PHYS 1404-Solar System
Department Syllabus

Catalog Description (4-3-3)
A review of lunar and solar cycles, light and telescopes, and study of the sun, the planets and other objects of the solar system. This course fulfills a general education requirement in natural science. Prerequisite: the student must be TSI complete.
Laboratory fee $25. Sp, also offered as a web course (4002015203)

Textbook and Resources

Course Intent
This course is intended for non-science majors who need to fulfill a laboratory science requirement. The text has 20 chapters and is designed for a two-semester course. PHYS 1404 will address selected material from text chapters 3, 5, 7 and 15-19. This course will also help students attain logical thinking and problem solving skills.

Scope of the Course
Unit 1: The “cycles” of terrestrial and lunar astronomy
Unit 2: Light and telescopes
Unit 3: The sun
Unit 4: The origin of the Solar System
Unit 5: Earth and moon
Unit 6: Mercury, Venus, and Mars
Unit 7: The outer Solar System
Unit 8: Meteorites, asteroids, and comets

Learning Outcomes and Exemplary Educational Objectives

1. To become more aware of the universe and of our place within it.
2. To appreciate the importance of distance measurement in astronomy.

1. The student will compare the scale of a human with that of planets, stars, galaxies, and the universe, in approximate powers of ten.
2. The student will briefly explain at least two different methods for estimating stellar distances.
3. To consider the relationship of human history to the evolution of the universe.

4. To recognize the universal manifestation of gravity and angular momentum.

5. To appreciate the basic ideas that explain the formation and evolution of solar system planets, including the distinction between terrestrial and Jovian planets.

3. The student will give reasonable estimates for: the age of terrestrial life, the age of the solar system, a typical stellar lifetime, and the age of the universe.

4. The student will describe two phenomena that are common to the formation of galaxies, stars, and planets.

5. The student will list and describe two or more physical factors that drive the accepted theories of planet formation in our star system.

Learning Activities and Assessment

Students will participate in web assignments and discussions, do daily work in some or all of the following manners: daily work on paper (from textbook or handouts), short quizzes, online activities (daily work and/or quizzes), and calculator projects. Student outcomes will be assessed by a combination of daily work grades, major test grades, and a comprehensive final exam.

Throughout the semester the following Core Curriculum Objectives will be addressed:

1. Critical Thinking Skills - which may include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
2. Communication Skills - which may include effective development, interpretation and expression of ideas through written and visual communication.
3. Empirical and Quantitative Skills – which may include the manipulation and analysis of numerical data or observable facts/data resulting in informed conclusions.
4. Teamwork – which includes the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

ADA Statement

Kilgore College is committed to making reasonable accommodations to assist individuals with disabilities in reaching their academic potential. If you choose to request accommodations for a documented disability which may impact your performance, attendance, or grades in this course, you must first register with the Office of Disability Services. Please note that classroom accommodations cannot be provided prior to your instructor’s receipt of an accommodation letter from the Office of Disability Services. For more information about accommodations, please contact the Disability Services Office on the second floor of the Devall Student Center: (903) 983-8206.