TEMPLE COLLEGE
TEMPLE HUTTO TAYLOR

Course Syllab

ASTR 1303 Stars and Galaxies

Instructor:

McClain, John

Contact Information:

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Catalogue Description

This course is based on the study of stars,,galaxies, and the universe outside of our solar,system. Mastery of this course will give the,student a good understanding of how our universe,is structured and its progression. Cross-listed,as PHYS 1303.

Term:

Fall 2022

Format of Term:

16 week

Lab Hours Per Week:

0

End of Course Outcomes:

Upon successful completion of this course, students will be able to:

- describe the basic properties of stars: distance, spectral class, motion, magnitude, composition, and parallax;
- discuss the classification scheme of stars as to spectral classes;
- explain the Hertzsprung-Russell diagram and how it relates to stellar evolution;
- explain the stages of stellar evolution as the birth, life, and death of any size star;
- explain the interstellar medium and how it relates to atoms, molecules, dust, and nebulae;
- identify the classification scheme for binary stars, the importance of binary stars to astronomy, and the origin and evolution of binary systems;
- describe the various types of natural star groupings in our galaxy and how they evolved; and,
- describe the structure of our galaxy (both historical and modern) and the galactic coordinate system; and, discuss various cosmological models.

Required Textbook

Bennett, Donahue, Schneider, Voit, , 9th ed., The Cosmic Perspective, , Pearson, , http://

Learning Resources:

Additional learning resources include Mastering Astronomy which is required and is part of the course fees.

Evaluation System:

The semester average is calculated based on the following weights.

- MasteringAstronomy Conceptual Quizzes - 7%
- MasteringAstronomy Reading Quizzes - 7%
- MasteringAstronomy Visual Quizzes - 7%
- MasteringAstronomy (PowerPoint) Reviews - 12%
- MasteringAstronomy Overviews - 10%
- MasteringAstronomy Key Ideas - 14%
- MasteringAstronomy Films and Figs - 14%
- MasteringAstronomy Activities - 14%
- Cumulative Assessments (Exams) - 10%
- Final Assessment (Exam) - 5%

The standard scale is used for this class.

- A: 90:00 ≤ semester average
- B: 80:00 ≤ semester average < 90:00
- C: 70:00 ≤ semester average < 80:00
- D: 60:00 ≤ semester average < 70:00
- F: semester average < 60:00

Course Schedule/Topics

The schedule for topics and exams are provided below.

- Chapter 1: A Modern View of the Universe
- Chapter 5: Light and Matter: Reading Messages from the Cosmos
- Chapter 6: Telescopes: Portals of Discovery
- Cumulative assessment

- Chapter S2: Space and Time
- Chapter S3: Spacetime and Gravity
- Chapter S4: Building Blocks of the Universe
- Cumulative assessment

- Chapter 14: Our Star
- Chapter 15: Surveying the Stars
- Chapter 16: Star Birth
- Chapter 17: Star Stuff
- Cumulative assessment

- Chapter 18: The Bizarre Stellar Graveyard
- Chapter 19: Our Galaxy
- Chapter 20: Galaxies and the Foundation of Modern Cosmology
- Cumulative assessment

- Chapter 21: Galaxy Evolution
- Chapter 22: The Birth of the Universe
- Chapter 23: Spacetime and Gravity
- Cumulative assessment

- Cumulative Final Exam

Marketable Skills

Marketable skills include the following:

- Critical Thinking Skills: Temple College students will be able to think critically using creative thinking, innovation, inquiry, and analysis, evaluation skills and synthesis of information.
- Empirical and Quantitative Skills: Temple College students will be able to manipulate and analyze numerical data or observable facts to inform conclusions.
- Communication Skills: Temple College students will be able to effectively develop, interpret, and express ideas through written, oral, and visual communication.
- Teamwork: Temple College students will be able to consider points of view and work effectively with others to support a shared purpose or goal.