Physical Science: Descriptive Astronomy, PH 104

Syllabus CRN: 42233

General Information:

Instructor Information and Availability

Instructor name: Eric McPherren
Phone number: 509-654-0806
E-mail address: mcphere@linnbenton.edu
Office hours: 4pm-5pm T Th Via Zoom: https://linnbenton.zoom.us/j/280172170
Password: gadzooks!
Optional Lectures: 10am - 12:20pm via Zoom: https://linnbenton.zoom.us/j/299634604
Password: gadzooks!
Best option to reach me is by e-mail or text. I generally respond to text messages fairly quickly. Just make sure to identify yourself and which class your message is about!

Course Materials

Required:

- A camera or scanner for certain activities
- Access to Moodle
- Access to Online Textbook: https://openstax.org/details/books/astronomy

Welcome to Astronomy!

In this course we will explore the forces inherent to our universe and how these forces arrange matter into celestial objects, including the familiar planets and stars, as well as the bizarre nature of dark matter and black holes. I truly hope this course helps you understand your place in the universe. This class is not about memorizing a ton of facts and data about planets and stars. Instead, it's about becoming familiar with the world in which we live by gaining a perspective that allows you to be confident in your observations and interpretations of that world.
Course Goals:

- To better understand the natural world. The knowledge you build in this course will encourage you to become more curious about how the universe works.
- To have a general knowledge of science so you can make more informed decisions as a contributing member to society.
- To develop and improve life-long skills such as problem solving, critical thinking, oral communication, and group work. I hope that the skills you learn and refine in this class will carry over into your other classes and your personal life.

Course Description

An introductory course covering the historical and cultural context of discoveries concerning planets and stars and their motion. Topics include models and the scientific method, astronomical tools, the solar system, star and stellar evolution, galaxies and cosmology. An accompanying laboratory is used for experiments, including outdoor observations. Prerequisite: Math 075. Counts as Physical Science Perspective for AS/OSU degrees and Science with Lab for AAOT degree.

Course Learning Outcomes

At the end of the course, a student will be able to:

- Solve scientific problems with quantitative methods.
- Describe the physical nature of the universe at the atomic, planetary, stellar, and galactic scales.
- Explain how light is used by astronomers to study the universe.
- Describe key events in the history of science, with particular emphasis on astronomy, and their impact on society.
- Describe and apply the process of scientific inquiry.

Class Policies

Behavior and Expectations

You are held accountable to the Student Code of Conduct, which outlines expectations pertaining to academic honesty (including cheating and plagiarism), classroom conduct, and general conduct.

Testing

- Tests will made available online. You will be allowed to use notes and other resources, but you will not have unlimited time, so it is still best to study!
- I will provide you with study guides for the two exams. You will use these tools to guide your preparation for the exams.

Grading

Category	Lab	Class Participation	Quizzes	Midterm	Final
Percentage of Final Grade	30%	10%	25%	15%	20%

Final Grade Calculation:

- A = 100%-90%
- B = 89.9%-80%

- C = 79.9%-70%
- D = 69.9%-60%
- F = below 60%

Exams: Midterm covers weeks 1-5. Final covers weeks 6-10.

Labs: Almost every week there is a lab. Labs are due on Sunday at Midnight at the end of every week. I will drop the lab with the lowest score. Missing more than 3 labs will cause you to fail this course.

Weekly Quizzes and Activities: You will complete weekly quizzes on Moodle. These are always due on Sunday at Midnight. Late work is not accepted but your lowest quiz score is dropped.

Incomplete grades (IN) will only be considered if a student has talked to me in advance, and a signed agreement between the student and myself is completed. IN grade are assigned only if the student has a good reason for making the request, has *only the minority of coursework to complete*, and *has scored a C or better on work that has been submitted.*

Late Assignment Policy

Late labs or quizzes will only be considered if reasonable circumstances apply.

College Policies

LBCC Email and Course Communications

You are responsible for all communications sent via Moodle and to your LBCC email account. You are required to use your LBCC provided email account for all email communications at the College. You may access your LBCC student email account through Student Email and your Moodle account through Moodle. This will be especially important for online courses where class-wide announcements are sent via Moodle to your LBCC Email.

Disability and Access Statement

LBCC is committed to inclusiveness and equal access to higher education. If you have approved accommodations through the Center for Accessibility Resources (CFAR) and would like to use your accommodations in this class, please talk to your instructor as soon as possible to discuss your needs. If you believe you may need accommodation but are not yet registered with CFAR, please visit the CFAR website at www.linnbenton.edu/cfar for steps on how to apply for services or call 541-917-4789.

Statement of Inclusion

To promote academic excellence and learning environments that encourage multiple perspectives and the free exchange of ideas, all courses at LBCC will provide students the opportunity to interact with values, opinions, and/or beliefs different than their own in safe, positive and nurturing learning environments. LBCC is committed to producing culturally literate individuals capable of interacting, collaborating and problem-solving in an ever-changing community and diverse workforce.

Title IX Reporting Policy

If you or another student are the victim of any form of sexual misconduct (including dating/domestic violence, stalking, sexual harassment), or any form of gender discrimination, LBCC can assist you. You can report a violation of our sexual misconduct policy directly to our Title IX Coordinator. You may also report the issue to a faculty member, who is required to notify the Coordinator, or you may make an appointment to speak confidentially to our Advising and Career Center by calling 541-917-4780.

Campus Police/Emergency Resources

You may review emergency services and resources at the LBCC Public Safety website. Campus Safety can be reached using the 'Code 2' button on any campus phone or by dialing x411 on campus or (541) 917-4440 off campus. Dial 911 for off campus emergencies.

Campus Resources

Learning Center

All Learning Center Services, such as tutoring and Science Help Desk will be provided remotely. https://www.linnbenton.edu/current-students/study/learning-center/

Changes to the Syllabus

Unfortunately we will all have to be pretty flexible this term. I reserve the right to change the contents of this syllabus due to unforeseen circumstances. You will be given notice of relevant changes in class, through a Moodle Announcement, or through LBCC e-mail.

Wk	Weekly Subject	Lab/Activity
1	**No Classes**	
2	Class Overview Scientific Inquiry Seasons, Lunar Phases, Eclipses	**LAB: Scientific Measurements**

3	Constellations History of Astronomy, Planetary Motion, Gravity	**LAB: Kepler's Laws**
4	Light Spectroscopy, Telescopes	**LAB: Stellar Spectra**
5	Solar System Overview, Planets, Asteroids and Comets	**LAB: Solar System Group Project**
6	Solar System: Rings, Moons, Exoplanets, **Midterm**	**LAB: No LAB**
7	The Sun, Physical Characteristics of Stars	**LAB**: **Physical Characteristics of Stars**
8	Measuring Stars, Life and Death of Stars	**LAB: H-R Diagrams**
9	Supernovae/Black holes/Neutron Stars, The Milky Way and other Galaxies	**LAB: Cepheid Variables**
10	Cosmology, Extraterrestrial Life	**LAB: Expansion of the Universe**
11	**Final**	