

CASPER COLLEGE COURSE SYLLABUS  
**ASTR 1050 01: Survey of Astronomy**

**Semester/Year:** Fall 2015

**Lecture Hours:** 3                      **Lab Hours:** 2                      **Credit Hours:** 4

**Class Time:** 1:00 – 1:50 PM      **Days:** MWF                      **Room:** PS 209

**Lab A Time:** 1:00 – 2:50 PM      **Lab A:** T                      **Room:** PS 208

**Lab B Time:** 3:00 – 4:50 PM      **Lab B:** W                      **Room:** PS 208

**Lab C Time:** 2:00 – 3:50 PM      **Lab C:** Th                      **Room:** PS 208

**Instructor's Name:** Jared Bowden

**Instructor's Contact Information:**                      **Office Phone:** (307)268-2064                      **Email:** jbowden@caspercollege.edu

**Office Hours:** T 9:30 – 11:00 AM; Th 10:30 – 11:30 AM; F 12:00 – 1:00 PM

**Web Conference Hours:** M 2:00 – 3:00 PM; Th 9:30 – 10:30 AM

**Course Description:** A survey of astronomy and the universe. Topics will include astronomical concepts, terms, and history, as well as a study of stellar evolution, galaxies, cosmology, and the solar system. The lab is an exercise into the concepts and methods used by astronomer in their study of the universe.

**Statement of Prerequisites:** MATH 0900

**Goal:** The Department will instruct students on knowledge gathering techniques and the understanding of basic physical concepts at a level appropriate to the class level and the student's individual career goals. A well instructed science student will be able to take a problem, analyze it both qualitatively and quantitatively, find a solution, and present the solution to others in an appropriate manner conducive to the knowledge level of the audience.

In Astronomy 1050, students will gain a working knowledge of basic physical world and the universe around them. Students will use both qualitative and quantitative problem-solving skills to answer a variety of physics problems based around concepts in astronomy.

**Outcomes:** The bolded outcomes below apply from the Casper College General Education outcomes.

1. Demonstrate effective oral and written communication
- 2. Use the scientific method**
- 3. Solve problems using critical thinking and creativity**
4. Demonstrate knowledge of diverse cultures and historical perspectives
5. Appreciate aesthetic and creative activities
6. Use appropriate technology and information to conduct research
7. Describe the value of personal, civic, and social responsibilities
- 8. Use quantitative analytical skills to evaluate and process numerical data**

## Course Objectives:

Passing students should:

- Be proficient in SI unit conversions
- To become familiar with the scientific method and how it works by using it in experimental contexts
- Understand physical properties of objects, such as volume, density, and weight/mass
- Understand the differences between astronomy and astrology
- Qualitatively describe the science of stellar spectra and how it is used in astronomy
- Qualitatively describe planetary atmospheres (both of the Earth AND other planets)
- Be able to explain current theories on the creation of the solar system at an acceptable level
- Compare and contrast terrestrial and jovian planets
- Qualitatively describe the life cycle of stars of varying masses
- Describe in depth our sun, including atmosphere and energy sources

**Methodology:** This course will be presented in a variety of methods. Most information will be presented in a lecture format, which will include board-work, power-point presentations and small group work activities. The students will then use the information taken from lecture and use it in a laboratory setting, where individual and small group work will be used as assessment tools. Your feedback is valuable as the instructor uses course evaluations in determining course methodology.

## Evaluation Criteria:

This class will have a Quiz and a Homework Assignment each week. Lab assignments will be graded upon completion of the exercise. All homework and quizzes are found on the masteringastronomy website and will be graded there. Your top 12 quizzes, top 12 homeworks, and 12 lab assignments will be scored in the final grade.

Further, students will be asked multiple questions using a “clicker” system in the classroom (Learning Catalytics.) Approximately 140 multiple choice questions will be asked throughout the semester; these questions will be counted towards a Final grade. If, by the end of the semester, a student is not satisfied with that clicker grade, they will be able to take a multiple choice final to be scored in its place. A student will not be able to make-up clicker questions that occurred when a class period was missed.

Method	Points for Each	Total Points	% of Total Grade
12 Best Quizzes	25	300	30%
12 Best HW Assignments	20	240	24%
12 Lab Assignments	15	180	18%
140 Questions (or a Final)	2	280	28%
<b>TOTAL FOR THE COURSE</b>		<b>1000</b>	<b>100%</b>

Grading Scale for the Course:

$900 \leq A \leq 1000$

$800 \leq B \leq 899$

$700 \leq C \leq 799$

$600 \leq D \leq 699$

$0 \leq F \leq 599$

**Casper College may collect samples of student work demonstrating achievement of the above outcomes. Any personally identifying information will be removed from student work.**

**Required Text, Readings, and Materials:**

**The Cosmic Perspective, 7<sup>th</sup> Edition**, Bennett, Donahue, Schneider, and Voit  
**Exploring the Universe, A Laboratory Guide for Astronomy**, Reynolds & Bakich  
**MasteringAstronomy**: See <http://www.masteringastronomy.com/>

**Class Policies:**

ALL homework and quizzes are due on Sundays at 11:59 PM MDT the week they are assigned unless otherwise stated.

Homework have the following late policy: 0.5% will be deducted for each hour the assignment is late. 1 minute late is your first hour deduction, 1 hour and 1 minute is your second deduction, and so on.

Quizzes are timed and will not be accepted if late. You have 60 minutes per quiz, so the latest you should begin to take your quiz is 10:59 PM on Sunday.

Lab activities are completed within the time allotted during scheduled lab hours. Due to their complex nature and required group work, labs will not be allowed to be made up. With instructor permission given for absences due to school-related absences, an assignment will be given in place of the lab missed.

Clicker questions will not be allowed to be made up due to their interactive nature. Students with excessive absences are strongly encouraged to take the final to replace a poor clicker grade.

**Last day to change to an audit or withdraw from the course:** November 12<sup>th</sup>, 2015.

**Student Rights and Responsibilities:** Please refer to the Casper College Student Conduct and Judicial Code for information concerning your rights and responsibilities as a Casper College Student.

**Chain of Command:** If you have any problems with this class, you should first contact the instructor to attempt to solve the problem. If you are not satisfied with the solution offered by the instructor, you should then take the matter through the appropriate chain of command starting with the Department Head/Program Director, the Dean, and lastly the Vice President for Academic Affairs.

**Academic Dishonesty:** (Cheating & Plagiarism) Casper College demands intellectual honesty. Proven plagiarism or any form of dishonesty associated with the academic process can result in the offender failing the course in which the offense was committed or expulsion from school. See the Casper College Student Code of Conduct for more information on this topic.

**Official Means of Communication:** Casper College faculty and staff will employ the student's assigned Casper College email account as a primary method of communication. Students are responsible to check their account regularly. This is also, where you will find course evaluation links during course evaluation periods.

**ADA Accommodations Policy:** If you need academic accommodations because of a disability, please inform me as soon as possible. See me privately after class, or during my office hours. To request academic accommodations, students must first consult with the college's Disability Services Counselor located in the Gateway Building, Room 344, (307) 268-2557, [bheuer@caspercollege.edu](mailto:bheuer@caspercollege.edu). The Disability Services Counselor is responsible for reviewing documentation provided by students requesting accommodations, determining eligibility for accommodations, and helping students request and use appropriate accommodations.

**TENTATIVE COURSE SCHEDULE (Subject to Change)**

<b>Week</b>	<b>Chapters Covered</b>	<b>Topics</b>
1	1	A Modern View of the Universe
2	1	A Modern View of the Universe
3	7	Our Planetary System
4	8	Formation of the Solar System
5	11	Jovian Planet Systems
6	12	Asteroids, Comets and Dwarf Planets
7	13	Other Planetary Systems
8	-	Make-Up Week/Midterm Week
9	14	Our Star
10	16	Star Birth
11	18	The Bizarre Stellar Graveyard
12	22	The Birth of the Universe
13	22	The Birth of the Universe
14	23	Dark Matter, Dark Energy and the Fate of the Universe
15	24	Life in the Universe
16		Make-Up Week
Dec 14 – Dec 17	Finals Week	