LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

SPECIAL NOTE:

This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):

Please check with the LCC bookstore, http://www.labette.edu/bookstore, for the required texts for this class.

COURSE NUMBER: PHSC 103

COURSE TITLE: Introduction to Astronomy

SEMESTER CREDIT HOURS: 5

DEPARTMENT: Physical Science

DIVISION: General Education

PREREQUISITES: MATH 100 Intermediate Algebra or equivalent

REVISION DATE: December 14, 17

COURSE DESCRIPTION:
A study via instruction and laboratory experiences of the historical developments in astronomy from ancient times; the theoretical and empirical foundations of astronomy; the composition and mechanics of the solar system, stellar systems, and galactic systems; and introduction to observational astronomy and cosmology.

COURSE OUTCOMES AND COMPETENCIES:
Students who successfully complete this course will be able to:

1. Explain the scientific method

2. Explain and critique science as presented in the media

3. Interpret astronomical observations, demonstrate critical thinking and problem solving
    - Utilize the celestial sphere model to describe motion of the Sun, Moon and stars.
    - Discuss the causes of Earth's seasonal cycles.
    - Explain the effect of gravity on Earth and throughout the Solar System.
    - Analyze the different types of light and their importance to astronomers.

4. Explain the features that compose the observed phenomenon and objects of the solar system in terms of appropriate scientific models.

- Describe the features of the terrestrial planets and their believed causes.
- Indicate the reasoning for the observed interactions between Earth and Moon.
- Elaborate concerning the characteristics of the outer planets and their moons.
- Differentiate between the different types of "leftovers" in the Solar System.
- Explain the mechanisms that drive the behavior of the Sun.

5. Describe the stars by their types and evolution over time.

- Characterize the different types of stars.
- Discuss the evolution of stars throughout their existence.
- Predict what will happen to stars as they finish their evolutionary cycle.
- Explain the basic features of black holes.

6. Describe the macro scale objects and their roles in the universe as a whole.

- Analyze the features of the Milky Way galaxy.
- Categorize the different types of galaxies.
- Briefly elaborate on the usefulness of quasars and other active galaxies.
- Describe the basic tenants of cosmology and astrobiology

7. Identify, locate and predict the characteristics of celestial objects including at least constellations, asterism and planets.

8. Effectively utilize the tools of observational astronomy including at least star charts, binoculars and telescopes.

9. Generate and communicate conclusions based on data and analysis of observation