

**Instructor:** David Cook                      dcook12@uwyo.edu

**Office:** PS103-b

**Office Hours:**

**Class Time:** M T W R F    10:35-11:55

   T W R    1:20-2:40

**Classroom:** PS132

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## Course Description

This course is structured to encourage learning by experimenting with data and drawing conclusions based on this data. **We will not have separate lab section.** Instead, there will be a short (~15 minute) lecture followed by an activity or lab designed to help the student discover the concept through hands on experience. Working in groups is highly encouraged.

## Attendance

Attendance to class is **STRONGLY ENCOURAGED**. At the end of each class period of the semester (morning and afternoon are separate), I will provide and collect a 3x5 index card which you will write your name and a 1-2 sentence statement of what concept you thought was important during the class period. Attendance is not strictly graded, but can be used to replace a bad exam score (see Grading section).

If you need to miss class on the date of an exam, this will simply be the exam grade that you replace (see Grading section). If you have already missed one exam, and you have a university-excused absence, please see me about how to make up your exam.

## Required Materials

- **Book:** Investigating Astronomy: A Conceptual View of the Universe. Timothy F. Slater & Roger A. Freedman
- **Lecture Tutorial:** Lecture-Tutorials for Introductory Astronomy. Edward E. Prather, Timothy F. Slater, Jeffrey P. Adams & Gina Brissenden, 3<sup>rd</sup> edition
- Occasionally, you will need a calculator in class. A basic scientific calculator will work well.

## Online Materials/Tools

I have made a course website located:

<http://www.physics.uwyo.edu/~davec/teaching/Astro1050Summer2013/>

Important notices, exam keys, observing project information, and useful links will be posted here.

There is also an open-access Companion Website available at the text's website, which is one of the reasons I chose this text. There is lots of good stuff there that can help you out like concept reviews, self-study review quizzes, star charts, animations, interactive exercises, etc. I highly recommend you take a look at these resources, especially the animations. The spatial reasoning is hard to perceive and these animations do a fantastic job of giving you a good feel for how these concepts work. You can also sign up through the website to gain access to online quizzing. These quizzes are not required for the course, but is a great study material for the exams. The web address is:

[www.whfreeman.com/slater](http://www.whfreeman.com/slater)

## Grading

There will be 3 exams (no comprehensive final), many lab activities, and an observing project. Each of these will contribute the following to your overall grade:

- Exams (3)      50%
- Labs            30%
- Obs Project    20%

**IF your attendance is above 70%**, you can replace your lowest exam score with your attendance grade. What I am hoping is that you will see attendance as a way to boost your grade, which it will do if you show up to class. Thus, you can slip up on one of the exams, and simply drop that score from your final grade. Basically, I want to reward students for coming to class and participating.

Final grades will be calculated based on:

- 90-100%      A
- 80-89%        B
- 70-79%        C
- 60-69%        D
- 0-59%          F

## Observing Project

The observing project is an activity that requires each student to make at least 15 observations of the Moon throughout the semester. A certain number of observations will be due at certain times during the semester. There is a **Final Project write up that will be due Thursday June**

27<sup>th</sup>. This final project write up will be handed out in class the second to last week of class. Your observing project will be graded on the observations themselves and the final write up.

### Special Accommodations

If you have a physical, learning, or psychological disability and require accommodations, please let me know as soon as possible. I am happy to discuss this with you, and want to do what I can to help you succeed. You will need to register with, and provide documentation of your disability to, University Disability Support Services (UDSS) in SEO, room 330 Knight Hall, 307-766-6189, TTY: 307-766-3073.

### Academic Honesty

I will be adhering to the university's policy on academic honesty and integrity. I will encourage you to work with your classmates as much as possible during class activities, and outside of class. However, when taking quizzes, exams, or working on assignments, do your own work. Any indication of sharing or getting your work from others will result in a zero for that quiz, exam, or assignment, and could also result in formal proceedings for academic misconduct.

### Tentative Class Schedule:

| Date   | time                           | Lecture/Lab                                      | Reading |
|--------|--------------------------------|--|---------|
| • 5/20 | 10:35-11:55                    | Intro/Syllabus/TOAST                             |         |
| • 5/21 | 10:35-11:55                    | Celestial Sphere                                 | 1.1-1.2 |
| • 5/21 | 1:20-2:40                      | Nightly Motion of Stars                          | 1.3     |
| • 5/22 | 10:35-11:55                    | Lab: Planetarium                                 |         |
| • 5/22 | 1:20-2:40                      | Observing Project                                |         |
| • 5/23 | 10:35-11:55                    | Lab: Moving Constellations                       |         |
| • 5/23 | 1:20-2:40                      | Motion of the Sun/Lab: Sun's Position and Motion | 1.4     |
| • 5/24 | 10:35-11:55                    | Seasons/Activity: Angles of Sun Light            |         |
| • 5/27 | ***No Class - Memorial Day *** |  |         |
| • 5/28 | 10:35-11:55                    | The Motion of the Moon                           | 1.5     |
| • 5/28 | 1:20-2:40                      | Planetary Motions                                | 3.1-3.3 |
| • 5/29 | 10:35-11:55                    | Lab: Assessment Case Study                       |         |
| • 5/29 | 1:20-2:40                      | Keplerian Orbits/ <b>3 Moon Obs Due</b>          | 3.4     |
| • 5/30 | 10:35-11:55                    | Newtonian Gravity                                | 3.5-3.6 |
| • 5/30 | 1:20-2:40                      | Review Session                                   |         |
| • 5/31 | 10:35-11:55                    | <b>Exam 1</b>                                    |         |
| • 6/3  | 10:35-11:55                    | Solar System Overview/Formation                  |         |
| • 6/4  | 10:35-11:55                    | Earth  |         |
| • 6/4  | 1:20-2:40                      | Lab: Inquiring about Earth's Weather             |         |
| • 6/5  | 10:35-11:55                    | The Moon   |         |
| • 6/5  | 1:20-2:40                      | Lab: Geology and impacts                         |         |
| • 6/6  | 10:35-11:55                    | Terrestrial and Jovian Planets                   |         |
| • 6/6  | 1:20-2:40                      | Solar System Moons/Asteroids/Comets              |         |

- 6/7 10:35-11:55 Lab: Jupiter's Moons
- 6/10 10:35-11:55 Nature of Light /**6 Moon Obs Due**
- 6/11 10:35-11:55 Blackbody Radiation
- 6/11 1:20-2:40 Light & atoms and Spectra
- 6/12 10:35-11:55 Lab: Spectroscopy Lab
- 6/12 1:20-2:40 The Sun
- 6/13 10:35-11:55 Lab: Observing Features on the Sun
- 6/13 1:20-2:40 Review Session
- 6/14 10:35-11:55 **Exam 2**
- 6/17 10:35-11:55 Stars
- 6/18 10:35-11:55 HR diagram
- 6/18 1:20-2:40 Lab: HR diagram
- 6/19 10:35-11:55 Stellar Evolution
- 6/19 1:20-2:40 Lab: History of Matter
- 6/20 10:35-11:55 Exoplanets
- 6/20 1:20-2:40 Lab: Studying Extrasolar Planets
- 6/21 10:35-11:55 Star Formation
- 6/24 10:35-11:55 telescopes/Lab: AstroPics /**9 Moon Obs Due**
- 6/25 10:35-11:55 The Milky Way
- 6/25 1:20-2:40 Galaxies
- 6/26 10:35-11:55 Lab: Galaxy Zoo
- 6/26 1:20-2:40 Cosmology
- 6/27 10:35-11:55 Lab: Expanding Universe
- 6/27 1:20-2:40 Final Review/**Moon Project Due**
- 6/28 10:35-11:55 **Final Exam**