COURSE SYLLABUS

LAST REVIEW	Spring 2021
COURSE TITLE	Introduction to Astronomy Lab
COURSE NUMBER	NASC-0108
DIVISION	Math, Science, Business & Technology
DEPARTMENT	Physical Sciences
CIP CODE	24.0101
CREDIT HOURS	1
CONTACT HOURS/WEEK	Lab: 2
PREREQUISITES	None
COURSE PLACEMENT	None

COURSE DESCRIPTION

This laboratory introduces the variety of techniques used by astronomers to learn information about the planets, stars, and galaxies. This course counts as a lab science when taken concurrently or after NASC0107

KANSAS SYSTEMWIDE TRANSFER: PHY 1022

The learning outcomes and competencies detailed in this course outline or syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups project for this course as approved by the Kansas Board of Regents.

General Education Learning Outcome

- Basic Skills for Communication
- Mathematics

Humanities

- Natural and Physical Sciences
 - Social and Behavioral Sciences

Institutional Learning Outcomes

- Communication
- \boxtimes Computation and Financial Literacy
- Critical Reasoning
- Technology and Information Literacy
 - Community and Civic Responsibility
 - Personal and Interpersonal Skills

TEXTBOOKS

http://kckccbookstore.com/

METHODS OF INSTRUCTION

A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE

The course outline is indicated below and is subject to change as course development dictates. Laboratory materials including, but not limited to:

- I. Study of the Celestial Coordinate System and the use of star charts.
- II. The uses of Newton's and Kepler's Laws in Astronomy.
- III. The use of Spectroscopy in the study of the sun, the plants of our solar system, and the stars.
- IV. The use of the HR diagram to understand stellar evolution.
- V. The use of the Doppler Shift in Astronomy.
- VI. Study of the optical properties of a telescope.
- VII. Distance measurements to various objects in our universe.

COURSE LEARNING OUTCOMES AND COMPETENCIES

Upon successful completion of this course, the student will:

- A. Be able to promote the understanding of the methods of observational astronomy.
 - 1. The learner will be able to describe the difference between velocity and acceleration.
 - 2. The learner will be able to employ the equations of UAL to calculate the velocity and or acceleration.
 - 3. The learner will be able to explain how force relates to velocity and acceleration.
 - 4. The learner will be able to identify or illustrate which of Newton's Laws apply in a given situation.
- B. Be able to provide the student with a laboratory experience.
 - 5. The learner will be able to employ Newton's Laws to calculate the motion caused by an applied force.
 - 6. The learner will be able to calculate the impulse applied to or the momentum of an object.

- 7. The learner will be able to identify or illustrate the concept of impulse as it applies to momentum.
- 8. The learner will be able to use the concept of the conservation of momentum to calculate the resultant motion of an object(s).

ASSESSMENT OF COURSE LEARNING OUTCOMES AND COMPETENCIES

Student progress is evaluated through both formative and summative assessment methods. Specific details may be found in the instructor's course information document.

COLLEGE POLICIES AND PROCEDURES

Student Handbook https://www.kckcc.edu/files/docs/student-resources/student-handbook-and-code-ofconduct.pdf

College Catalog https://www.kckcc.edu/academics/catalog/index.html

College Policies and Statements https://www.kckcc.edu/about/policies-statements/index.html

Accessibility and Accommodations https://www.kckcc.edu/academics/resources/student-accessibility-supportservices/index.html.