

PH104 - Descriptive Astronomy Syllabus

General Information

Instructor Information and Availability

Instructor name: Ben Stanley

E-mail address: stanleb@linnbenton.edu

Office hours: Wednesday 1-2 pm, (or available by appointment)

Office: <https://linnbenton.zoom.us/j/92640663886>, Password: PH104

Course Information

Fall 2020

CRN: 22610

Number of credits: 4

Virtual time and days (not required): 1 pm-2 pm on M/Tu

Classroom: <https://linnbenton.zoom.us/j/94186118220>, Password: PH104

Virtual time and days (**required**): 1-3:20 pm Th

Classroom: <https://linnbenton.zoom.us/j/95804126098>, Password: PH104

Prerequisites:

MTH 075 Variables and Linear Equations or equivalent with a grade of "C" or better.

Course Materials

Required:

- Textbook: [OpenStax Astronomy](#), by Fraknoi, Morrison, Wolff
 - This is text is an open, educational resource and is available for free

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.

Plan for the term due to COVID-19:

There is only one required class time (Thursday 1-3:20 pm), though I do plan to record my lectures on Monday and Tuesday as listed above. If you are able to attend the lecture recording times, I encourage you to do so, but all lectures will be recorded and posted to Moodle afterward. The Thursday session will be our lab time and also time to ask questions and do some short active learning exercises. I will be available to help, and you may also work in groups with other students via Zoom if you desire. I will also be available via Zoom during office hours or by appointment.

Student Learning Outcomes

1. Solve scientific problems with quantitative methods.
2. Describe the physical nature of the universe at the atomic, planetary, stellar, and galactic scales.
3. Explain how light is used by astronomers to study the universe.
4. Describe key events in the history of science, with particular emphasis on astronomy, and their impact on society.
5. 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 are taken individually, and are closed note and book.
- Once tests are returned to the class they cannot be made up.
- The Final Exam will be available starting Monday (12/14) at 6 am and will close Wednesday (12/16) at midnight.

Grading

- 2 Exams = 100 points (50 points each)
 - Comprehensive Final Exam = 100 points
 - Labs = 105 points
 - Reading Quizzes = 90 points
- Total = 395 points

Final Grade Calculation:

- A = 395-355.5 points
- B = 354.5-316 points
- C = 315-276.5 points
- D = 275.5-237 points
- F = below 237 points

Exams: Exam 1 covers weeks 1-3. Exam 2 covers weeks 4-6. Each are 50 points. Exams will be taken via Moodle.

Comprehensive Final Exam: This exam covers the entire 10 week course and will take place during Finals week via Moodle.

Labs: Labs will be held via Zoom on Thursdays. Lab reports are due by the following

Monday. Labs cannot be made up but I drop your lowest score. Labs will be submitted via Moodle.

Reading Quizzes: I provide reading guides on Moodle. You will fill these out and use them as reference/notes for the reading quizzes taken via Moodle. I will drop your lowest score. Reading quizzes are taken on Mondays, open starting at 6 am for 24 hours. Each Reading quiz will check your understanding of the material from the previous week.

Calculator Policy: Students may use **any calculator** (that is not a cell phone) on Moodle assignments. However, a calculator is not required for this course.

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 is 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

No work can be made up after it is returned to the class. **One lab and one reading quiz will be dropped.**

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.

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

The Learning Center provides academic support and a comfortable place to study. It is located on the second floor above the Library. It also provides free tutoring services for all classes.

Learning Center Online: <https://www.linnbenton.edu/current-students/study/learning-center/>

I recommend all of their services. These are the resources I think are particularly helpful this class: Science Help Desk (all the way at the bottom), Tutoring Services, Math Help Desk

Roadrunner Resource Center

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Roadrunner Resource Center for support (Resources@linnbenton.edu, 541-917-4877, or visit the website <https://www.linnbenton.edu/current-students/student-support/roadrunner-resource-center.php>). The office can help students get connected to resources to help. Furthermore, please notify me if you are comfortable in doing so. This will enable me to provide any resources, knowledge or connections that I may possess to help aid.

Linn-Benton Lunch Box

The LB Lunch Box provides an emergency supply of food for students in need. <https://www.linnbenton.edu/current-students/involvement/student-resources/lb-lunch-box.php>

Other due to COVID-19:

The college has an amazing [FAQ](#) page about how the term will work (and how to access basic needs resources, such as food and rent if you need them).

If you do not have access to a computer, call the LBCC library at 541-917-4630. If you do not have internet access, there are many [options](#).

A note on Zoom: I know not everyone will be able to participate in the lecture recordings, but I hope many of you will. (It is okay if you have kids at home or pets!) Zoom uses your computer (or phone) camera and audio, so you can see me and other students. In this time of isolation, Zoom can really connect us and help to develop a class community. To get started with Zoom, all you need to do is go [here](#), and sign in with your LBCC email and password. This will create your Zoom account automatically. Your first use of Zoom will require a one-time download. The Zoom mobile app works similarly.

Changes to the Syllabus

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.

Note: Changes are much more likely to occur this term due to troubleshooting new solutions for labs and activities in a science classroom. I will do my best to not change things around too much, but please be warned and flexible if things do need to change. My expectations for you are highly relaxed due to the many changes and I ask for the same in return.

Class Schedule

Due dates every week:

- **Labs are due the following Monday at 11:59 pm**
- **Reading Quizzes/Exams taken on Mondays - open starting at 6 am for 24 hours.** Each Reading Quiz will check your understanding of the material from the previous week. Exam 1 covers weeks 1-3. Exam 2 covers weeks 4-6.

Week	Reading	Monday	Tuesday	Thursday
1 (9/28)	1.1-1.5, 4.2-4.5, 4.7	Introductions Scientific models	Seasons, Lunar phases, eclipses	Lab 1: Scientific Measurements
2 (10/5)	2.1-2.2, 2.4, 3.1-3.4	Reading Quiz #1 History of astronomy	Planetary motion and gravity	Lab 2: Kepler's Laws
3 (10/12)	5.1-5.3, 6.1-6.4	Reading Quiz #2 Light and spectroscopy	Telescopes	Lab 3: Spectral Analysis
4 (10/19)	7.1-7.2, 7.4	Exam 1	Solar System: Overview	Lab 4: Our Solar System
5 (10/26)	8.3, 10.1, 10.3, 10.5 11.1-11.2, 13.1, 13.3, 14.1	Reading Quiz #3 Solar system: Planets	Solar system: asteroids, comets, and meteorites	Lab 5: Parallax and Blackbody Radiation
6 (11/2)	9.1, 9.2, 12.1-12.3, 15.1-15.3, 16.1-16.4, 21.4-21.5	Reading Quiz #4 Solar system: rings, moons, exoplanets	The Sun	Lab 6: Internal Structures of Stars
7 (11/9)	17.1-17.3, 18.1, 18.4	Exam 2	Measuring stars 1	Lab 7: The H-R diagram
8 (11/16)	19.1-19.4, 21.1-21.2, 22.1, 22.4,	Reading Quiz #5 Measuring stars 2	Life cycle of stars	Lab 8: Cepheid Variable Stars
9 (11/23)	23.1-23.2, 23.4, 24.1- 24.5, 24.7	Reading Quiz #6 Death of stars and supernovae	Relativity and black holes Gravitational Waves	NO CLASS; THANKSGIVING
10 (11/30)	25.1, 25.3, 26.1, 26.2, 26.5, 29.1- 29.5	Reading Quiz #7 The Milky Way Galaxies	The Big Bang	Final Review
Finals		Final exam will be available during Finals week (12/14-12/16)		