u> (110 pts, 3 parts – see <i>Final Exam Outline</i>) and <u>Sky Quiz</u> (30 pts)	—	—	<u>Final</u>	—

[†] Supplementary Chapters S2 and S3, although not required reading, may be helpful in understanding the lectures for Weeks 9-15. Supplementary Chapter S1, also not required reading, may be helpful in understanding activities in Third-Hour.

^{††} Assignments are found on the “Mastering Astronomy” web site for “The Cosmic Perspective: Stars, Galaxies, and Cosmology”.