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| **PROFESSOR:** | **PHONE NUMBER:** |
| **OFFICE LOCATION:** | **E-MAIL:** |
| **OFFICE HOURS:** | **SEMESTER:** |

1. **COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:**

**AST 2003C ASTRONOMY: THE SOLAR SYSTEM (4 CREDITS)**

This course provides a survey of astronomy as a quantitative observational science. It is designed to provide an introduction to the night sky, astronomical tools and methods, the historical development of our understanding of the universe, and the solar system. AST 2003C and AST 2004C may be taken in any order.

1. **PREREQUISITES FOR THIS COURSE:**

(SB 1720 Testing Exemption or successful completion of all Developmental courses) and MAT 1033 or higher with a grade of “C” or better

**CO-REQUISITES FOR THIS COURSE:**

None

1. **GENERAL COURSE INFORMATION:** Topic Outline.

* Orientation to the night sky and units of measurement; the celestial sphere and star charts
* Observations of selected objects in the sky; star counting and sampling techniques
* Lunar and solar eclipses
* The Greek geocentric model; the apparent motion of the planets
* Kepler, Galileo, Newton and the heliocentric model; Kepler’s laws
* Light and the electromagnetic spectrum; the Doppler effect and spectroscopy
* Gravity
* Telescopes
* The Earth-Moon system
* The formation of planetary systems
* The planets in our solar system and their satellites
* Solar system debris: comets, asteroids, and meteoroids
* The Sun

1. **All courses at Florida SouthWestern State College contribute to the general education program by meeting one or more of the following general education competencies:**

**C**ommunicate clearly in a variety of modes and media.

**R**esearch and examine academic and non-academic information, resources, and evidence.

**E**valuate and utilize mathematical principles, technology, scientific and quantitative data.

**A**nalyze and create individual and collaborative works of art, literature, and performance.

**T**hink critically about questions to yield meaning and value.

**I**nvestigate and engage in the transdisciplinary applications of research, learning, and knowledge.

**V**isualize and engage the world from different historical, social, religious, and cultural approaches.

**E**ngage meanings of active citizenship in one’s community, nation, and the world.

**A.**  **General Education Competencies and Course Outcomes**

1. Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student’s general education along with the general education competency it supports.

General Education Competency: **Evaluate**

Course Outcomes or Objectives Supporting the General Education Competency Selected:

* Identify the major celestial phenomena associated with the Sun, Moon, planets, and stars and analyze their relationship to the celestial sphere.
* Describe the ancient concepts of astronomy and show how they relate to modern day concepts.
* Use star charts to accurately locate stars and constellations by their right ascension and declination; compare astronomical and astrological predictions.
* Use sampling to approximate the number of stars seen by the naked eye in the night sky.
* Record the positions and sketch the motions of the Moon, Sun, Venus and Jupiter at specific times during the semester; formulate a model for their relative positions and motions.
* Compare and contrast the major historical contributions or early astronomers through Newton.
* Identify and apply the relevant theories of gravitation and motion to predict and analyze planetary orbits.
* Use observational data to draw conclusions about the shapes of planetary orbits (such as the orbit of Mercury and Mars).
* Determine the mass of a celestial object (such as the Moon) by using Kepler’s laws and observational data (such as a satellite’s orbit around the Moon).
* Identify the various observational tools used in astronomy and categorize and differentiate the regions of the electromagnetic spectrum; identify gaseous elements by their spectral lines.
* Use the Doppler effect to determine the rotational period of a celestial object (such as Mercury).
* Construct a telescope and use it to make observations.
* Integrate relevant theories related to the Moon’s origin, its phases and its tidal effects on Earth.
* Compare and contrast the major physical characteristics of the Earth and Moon.
* Compare theories of formation of stars and their planetary systems.
* Use occultation data (such as from the Pluto-Charon system) to determine the diameter of each of the objects involved.
* Compare and contrast the interiors, surfaces, atmospheres (where applicable), and physical characteristics of the terrestrial planets.
* Compare and contrast the structure and physical characteristics of the Jovian planets.
* Compare and contrast the various objects comprising the solar system debris.
* Identify, describe, and compare the different layers in the Sun’s interior and atmosphere.

1. **DISTRICT-WIDE POLICIES:**

**Programs for Students with Disabilities**

Florida SouthWestern State College, in accordance with the Americans with Disabilities Act and the College’s guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or who suspect that their academic performance is affected by a disability should contact the Office of Adaptive Services at the nearest campus. The office locations and telephone numbers for the Office of Adaptive Services at each campus can be found at <http://www.fsw.edu/adaptiveservices>.

**REPORTING TITLE IX VIOLATIONS**

Florida SouthWestern State College, in accordance with Title IX and the Violence Against Women Act, has established a set of procedures for reporting and investigating Title IX violations including sexual misconduct.  Students who need to report an incident or need to receive support regarding an incident should contact the Equity Officer at [equity@fsw.edu](mailto:equity@fsw.edu).  Incoming students are encouraged to participate in the Sexual Violence Prevention training offered online.  Additional information and resources can be found on the College’s website at <http://www.fsw.edu/sexualassault>.

1. **REQUIREMENTS FOR THE STUDENTS:**

List specific course assessments such as class participation, tests, homework assignments, make-up procedures, etc.

1. **ATTENDANCE POLICY:**

The professor’s specific policy concerning absence. (The College policy on attendance is in the Catalog, and defers to the professor.)

1. **GRADING POLICY:**

Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

90 - 100 = A

80 - 89 = B

70 - 79 = C

60 - 69 = D

Below 60 = F

(Note: The “incomplete” grade [“I”] should be given only when unusual circumstances warrant. An “incomplete” is not a substitute for a “D,” “F,” or “W.” Refer to the policy on “incomplete grades.)

1. **REQUIRED COURSE MATERIALS:**

(In correct bibliographic format.)

1. **RESERVED MATERIALS FOR THE COURSE:**

Other special learning resources.

1. **CLASS SCHEDULE:**

This section includes assignments for each class meeting or unit, along with scheduled Library activities and other scheduled support, including scheduled tests.

1. **ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:**

(Which would be useful to the students in the class.)