

**SYLLABUS**  
**Astronomy 170B1, Sections #3 & #4H**  
**The Physical Universe**  
**Spring 2015**

<b>LECTURES:</b>	Monday/Wednesday: 2:00 – 3:15 p.m. <b>(No Class on Jan 19)</b> Flandrau Science Center, Planetarium Theater
<b>INSTRUCTOR:</b>	Dr. Thomas A. Fleming
<b>OFFICE:</b>	Steward Obs. Room 209
<b>TELEPHONE:</b>	(520) 621-5049
<b>EMAIL:</b>	taf@as.arizona.edu
<b>OFFICE HOURS:</b>	Mon 10:30am – 11:30am; Thu 2:00 – 3:30pm
<b>TEACHING ASSISTANT:</b> (Sec. 4H)	Chris Bilinski Email: <a href="mailto:cbilinski@email.arizona.edu">cbilinski@email.arizona.edu</a> Office: SO T110 Office Hrs: by appointment Phone: (760) 622-4392
<b>MIDTERM EXAMS:</b>	Monday, February 23, 2:00 p.m. Wednesday, April 1, 2:00 p.m.
<b>FINAL EXAM:</b>	Friday, May 8, 1:00 – 3:00 p.m.
<b>REQUIRED TEXTBOOK:</b>	<i>The Cosmic Perspective, 7<sup>th</sup> Ed.</i> by Jeffrey Bennett, Megan Donahue, with <i>Mastering Astronomy</i> website      Nicholas Schneider, & Mark Voit
<b>REQUIRED:</b>	TurningPoint® ResponseCard NXT (a.k.a. “clicker”)
<b>WEBSITES:</b>	<a href="http://D2L.arizona.edu">http://D2L.arizona.edu</a> <a href="http://www.masteringastronomy.com">http://www.masteringastronomy.com</a> [Class Code: <b>MAFLEMING0028</b> ]

**ATTENDANCE IN CLASS:** Attendance will be taken electronically at each lecture and will figure into your final grade. You are required to purchase an NXT responder (clicker) for this course. You are responsible to bring it to *every* class period, *including* exams. In order to encourage you to do so, we will take attendance during each class using your responder. **Students without a responder will count as absent.** Your absence will be excused if you have an official excuse from the Dean of Students Office, a note from a health care provider, or you are observing a religious holiday which is associated with an organized religion to which you belong. You are responsible for informing Dr. Fleming or Chris if this is the case. Students are responsible for all information given out in the lecture, including schedule changes. We will engage in many interactive learning exercises using your responder in class (some for credit); this will improve your understanding of the material and lead to a better grade. So be smart, attend class!

**REQUIRED TEXT:** The textbook named above is required for the course. You also have the option of purchasing the eText of this book; see page 5 for instructions. You are responsible for the material in the text, whether covered in class or not. Later in this syllabus, we tell you which chapters correspond to the lectures given each week. You are required to read those chapters before coming to class that week. Throughout the semester, we will give pop quizzes (for extra credit) in class on Mondays to test whether you have done the assigned reading.

**MAKE-UP POLICY:** We do not give make-up exams. If we deem that your excuse for missing an exam is truly justified, you will be given an oral make-up exam. That means you stand at the whiteboard for 30 minutes and answer questions.

ALL EXAMS are closed book and closed note. All phones & pagers must be packed away and hidden from view! **If you are seen with a phone/WiFi-enabled device in your hand during an exam, you will fail the exam!**

**GRADES:** Your final grade for the course will be based on the midterm and final exams and other assignments in the following proportion:

Midterm Exam	100 points (12.5%)
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Final	100 points (12.5%)
MA & SNC Assignments	350 points (43.8%)
Astronomy in the News	100 points (12.5%)
Attendance	50 points ( 6.2%)

All questions, disputes, or mistakes regarding the grading of exams and assignments must be brought to our attention within 1 week after the exam or assignment is handed back or posted.

These are the hardest percentages needed to earn a specific grade. We reserve the right to curve the class further, making the grading slightly easier. Under no circumstances will anyone doing less than 50% work pass this class.

A = 720 points (90%)
B = 640 points (80%)
C = 520 points (65%)
D = 400 points (50%)
E < 400 points

**ACTIVITIES/HOMEWORK:** We will assign homework sets on a regular basis from either *Mastering Astronomy* or *Starry Night College*. Homework problems will involve using *Starry Night College* software or the [www.masteringastronomy.com](http://www.masteringastronomy.com) website, the access codes to which come with your textbook. You will submit your answers through either the MA or D2L websites. You may discuss the astronomy concepts with your classmates, but you are expected to do your own work on these assignments. You may use one of the university's public access computers in the ILC Information Commons, on which *Starry Night* is installed. However, you still need the access codes to establish an account on Mastering Astronomy. You have the option to purchase *Starry Night College* (see page 5.) Late homework will **not** be accepted.

**ASTRONOMY IN THE NEWS:** Throughout the semester, you will be required to write 3 essays based on news stories involving astronomy and space science. You will receive feedback on one of these essays with an opportunity to rewrite and resubmit it for an improved grade.

NO smoking, eating, drinking (except water), or pets are allowed in the lecture hall. Please **turn off** your cell phones!

**LEARNER-CENTERED EDUCATION:** The University of Arizona has designated itself a “Learner-Centered University.” This means that the student is expected to take an active role in his/her learning. We intend to conduct this course in accordance with these principles. Do not expect us to lecture for the entire class period while you sit, listen, and take notes. Class time will be peppered with “mini-lectures,” separated by various activities which will make use of the responders. Be prepared to interact with your classmates, ask questions, and participate in group discussions. You will also interact with computer-generated animations and exercises. Our goals for you in this course are that, after it is over, you will have an appreciation for what science is and is not; you will be familiar with basic astronomical terminology and some of the results of scientific research in the field; you will have a sense of the scale of the Universe and our place in it; and you will have exercised your critical thinking and problem solving skills. We ask that you participate fully in the course. In return, we promise to make this course as interesting and **fun** for you as we can.

**DEADLINES:** We will accept **no** late assignments. You will be given at least one week to complete an assignment. If you choose to wait until a few hours before the deadline to do your assignment, you are taking a calculated risk. Should your printer break, Internet go down, or an emergency arise, these will not be valid excuses. You will not get an extension because you chose to wait until the last moment to start the assignment. If this worries you, start your assignments early and hand them in early!! You can submit an assignment to us any time before the deadline.

**ACADEMIC DISHONESTY:** Presentation of any work other than your own is considered academic dishonesty. This includes copying test answers or homework assignments, other persons taking exams for you, or reference to any unauthorized materials during the exam. Any other technique that gains unfair advantage over other students is also considered academically dishonest. All students must be prepared to present valid picture identification if requested during an exam period. Any incidents of academic dishonesty will be dealt with according to the University of Arizona's Code of Academic Integrity. A copy of this Code can be obtained at the Dean of Students website:

<http://deanofstudents.arizona.edu/codeofacademicintegrity>

The consequences can range from loss of credit on an assignment to dismissal from the University, depending on the severity of the offense. In our class, the penalty for plagiarism, cheating on an exam, or responder/computer fraud will be automatic failure of the course and, depending on the circumstances, we may seek your suspension or expulsion from the University.

You should also be aware of the University’s policies on disruptive and threatening behavior:

<http://deanofstudents.arizona.edu/disruptiveandthreateningstudents>

**TURNITIN.COM:** If you decide to take and continue in this course, you are agreeing to submit your essays online to a plagiarism-prevention program called TurnItIn.com. You should note that TurnItIn.com – always without your name and any personal information – will retain your paper as part of their database so that students who plagiarize from it can be detected. Because of this program, the vast majority of you who do your own work and cite your sources of information properly will not have to compete with students who commit undetected plagiarism. Anyone who has questions or problems with TurnItIn.com may talk privately about these with Dr. Fleming.

**STUDENTS WITH DISABILITIES:** If you anticipate issues related to the format or requirements of this course, please meet with Dr. Fleming. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Resources (621-3268; <http://drc.arizona.edu> ) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. **We do not use the DRC testing center;** we will administer all testing accommodations.

**QUESTIONS:** You are encouraged to ask questions in class and to seek help if needed. It is to your advantage to seek help when you encounter problems rather than at the last minute before an exam. We are here to help you understand something about science and the subject of astronomy. Remember, there are no stupid questions!

**THINK TANK TUTORING:** Mondays from 6:00 – 9:00 p.m. at Manzanita-Mohave Hall

**TOPIC SCHEDULE & READING ASSIGNMENTS:**

<u>Week</u>	<u>Topic</u>	<u>Chapters in Text</u>
Jan 14	Scale of the Universe	1
Jan 21	Celestial Motions	2
Jan 26/28	History of Astronomy, Gravity and Motion	3, 4
Feb 2/4	Light, Matter	5
Feb 9/11	Solar System, Formation of Planets	7, 8
Feb 16/18	Terrestrial vs. Jovian Planets	9 – 11
Feb 25	Dwarf Planets, Asteroids, Comets	12
Mar 2/4	The Sun	14
Mar 9/11	Stars, The H-R Diagram	15
<b>Mar 14 – 22</b>	<b>SPRING BREAK</b>	
Mar 23/25	ISM, Nebulae, Stellar Evolution	16, 17
Mar 30	Degenerate Stars, Black Holes	18
Apr 6/8	The Milky Way Galaxy	19
Apr 13/15	Galaxies & their Properties	20
Apr 20/22	Quasars, Galaxy Evolution	21
Apr 27/29	Cosmology, The Big Bang	22, 23
May 4/6	Extraterrestrial Life, Exoplanets	24, 13

## **INSTRUCTIONS FOR OPENING AN ACCOUNT ON *MASTERING ASTRONOMY***

1. Go to <http://www.masteringastronomy.com>
2. Click on the “Student” button in the box labeled “Register Now”, then select the location “Inside US or Canada”.
3. Answer “YES, I have a Course ID.” Enter the following Course ID: **MAFLEMING0028** Click “Next”.
4. Answer “YES” if you received an access code with your textbook. Then go to Step 6.
5. Answer “NO” if you must purchase a code on-line.
  - a. Select the textbook at the far left (Bennett et al., *The Cosmic Perspective 7e*).
  - b. You have the option to purchase the eText (eBook) for \$91.85. If you already bought a used book, a Mastering Astronomy account alone without the eText will cost \$60.50.
  - c. Continue with instructions to establish your account. Then go to Step 7.
6. Use the access code which is included in your textbook to set up your unique Login ID/Password.
7. Return to the login page and enter the site with your new Login ID and password.
8. During this next stage of registering, you must enter your **UA NetID**.
9. Click the home page link and you are now in the system!

If you have REGISTRATION questions: contact <http://247pearsoned.custhelp.com/> and fill out the request form for help.

If you have Mastering Astronomy questions: contact [support@masteringastronomy.com](mailto:support@masteringastronomy.com) or refer to the online help documents.

## **HOW TO PURCHASE YOUR OWN COPY OF *STARRY NIGHT COLLEGE***

Should you wish to own your own copy of *Starry Night College* and do the assignments on your own computer then, as students enrolled in this course, you can purchase *Starry Night College* (retail price: \$140) for the discount price of \$24.95. Here is what you should do:

1. Go to the following website address:  
<http://www.starrynighteducation.com/store/index.php/software/starrynightcollege-student.html>
2. Select “1 year license”.
3. Type in the 4-digit referral code: **33c1**
4. Type in your name and click “Add to Cart”.
5. Checkout by paying with a credit card and then follow the instructions to download the software.

## Classroom Etiquette

In order to foster a good learning environment for the ASTR 203 course, I agree to obey the following rules of etiquette while attending class:

1. I will not eat food or drink anything other than water in the Flandrau Planetarium Theater.
2. I will not read the *Arizona Daily Wildcat* or any other newspaper while class is in session.
3. I will turn my cell phone or other mobile devices OFF while class is in session.\*

\*3a. If I am a parent or I am in an emergency situation, I will set my cell phone to VIBRATE.

4. I will not disrupt class by talking to my classmates about non-course-related subjects while the professor is speaking to the class.
5. I will not use my laptop to play movies or games or surf the Internet for non-course-related subjects and sites (e.g., FACEBOOK) while class is in session.
6. I will make every effort to arrive in class on time and not leave until class is over.  
If I must arrive late or leave early, I will not disrupt class or distract my classmates.  
**For safety reasons, when the STAR PROJECTOR is in use, the doors to the planetarium theater will be LOCKED. I understand that I will not be able to enter the theater/class while the projector is in use and I must wait until the presentation is over and the doors unlock before entering the class.**
7. I will not bring any pets or animals into the classroom (seeing-eye/therapy dogs exempted.)
8. Should I break any of these rules of etiquette which are listed above, I give Dr. Fleming **full authority** to eject me from the classroom.

Signed,

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Print your name

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Your signature

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Your signature

**[Please sign this copy of the contract and return it to either Dr. Fleming or Chris by Monday, January 26 or you will be dropped from the class!]**