



BOISE STATE UNIVERSITY

# PHYS104/204 Syllabus - Fall 2016



[http://www.nasa.gov/mission\\_pages/kepler/news/kepler-62-kepler-69.htm](http://www.nasa.gov/mission_pages/kepler/news/kepler-62-kepler-69.htm)

*Kepler-62 Morning Star. This artist's concept depicts in the foreground planet Kepler-62f, a super-Earth-size planet in the habitable zone of its star which is seen peeking out from behind the right edge of the planet.  
Credit: NASA/Ames/JPL-Caltech.*

## The Big Picture

Where did life on Earth come from? Is there life elsewhere in the Universe? How could we find it? Can we communicate with extraterrestrial civilizations?

In these courses, students will investigate modern answers to these ancient questions and learn how our solar system formed, how conditions on the early Earth may have given rise to life, and why astronomers think the universe may be bursting with life.

## Course Description

**PHYS104 - Life in the Universe** is an introductory astronomy course designed for science and non-science majors about the origins and requirements for life to arise, seen primarily in an astronomical context.

**PHYS204 - Planetary Astronomy** is also an intro astronomy course but geared specifically to Physics majors planning to take an Astrophysics Emphasis.

Both classes comprise twice weekly lectures and once weekly labs. Some of these lab meetings will occur at night to allow us to do astronomical observing. Grades are based on in-class activities, homework assignments, labs, and exams. There are also a few opportunities to earn extra credit.



## Prof. Brian Jackson

is a planetary astronomer who finds and studies extrasolar planets, planets outside of our solar system.

**Office:** Multi-Purpose Classroom Bldg 419

**Office Hours:** W 3-5 pm or by appointment

**E-mail:** [bjackson@boisestate.edu](mailto:bjackson@boisestate.edu)

**Phone:** (208) 426-3723

## Meeting Times and Places

**Lecture:** Wednesdays and Fridays, 9-10:15a in Multipurpose Building (MB), Lecture Hall 101

**PHYS104 Lab:** Tuesdays in MB, Room 301

Section A: 9-11a -- TA: Anne Brinegar ([AnneBrinegar@u.boisestate.edu](mailto:AnneBrinegar@u.boisestate.edu))

Section B: 12-2p, C: 3-5p -- TA: Emily Jensen ([emilyjensen1@u.boisestate.edu](mailto:emilyjensen1@u.boisestate.edu))

**PHYS204 Lab:** Wednesdays, 12-2:45p in MB, Room 301 -- TA: Prof. Brian Jackson

**Office Hours:** Wednesdays, 3-5p in MB, Room 419

## Course Materials (required)

[The Cosmic Perspective, ed. 8](#) -- The Seventh Edition should also be fine.

[Pearson's Modified Mastering Astronomy](#) -- You should have received an access code if you purchased your textbook from the campus bookstore. To register, **do not go to the Mastering Astronomy website**. Click on the Mastering Astronomy link on the left side of the PHYS 104/204 Blackboard page. If you did not purchase the textbook from the bookstore, you can pay online with a credit card after clicking the Blackboard link.

## Grades

Graded assignments can be retrieved from the astronomy lab. Final grades are based on the following course components:

- **Introductions (10 points)** -- You are required to schedule a 10-min meeting with Prof. Jackson via e-mail ([bjackson@boisestate.edu](mailto:bjackson@boisestate.edu)) by Sep 30.
- **Regular Semester Exams (3 exams, 100 points each)** -- In-class, closed-book, closed-note, multi-choice using scantron sheets, so bring a pencil.
- **Final exam (200 points)** -- Same as regular exams except longer.
- **Labs (14 Labs, 20 points each)** -- Each week, the lab handouts will be available on the course Blackboard site.

Labs are graded pass/fail, but your instructor must check and sign off on your completed lab report. You must also sign the lab pack and attendance sheet before leaving. Keep the lab report until your grade is posted on Blackboard.

The lowest lab grade will be dropped, so attend at least 13 labs. Missing more than one lab does NOT mean you will fail the class. If you attend all labs, the points from the 14th lab will count as extra credit.

- **Homework (HW) (50 points total)** -- You will have several short homeworks in Mastering Astronomy, and at the end of the semester, the total points for these assignments will be re-scaled to 50 points.

## Grades (cont.)

- **In-Class Activities (ICA) (50 points total)** -- You will also have in-class exercises and quizzes, graded pass/fail. At the end of the semester, the total points will also be re-scaled to 50 points.
- **Extra Credit (30 points max)** -- There are a few opportunities to receive extra credit (in addition to attending all the labs), each worth 15 points. You can choose two of the following: (1) go to a [Boise Astronomical Society](#) viewing session, (2) go to the [Discovery Center of Idaho](#), (3) go to the [Bruneau Sand Dunes Observatory](#), or (4) attend one of Physics' regular seminars (Prof. Jackson will notify you about these). Extra credit is due by the start of class on Dec 9. To receive credit for a museum visit/astronomy viewing session, you must e-mail Prof. Jackson a photo of yourself in front of a display at the event. For seminars, you must sign the attendance sheet.

One of the exams (NOT the final), all the HW, or all ICA points will be dropped, whichever is worst. ***There is no make-up work*** at the end of the semester. The following table shows the fraction of points you must earn to receive a letter grade:

A: 92.5%	A-: 90%	B+: 87.5%	B: 82.5%	B-: 80%	C+: 77.5%
C: 72.5%	C-: 70%	D+: 67.5%	D: 62.5%	D-: 60%	F: < 60%

## Academic Integrity

All students must adhere to Boise State University's Student [Code of Conduct](#) on academic dishonesty. Though you can get ideas from other sources and work together, assignments you submit must be your original work and cannot be used in other courses.

## Accommodating Disabilities

Students with disabilities needing accommodations should contact the Disability Resource Center (DRC). All accommodations must be approved through the DRC prior to being implemented. Visit the DRC's website at <http://drc.boisestate.edu/students/getting-started/>.

## University Support of Student Well-Being

Boise State is committed to the safety and well-being of our college students, faculty, and staff. If you are concerned about the behavior or safety of a member of the campus community or are in need of support yourself, please share your concerns with the CARE team by submitting a report of concern at [care.boisestate.edu](http://care.boisestate.edu). When in doubt, reach out!

# Course Schedule

Date	Topic/Exam	HW Due	Weekly Lab
Wed, Aug 24	Ch. 1, A Modern View of the Universe		No labs this week
Fri, Aug 26		Ch. 1	
Wed, Aug 31	Ch. 2, Discovering the Universe for Yourself		Scale of the Solar System
Fri, Sep 2		Chs. 1&2	
Wed, Sep 7	Ch. 3, The Science of Astronomy		Motion of the Celestial Sphere
Fri, Sep 9		Ch. 3	
Wed, Sep 14	<b>Exam 1</b>		Planetary Motions
Fri, Sep 16	Ch. 4, Making Sense of the Universe		
Wed, Sep 21			Lunar Phases
Fri, Sep 23	Ch. 5, Light and Matter	Ch. 4	
Wed, Sep 28			Astronomical Spectra
Fri, Sep 30	Ch. 7, Our Planetary System	Ch. 5	
Wed, Oct 5	<b>Exam 2</b>		
Fri, Oct 7	<b>Night Observing Lab at 7:30pm</b>		No regular lab this week
Wed, Oct 12	Ch. 8, Formation of the Solar System		Temperatures and Formation of the SS
Fri, Oct 14		Ch. 7	
Wed, Oct 19	Sec. 9.1-9.2, 9.4, 9.6, Planetary Geology		Lunar Cratering
Fri, Oct 21		Ch. 8	
Wed, Oct 26	Sec. 10.1-10.2, 10.6, Planetary Atmospheres		Greenhouse Effect
Fri, Oct 28	Ch. 13, Other Planetary Systems; Review	Ch. 9	
Wed, Nov 2	<b>Exam 3</b>		Comp. Sim. of Greenhouse Effect
Fri, Nov 4			
Wed, Nov 9	Ch. 24, Life in the Universe		Detecting Exoplanets
Fri, Nov 11		Chs. 10 & 13	
Wed, Nov 16			Habitability
Fri, Nov 18	V	Ch. 24	

# Course Schedule

Date	Topic/Exam	HW Due	Weekly Lab
Wed, Nov 23	<b>THANKSGIVING BREAK</b>		
Fri, Nov 25	<b>THANKSGIVING BREAK</b>		
Wed, Nov 30	Life in the Universe		Habitable Zone
Fri, Dec 2		Complexity	
Wed, Dec 7			Drake Equation
Fri, Dec 9	V		
Fri, Dec 16	<b>FINAL EXAM in the usual classroom</b>		