

CORE CURRICULUM COMPONENT APPLICATION
Texarkana College

Part I: Course Information

Course Type

- Existing/Restructured
 New Course

Course Prefix & Number: **PHYS 1303**

Texas Common Course Number (TCCN): **1303**

Course Title: **Stars & Galaxies**

Course Catalog Description

Stars & Galaxies (4,3,3). A journey through the entire Universe. Begin with the sun and study the life and death of stars. Included are Nebulae, Pulsars, Quasars, White Dwarfs, and Black Holes. The beginnings of the Universe and UFOs are touched upon.

Course Prerequisites:

MATH 1314, MATH 1324, or Math 1332

Available Online?

- Yes
 No

Part II: THECB Course Objectives

Upon successful completion of this course, students will:

1. Show knowledge of the properties of the sun
2. Show knowledge of stellar measurements
3. Show knowledge of star formation
4. Show knowledge of stellar evolution
5. Show knowledge of neutron stars and black holes
6. Show knowledge of galaxies
7. Show knowledge of dark matter, cosmology, and life

Part III: THECB Skill Objectives

- 1. Critical Thinking Skills:** to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- 2. Communication Skills:** to include effective development, interpretation and expression of ideas through written, oral and visual communication

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- 3. Empirical and Quantitative Skills:** to include applications of scientific and mathematical concepts.
- 4. Teamwork:** to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Part IV: Course Student Learning Outcomes (SLO)

1. Show knowledge of the properties of the sun
2. Show knowledge of stellar measurements
3. Show knowledge of star formation
4. Show knowledge of stellar evolution
5. Show knowledge of neutron stars and black holes
6. Show knowledge of galaxies
7. Show knowledge of dark matter, cosmology, and life

Skill Objective:	Critical Thinking Skills: to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
THECB Course Objective	Show knowledge of stellar measurements
Course Student Learning Outcome	Show knowledge of stellar measurements
General Learning Activities	After a discussion of star motion and types of star motion, students will take photos of Barnard’s star at different times and make measurements and calculations based on those measurements. The students will then determine which measurement shows which type of motion. Finally they will put all the individual motions together to determine the overall star movement.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to carry out the experiment on the Motion of Barnard’s star. The Critical Thinking Skills rubric will be used

Skill Objective:	Communication Skills: to include effective written, oral, and visual communication
THECB Course Objective	Show knowledge of stellar measurements
Course Student Learning Outcome	Show knowledge of stellar measurements
General Learning Activities	Students will be grouped and asked to perform the experiment on the Motion of Barnard’s star. After the data is collected, the group will be asked to write a report

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	that analyzes the results. The group will then prepare and present an oral report with overheads and Power Points of their results.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to communicate in a written report and in a class presentation the results of the experiment on the sun path. The Communication Skills rubric will be used.

Skill Objective:	Empirical and Quantitative Skills: to include applications of scientific and mathematical concepts.
THECB Course Objective	Show knowledge of stellar measurements
Course Student Learning Outcome	Show knowledge of stellar measurements
General Learning Activities	Students will make measurements and calculations. They will then synthesize ideas of motion based upon those measurements and calculations and scientific concept of star motion.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to apply scientific and mathematical principles to the analysis of the data collected in the experiment and come to a conclusion. The Empirical and Quantitative Skills rubric will be used.

Skill Objective:	Teamwork: to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
THECB Course Objective	Show knowledge of stellar measurements
Course Student Learning Outcome	Show knowledge of stellar measurements
General Learning Activities	Students will be divided into groups and given the basic concepts of group dynamics. They will work as a group to carry out the experiment and analyze it. Then they will get together as a group to prepare the report and presentation to the class. They will then present the report as a group.
Assessment <i>Must Include Assignment & Rubric</i>	The assignment will be to collect and carry out the experiment as a group and to meet as a group to analyze the data and make a report and presentation. We will use the Teamwork rubric.