

Fullerton College

ESC 116 Astronomy

Spring 2017

Section: 23117 **M/W 11:10 – 12:35 PM** **Room 412**

Instructor: Liliana Barabas

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Email: lbarabas@fullcoll.edu Please mention the class meeting day and time: MW 11:10 in your email.

Office hours: Mon/Wed 10:30-11:00 AM, Tue/Thu 9-10 AM and 1:30-2 PM and Wed 12:30-2 PM.

Required Text: *Explorations, an Introduction to Astronomy*, by Thomas Arny, 8th edition **and** the Connect access code. Other options: purchase Connect Plus, which includes Connect access code and the interactive eBook version of the textbook or purchase the previous edition (7th) of the textbook and buy Connect access code separately. To register on the Connect homework system go to

staffwww.fullcoll.edu/lbarabas, and click on the Connect link for this section: Spring 2017 MW 11:10.

The textbook is also available on Reserve at FC Library. Lecture PowerPoints are posted on MyGateway.

Course Description: This course is an introduction to the ideas, concepts and theories of astronomy.

Topics include the night sky, history of astronomy, the solar system, stars and the interstellar medium, galaxies and cosmology. Mathematics and memorization of facts will not be emphasized. The understanding of concepts and the development of critical thinking skills will be stressed. Plan to spend about six hours of study outside of class each week. The laboratory is not required for this class.

Supplies: 8 Scantron Forms 815 E (15 questions), 3 Scantron Forms 882 E (100 questions), notebook, pen and pencil and a good eraser.

Attendance: is required. If you miss more than 4 classes you may be dropped. If the drop date has passed, you will receive an F grade. Three tardies count as one absence. It is your responsibility to drop the course if you want to withdraw.

Deadline to add is February 12; deadline to withdraw with a W is Sunday, April 30, 2017.

Grading	Points	%	Grading scale	
			By percentage	By points
7 Quizzes (15 points each)	105	23%	A 90 – 100 %	A 405 and above
10 In class activities (5 points each)	50	11%	B 80 – 89	B 360 – 404
20 Connect assignments (5 points each)	100	22%	C 70 – 79	C 315 – 359
3 Exams (65 points each)	195	43%	D 60 – 69	D 270 – 314
Total	450		F 0 – 59	F 269 and below
Extra credit	20	4%		

Assigned reading: You are accountable for all material and concepts presented in the textbook and in class. Reading the textbook is required and is essential to your success in this course. Lecture alone is less useful in helping you develop a deep understanding of the course topics, therefore all reading assignments must be completed prior to the date indicated in the schedule. You are expected to have a general understanding of the topic. Take notes while you read. Lecture PowerPoints are posted on MyGateway.

Quizzes: 8 multiple-choice quizzes will be given throughout the semester. Some of the questions will be similar to the end of chapter questions in your textbook. Please bring Scantron Forms No 815 E (15 questions in green) for the quizzes. No makeups will be given except in cases of documented emergency. Lowest score will be dropped.

In class activities: will be completed in class throughout the semester and turned in the same day. Each activity is worth 5 points and you will obtain full credit if you legitimately try to answer the questions and review your answers during class discussion. **You have to be present to obtain credit. If you miss an activity you cannot make it up.** However, one activity score is dropped and if you miss only one activity this semester, it will not affect your grade.

Connect assignments: 20 online assignments worth 5 points each will be posted throughout the semester and available until their specified deadline. It is your responsibility to check the website and follow the deadlines for homework assignments. To sign up, go to staffwww.fullcoll.edu/lbarabas, and click on the Connect link for this section, MW 11:10. Do not enroll in a different class section. The assignments allow unlimited attempts and you obtain the full 5 points credit if you complete each before the deadline. Partial credit is given for the portion of the assignment that was done before deadline and no credit after that.

Exams: Each exam will consist of 50 multiple-choice and 5 or 6 written questions. You will need Scantron Form 882 E (100 questions in green) for each exam. The exams are closed book, but you are allowed to use one 3x5 note card, double sided, to each exam (no sharing) and you will be able to write whatever you want on that card. My suggestion is that you use it to hold important ideas and definitions that you want to be sure to remember. However, the exam questions are not geared toward memorization of the material, but they are intended to test whether you understand the material. During the exams, you must bring a photo ID and you are not allowed to wear headphones, or allowed to communicate with anyone in the classroom except for the course instructor. Cell phones must remain off at all times during exams. **No exam scores are dropped.** No makeups will be given except in cases of documented emergencies. If you cannot attend class during an exam, you must make every attempt to notify the instructor in advance or as soon as possible by email or phone to schedule a makeup and you must provide documentation (doctor's note, accident report, copy of legal documents).

Extra credit: You can earn a maximum of 20 extra credit points by completing some of the activities listed below. You will not receive credit for more than 20 extra credit points.

No	Title	Points	Due date
1	Planetary data paper (handout is available on MyGateway and will be distributed in class when we discuss Chapter 6: The Earth)	5	The day of the second exam
2	Attend a Natural Science Division seminar (schedule to be announced in class and posted on MyGateway). Turn in a 1-2 page report.	5	Within two weeks of each seminar
3	Star gazing field trip on a Saturday evening at Devil's Punchbowl in Pearblossom, CA, a two hour drive from Fullerton. Date to be announced. Turn in a 1-2 page single spaced paper describing what you have learned.	15	Last day of class
4	Attend an Orange County Astronomers meeting (held every second Friday of the month at Chapman University in Orange) and turn in a 1-2 page single spaced paper describing what you have learned. Go to http://www.ocastronomers.org/ for more information.	10 each	Last day of class
5	Go to a planetarium show and turn in a 1-2 page single spaced paper describing what you have learned and attach your planetarium show ticket stub as proof of participation. You can find a planetarium show at the Griffith Observatory Planetarium, Tessmann Planetarium at Santa Ana College or Mt. San Antonio College Planetarium or any other planetarium	10 each	Last day of class

Student expectations:

- Silence your phone and put it away from your desk.
- Be on time, do not leave early and do not disrupt class with conversation or noise.
- Be prepared for class and participate in the class discussions.
- Students are expected to conduct themselves according to Fullerton College Standards of Student Conduct as specified in the college catalog and schedule.

Week	Date	Chapter	Topic	Reading assignment	Connect assignment	Quiz (Chapters)
1	Jan 30	P	The cosmic landscape			
	Feb 1	1	The celestial sphere, motion of stars, Sun, Moon	P, 1		
2	6	1, 2	Eclipses, motion of planets	2	P, 1	
	8	2, 3	Kepler's laws, Newton's laws	3	2	Q1 (P, 1, 2)
3	13	3	Law of gravity, orbital motion, escape velocity		3	
	15	4	Properties of light, the electromagnetic spectrum	4	4	
4	20		<i>Presidents' Day Holiday</i>			
	22	4	Light emission, Doppler effect			Q2 (3, 4)
5	27	5	Telescopes	5	5	
	Mar 1		Exam 1 chapters P and 1-5. <i>Bring photo ID, Scantron form 882-E, pen, pencil, eraser and 3x5note card</i>			
6	6	6	The Earth: interior, surface, atmosphere	6		
	8	6, 7	The Earth: magnetosphere. The Moon	7	6	
7	13	7	Motions of the Moon, tides		E, 7	Q3 (6, 7)
	15	8	Survey of the solar system	8	8	
8	20	9	Mercury, Venus	9		
	22	9, 10	Mars, Jupiter	10	9	Q4 (8, 9)
9	27	10	Saturn, Uranus, Neptune		10	
	29	11	Pluto. Meteoroids	11		
10	Apr 3	11	Asteroids, comets		11	Q5 (10, 11)
	3		Exam 2 chapters 6-11. <i>Bring photo ID, Scantron form 882-E, pen, pencil, eraser and 3x5note card</i>			
11			<i>Spring break April 10-16</i>			
12	17	12	The Sun	12		
	19	12	Sunspots and solar activity		12	
13	24	13	Measuring the properties of stars	13		
	26	13, 14	Spectral types, HR diagrams. Star formation	14	13	Q6 (12, 13)
14	May 1	14	The death of stars		14	
	3	15	Stellar remnants	15	15	Q7 (14, 15)
15	8	16	Milky Way	16		
	10	16	The galactic center, mass of the Milky Way		16	
16	15	17	Types of galaxies, Hubble's law, active galaxies	17	17	Q8 (16, 17)
	17	18	Cosmology	18	18	
17	22		Life in the Universe			
	24		Exam 3 chapters 12-18. <i>Bring photo ID, Scantron form 882-E, pen, pencil, eraser and 3x5note card</i> <i>Last day to turn in extra credit</i>			

The above is my tentative schedule as of the first day of class. I reserve the right to make changes that will be announced in class. You are responsible for any changes announced in class when you were absent. Exam dates are approximate.

Course objectives: Upon successful completion of the course the student will be able to:

- Demonstrate an understanding of the motion of the stars, planets and moon on the celestial sphere and of the phases of the moon and eclipses.
- Demonstrate an understanding of Newton's laws and universal law of gravity.
- Demonstrate an understanding of the use of spectroscopic analysis in measuring stellar properties such as temperature, composition, mass and velocity.
- Describe the prevailing theory concerning processes involved in the formation, evolution, life and death of stars.
- Demonstrate an understanding of Hubble's law, its significance and implications in current theories of the evolution of the universe.
- Assess the credibility of astronomy related news reports and articles.

Student learning outcomes: Upon successful completion of ESC 116 F, the student will be able to

- Demonstrate understanding of the motion of celestial bodies.
- Explain how gravity is related to the formation and evolution of the solar system, stars, galaxies and the universe.
- Explain how spectroscopy (electromagnetic radiation) is used to determine the properties of stars, galaxies and the universe.

Disability accommodations: Fullerton College is committed to providing reasonable accommodations for students with disabilities upon request of the student and upon verification of disability. The Disability Support Services office is located in room 842 and can be reached at (714) 992-7099. If you have been certified as needing to take an exam at DSS, please contact me at the beginning of the semester and at least a week in advance of the exam date.

Academic honesty: Students are expected to abide by ethical standards in preparing and presenting material which demonstrates their level of knowledge and which is used to determine grades. Such standards are founded on basic concepts of integrity and honesty. These include, but are not limited to, the following areas:

1. Students shall not plagiarize, which is defined as
 - a. stealing or passing off as one's own the ideas or words of another, or
 - b. using a creative production without crediting the source.

The following cases constitute plagiarism:

- paraphrasing published material without acknowledging the source,
 - making significant use of an idea or a particular arrangement of ideas, e.g., outlines,
 - writing a paper after consultation with persons who provide suitable ideas and incorporating these ideas into the paper without acknowledgment, or
 - submitting under one's own name term papers or other reports which have been prepared by others.
2. Students shall not cheat, which is defined as
 - a. using notes, aids, or the help of other students on tests or exams in ways other than those expressly permitted by the instructor, or
 - b. misreporting or altering the data in laboratory or research projects involving the collection of data.
 3. Students shall not furnish materials or information in order to enable another student to plagiarize or cheat.

Instructors may deal with academic dishonesty in one or more of the following ways:

1. Assign an appropriate academic penalty such as an oral reprimand or point reduction.
2. Assign an "F" on all or part of a particular paper, project, or exam.
3. Report to the appropriate administrators, with notification of same to the student(s), for disciplinary action by the College. Such a report will be accompanied by supporting evidence and documentation.

CONNECT HOMEWORK SYSTEM

GETTING STARTED

TIP: To get started in Connect, you will need the following:

- Your instructor's Connect Web Address: staffwww.fullcoll.edu/lbarabas, click on the Connect link for your class. It is important to register in your section, Spring 2017 MW 11:10, and not in another section because assignments and due dates are different for different sections!
- Connect access code or a credit card to buy online

TIP: A "**Start Free Trial**" registration option allows you to register in Connect without purchasing an access code and receive full access (typically for two weeks) before being required to get one. This option is helpful for those awaiting financial aid or a textbook in the bookstore, those who may drop the class and those who try the Connect Plus eBook before they buy.

TIP: If using the free trial, be sure to get full access to Connect before the trial period expires to avoid any delays in completing your coursework. If your trial period does expire, your work will be saved. Just login with the username and password you used to create your Connect account and choose to "purchase full Connect access here."

REGISTRATION AND SIGN IN

1. Go to the Connect Web Address provided by your instructor.
2. Click on "**Register Now**."
3. Enter your email address (this will become your Connect username). As a best practice, you may want to register with your school/institution email address.

TIP: If you already have a McGraw-Hill account, you will be asked for your password and will not be required to create a new account.

4. Enter a registration code or choose "**Buy Online**" to purchase access online.
5. Follow the on-screen directions.

TIP: Please choose your Security Question and Answer carefully. We will ask you for this information if you forget your password. We recommend that you provide a secondary email address should you forget your Security Question and Answer.

6. When registration is complete, click on "**Go to Connect Now**."
7. You are now ready to use Connect.

TROUBLE LOGGING IN?

- Verify that you are using the same email address you used during registration (not the secondary email address if you provided one).
- If you have forgotten your password, click on the "forgot password" link at your Instructor's Connect Web Address.
- Once logged into Connect, you can update your account information (e.g., email address, password, and security question/answer) by clicking on the "my account" link located at the top-right corner.

HOME (ASSIGNMENTS)

TIP: If you are unable to begin an assignment, check that:

- The assignment is available (start and due dates).
- That you have not exceeded the maximum number of attempts.
- That you have not achieved a score of 100% in a previous attempt in an assignment where your instructor has enabled you to build on your work.
- If your assignment contains questions that require manual grading, you will not be able to begin your next attempt until your instructor has graded your questions in the previous attempt.

TIP: Be sure to read the instructions that appear when you open an assignment:

- Your instructor may set assignment percentage deductions and limitations for utilizing help resources and/or multiple assignment attempts.
- Your instructor may provide specific instructions for you to follow as you complete your assignment.

TIP: Based on the assignment policy settings established by your Instructor, you may encounter the following limitations when working on your assignment(s):

- Inability to Print Assignment.
- Timed assignments – once you begin a “*timed assignment*,” the timer will not stop if you exit the assignment.

TIP: “save & exit” vs. “submit” button

- If you are unable to complete your assignment in one sitting, utilize the “save & exit” button to save your work and complete it at a later time.
- Once you have completed your assignment, utilize the “**submit**” button in order for your assignment to be graded and sent to your instructor.
- Note that your instructor may deduct points for late submittal of an assignment.

LIBRARY

TIP: The *Library* section of your Connect account provides shortcuts to various resources.

- If you purchased Connect Plus, you will see an “**eBook**” link, which can also be accessed from the section information widget of the Home tab (by clicking on the textbook title/cover) or from the *Library* tab.
- “**Recorded Lectures**” can be accessed from the home or library tabs if your instructor is using *Tegrity Campus* to capture lectures. You may also access recorded lectures when taking an assignment by clicking on the projector icon in the navigation bar.
- Many McGraw-Hill textbooks offer additional study resources such as narrated slides and self-quizzes, which are accessible through the “**student resources**” link in the *Library* tab.

REPORTS

TIP: Once you submit your assignment, you can view your available results in the *Reports* tab.

- If you see a dash (-) as your score, your instructor has either delayed or restricted your ability to see the assignment feedback.
- Your instructor has the ability to limit the amount of information (e.g., questions, answers, scores) you can view for each submitted assignment.

NEED MORE HELP?

TIP: Be sure to run a computer check to ensure that your computer meets Connect’s system requirements: <http://mcgrawhillconnect.com/connect/troubleshoot.do>

TIP: When working inside of Connect, be aware that contextual help is available by clicking the “help” link in the top right corner within your account.

CONTACT US ONLINE:

Visit us at: www.mcgrawhillconnect.com/support

Browse our support materials including tutorial videos and our searchable Connect knowledge base. If you cannot find an answer to your question, click “**Contact Us**” to send an email.

GIVE US A CALL: 1-800-331-5094

Live support is available: Mon-Thurs: 8am – 11pm CT Friday: 8am – 6pm CT Sunday: 6pm – 11pm CT