

# PHY100: Intro to Descriptive Astronomy

Spring 2020, 4 credits

*MW 2:15PM-3:45PM*

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**Office hours:** TTh 12:30-2, F 12:30-3

**Textbook:** *The Cosmic Perspective Fundamentals, 2e* by Bennett

(Note: If you purchase a used copy of the book you can purchase Mastering Astronomy access separately at [www.masteringastronomy.com](http://www.masteringastronomy.com))

**MasteringAstronomy:** As part of this course we will be using *MasteringAstronomy*, a website with tutorials, videos, quizzes and activities. You must purchase access to this site, which will come with your textbook if you purchase it new. You can also just purchase *MasteringAstronomy* access, which will come with an eText version of the textbook. The course ID that you will be prompted to enter is **MEIERPHY100SP20**.

## ISBNs

Just the text: 978-0133889567

Text plus MasteringAstronomy access: 978-0134478463

MasteringAstronomy access plus eText: 978-0133994070

## OBJECTIVES OF THE COURSE

This course aims to target your skills, content knowledge, and attitudes about science.

### *Skills:*

- Improve your ability to read and interpret science news and articles.
- Improve your quantitative reasoning with estimation and approximation.
- Develop your ability to use mathematical formulae and graph to represent and solve complex problems.
- Improve skills in writing, researching, and presenting on scientific topics.

### *Content Knowledge:*

- Develop a broad view of what we know of our Solar System (and others).
- Understand the forces that shape the Solar System, the planets, and the universe at large.
- Develop a broad view of our galaxy and how galaxies have formed and evolved.
- Understand the theories that describe the evolution of the universe.

### *Attitude about science:*

- Understand how astronomers and astrophysicists figured out what we know.
- Understand what types of evidence are used to support scientific claims.
- Approach the world with a bit more wonder.

## COURSE REQUIREMENTS

1. *Attendance and Class Participation* – Be an active participant in class. Asking and answering questions is an integral part of learning. If you miss class, you may miss an important piece of information. The classroom experience will be much more successful and productive if you are prepared for class. You are responsible for making up any work missed. You may have 4 unexcused absences from class. The 5<sup>th</sup> absence will result in a one-letter grade deduction from your course grade at the end of the semester. The 6<sup>th</sup> absence will result in an FA grade for the course.
2. *Preclass Assignments* – Every day before class you will have a portion of the textbook to read and a brief assignment due on MasteringAstronomy. These assignments have two purposes: the first is to encourage you to actually do the reading, and the second is to let me know what you all are interested in learning about/discussing. To give myself time to prepare based on your comments, **these assignments are due at noon.** You can miss 6 of these assignments without penalty. Additional readings may be distributed on Moodle.
3. *MasteringAstronomy Homework* – Each week (except for exam weeks) you will be expected to complete a homework assignment on the *MasteringAstronomy* site. These assignments will be due at 11:59PM on Friday. These assignments are intended to improve your understanding of the course content and quantitative skills. **No late homework will be accepted.**
4. *Written Homework and Labs* – Most weeks you will have a written assignment that will be due in class on the due date specified on the course calendar. These homework assignments will improve your skills in writing, reading, and interpreting scientific results. **No late homework will be accepted.**
5. *Nobel Paper* - a 5-7 page paper on one of this year's Physics Nobel Prize winners. An annotated bibliography and draft of the paper will be submitted during the course of the semester; due dates are listed on the course schedule. Details of this assignment will be discussed the week after spring break.
6. *Exams* – There will be two midterm exams. Exam dates are listed on the following schedule. I will notify you in class if any changes are necessary. There will be no make-up exams, except in extraordinary circumstances, to be discussed with me ahead of time if at all possible.

**Technology in the classroom:** Cellphones may be kept on desks if in silent/vibrate mode. Students observed texting or using their phones for non-course related purposes will be asked to stow their phone for the remainder of the class. Laptops and tablets should not be used in class except when I have specified that we will need them for an activity. If you use an eText and need access to the textbook during class, please inform me of this. If you are observed to be using your laptop or tablet for non-course related purposes, you will be asked to stow the device. If you have a documented reason for using technology in the classroom, please inform me.

**Dropping the Course:** The course may be dropped with a grade of W through Monday, March 16th (provided that the student's work to that point has been of passing quality). After this date the grade of W will be assigned only in the case of withdrawal from the University or prolonged illness.

**Academic Honesty:** Persons who come to Oglethorpe University for work and study join a community that is

committed to high standards of academic honesty. The honor code contains the responsibilities we accept by becoming members of the community and the procedures we will follow should our commitment to honesty be questioned.

The students, faculty and staff of Oglethorpe University expect each other to act with integrity in the academic endeavor they share. Members of the faculty expect that students complete work honestly and act toward them in ways consistent with that expectation. Students are expected to behave honorably in their academic work and are expected to insist on honest behavior from their peers.

Oglethorpe welcomes all who accept our principles of honest behavior. We believe that this code will enrich our years at the University and allow us to practice living in earnest the honorable, self-governed lives required of society's respected leaders.

Our honor code is an academic one. The code proscribes cheating in general terms and also in any of its several specialized sub-forms (including but not limited to plagiarism, lying, stealing and interacting fraudulently or disingenuously with the honor council). The Code defines cheating as "the umbrella under which all academic malfeasance falls. Cheating is any willful activity involving the use of deceit or fraud in order to attempt to secure an unfair academic advantage for oneself or others or to attempt to cause an unfair academic disadvantage to others. Cheating deprives persons of the opportunity for a fair and reasonable assessment of their own work and/or a fair comparative assessment between and among the work produced by members of a group. More broadly, cheating undermines our community's confidence in the honorable state to which we aspire."

The honor code applies to all behavior related to the academic enterprise. Thus, it extends beyond the boundaries of particular courses and classrooms *per se*, and yet it does not extend out of the academic realm into the purely social one.

Examples of cheating include but are not limited to:

- 1.1 The unauthorized possession or use of notes, texts, electronic devices (including, for example, tablets, computers and smartphones), online materials or other such unauthorized materials/devices in fulfillment of course requirements.
- 1.2 Copying another person's work or participation in such an effort.
- 1.3 An attempt or participation in an attempt to fulfill the requirements of a course with work other than one's original work for that course.
- 1.4 Forging or deliberately misrepresenting data or results. Submitting results of an experiment, at which one was not present or present for less than the full time, as one's own.
- 1.5 Obtaining or offering either for profit or free of charge materials one might submit (or has submitted) for academic credit. This includes uploading course materials to online sites devoted, in whole or in part, to aiding and abetting cheating under the guise of providing "study aids." There is no prohibition concerning uploading exemplars of one's work to one's personal website or to departmental, divisional, University or professional society websites for purposes of publicity, praise, examination or review by potential employers, graduate school admissions committees, etc.
- 1.6 Violating the specific directions concerning the operation of the honor code in relation to a particular assignment.
- 1.7 Making unauthorized copies of graded work for future distribution.
- 1.8 Claiming credit for a group project to which one did not contribute.
- 1.9 Plagiarism, which includes representing someone else's words, ideas, data or original research as one's own and in general failing to footnote or otherwise acknowledge the source of such work. One has the responsibility of avoiding plagiarism by taking adequate notes on reference materials (including material taken off the internet or other electronic sources) used in the preparation of reports, papers and other coursework.
- 1.10 Submitting one's own work for a course that was previously submitted for the same course, or another course, without proper citation.
- 1.11 Lying, such as: Lying about the reason for an absence to avoid a punitive attendance penalty or to receive an extension on an exam or on a paper's due date; fraudulently obtaining Petrel Points by leaving an event soon after registering one's attendance and without offering to surrender the associated Petrel Point, or by claiming fictitious attendance for oneself or another; forging or willfully being untruthful on documents related to the academic enterprise, such as on an application for an independent study or on a registration form.

- 1.12 Stealing, such as: Stealing another’s work so that he/she may not submit it or so that work can be illicitly shared; stealing reserve or other materials from the library; stealing devices and materials (such as computers, calculators, textbooks, notebooks and software) used in whole or in part to support the academic enterprise.
- 1.13 Fraudulent interaction on the part of students with the honor council, such as: Willfully refusing to testify after having been duly summoned; failing to appear to testify (barring a *bona fide* last-minute emergency) after having been duly summoned; testifying untruthfully.

Students pledge that they have completed assignments honestly by attaching the following statement to each piece of work submitted in partial fulfillment of the requirements for a course taken for academic credit:

“I pledge that I have acted honorably.” (Followed by the student’s signature)

The honor code is in force for every student who is enrolled (either full- or part-time) in any of the academic programs of Oglethorpe University at any given time. All cases of suspected academic dishonesty will be handled in accordance with the provisions established in this code. The honor council has sole jurisdiction in matters of suspected academic dishonesty. Alternative ways of dealing with cases of suspected academic fraud are prohibited. In cases of alleged academic dishonesty on the part of students, the honor council is the final arbiter. Reference the current Oglethorpe University Bulletin for information concerning all aspects of the honor code.

There is a zero tolerance policy for any form of academic dishonesty in this course. Disciplinary action will be taken against any student found guilty of academic dishonesty such as cheating or plagiarism. **If your words match those of others, I will assume you copied rather than composing the answers yourself.** The penalty for being dishonest in this way is far greater than simply getting a wrong answer. Those committing academic dishonesty will be subject to disciplinary action up to and including failing the assignment, failing the course, and/or expulsion from the course or college.

NOTE: A grade of C- or better is required for each PHY1XX/PHY2XX level course required for the major or minor.

## GRADING POLICY

### Grading scale:

A.....90-100	(A-....90-93)
B.....80-90	(B-....80-83,B+....87-90)
C.....70-80	(C-....70-73,C+....77-80)
D.....60-70	(D+....67-70)
F.....0-60	

Note that Incomplete (I) is given only under the rarest of circumstances. Refer to section 5.20.2 of the 2014-2016 [Bulletin](#) for a summary of requirements.

*Your grade will be computed as follows:*

Type of Assignment	% of course grade
Preclass Assignments	10%

Mastering Astronomy Homework	15%
Written Homework and Labs	25%
Nobel Paper	10%
Midterm exams	40%

## PHY100 AND THE “H” DESIGNATION

This course may be converted into an Honors course if a student and faculty member agree on work to be completed to change a “regular” course into an “Honors” course, *and* if the course is approved during the pre-registration period by both the Honors Committee and the professor of the course. Generally, additional work required for honors credit will allow a student to demonstrate a reasonably high degree of achievement in independent research, creative and/or analytical/critical thinking, or successful integration of theory into practice. One or any combination of these elements, successfully demonstrated in work not required of the regular class members, will qualify as a means to “honorize” course content. Print and use the “Honors Credit Conversion Form” provided for this purpose by visiting the Honors Program website: <http://oglethorpe.edu/academics/honors-program/>. A course may not be converted to an “H” designation after the add/drop period ends.

## QUESTIONS & CONCERNS

If at any time you feel that you are falling behind the material, please email me. There are many ways we can work to help better understand the concepts and ideas. It is my goal to make the material as accessible as possible. I welcome and encourage feedback, in order to make the class run as smoothly and efficiently as possible.

## EXPECTATIONS

Students should be prepared to question, learn and complete assignments in a timely and professional manner. For a four credit hour course such as this, you should expect to spend at least **8-12 hours per week** on the coursework, including reading the textbook, working homework problems, and studying for exams. Students are expected to be courteous and respectful to the instructor and fellow students in all written or verbal communications. In return the instructor will work to provide a respect filled environment in which every student can learn. The instructor will also give students timely and professional feedback (including graded assignments) and assistance in their learning.

## Course Schedule PHY100

Mondays		Wednesdays		MA HW due
1/6	Introductions	1/8	Reading: Chapter 1	
1/13	Reading: 2.1-2.2	1/15	Reading: 2.3	Ch 1 HW
1/20	<b>No Class</b>	1/22	Reading: Ch 3 Due: Celestial Coordinates Lab	Ch 2/3 HW
1/27	Reading: 4.1-4.2 Due: Rotating Sky Lab	1/29	Reading: 4.3	Ch 4 HW
2/3	Reading: 5.1-5.2 Due: Kepler's Law Lab	2/5	Reading: 5.3	Ch 5 HW
2/10	Reading: 6.1 Due: Atmosphere Lab	2/12	Reading: 6.2-6.3	Ch 6 HW
2/17	Reading: 7.1 Due: Spacecraft Mission Papers	2/19	Reading: 7.2-7.3	Ch 7 HW
2/24	<b>Review</b> Due: Exoplanets Lab	2/26	<b>Midterm Exam 1</b>	
3/2	<b>No Class</b>	3/4	<b>No Class</b>	
3/9	Reading: 8.1-8.2	3/11	Reading: 8.3	Ch 8 HW
3/16	Reading 9.1-9.2 Due: Sunspot Lab	3/18	Reading: 9.3	Ch 9 HW
3/23	<b>No Class</b>	3/25	Reading: Ch 10	Ch 10 HW
3/30	Reading: 11.1 Due: Variable Star Photometry Lab	4/1	Reading: 11.2-11.3	Ch 11 HW
4/6	Reading: 12.1-12.2 Due: Annotated Bibliography	4/8	Reading: 12.3	Ch 12 HW
4/13	Reading: Ch 13 Due: Draft of Paper	4/15	<b>No Class</b>	Ch 13 HW
4/20	Reading: 14.1-14.2	4/22	Reading: 14.3	Ch 14 HW
4/27	<b>Review &amp; Final Paper Due</b>	4/29	<b>Midterm Exam 2 (@ 2:30)</b>	

### Important Dates

January 6 - First day of classes

March 16 – Last day to withdraw

April 15 – PRISM/LASS

April 27 – Last day of classes