ASTRONOMY 100, Section AX (42850): SYLLABUS — Spring 2015

Course Schedule: Tue and Thur, 11:10AM –12:25PM in 8-8304
Instructor: Prof. G. R. Grist
Office: 7-7320
Office Hours: 12:35 – 1:55PM and Thurs 12:35 – 1:55PM
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Required Materials: Text - *Astronomy: A Beginner's Guide to the Universe,* by Chaisson and McMillan & Mastering Astronomy access code, *Lecture-Tutorials for Introductory Astronomy* 3rd ed by Prather (bring this to class everyday**!**), Scantron sheets (#882-E; 6 ea), basic calculator.

The textbook (**Chaisson**) is bundled (bundle cost is ~ $120) with an access code for the online homework system (**MasteringAstronomy (MA)**) and the Lecture Tutorials **(LT).** The LT is a set of worksheets that will be used just about every class, so get this right away and bring it with you to every class. All homework is presented on the online system (**MA**).

Course Description and Prerequisites: This is an introductory course in astronomy for non-science majors. Topics covered will include the night sky and its apparent motion, the law of gravity, the nature of light, our solar system, stars and stellar evolution, galaxies and cosmology, and life in the universe. There are no prerequisites; as an introduction to astronomy, this course requires no scientific background and no mathematical skills beyond basic algebra.

Course Goals and Student Learning Outcomes: The goal of this course during the next sixteen weeks is to introduce you to the field of astronomy and to the sciences in general. I will provide you with the basis you need for an understanding of the scientific method and a foundation in critical thinking. I want each student to walk away from this course with a new appreciation for astronomy and for modern scientific practices. By the end of the term, students will...

1. Understand the scientific method, and what science is.
2. Show an understanding of the history and development of astronomy.
3. Exhibit a conceptual understanding of how scientists measure astronomical phenomena.
4. Exhibit a conceptual understanding of stellar evolution, galaxies, and cosmology.

Help Sessions (Office Hours): Help sessions are the time to come and clarify your thinking, ask questions, kick ideas around, check on your answers in the LT, review exams, and make sure that you understand the material. Posted times are drop-in, come and see me often. Other times may be available, just ask me!

Communication: Email is the one way to contact me outside of office hours. To protect student privacy you must use the college email system to communicate with me; I will do the same, as will the college. If you do not have a forward on your school email, go and do it now; see me if you need help. Be sure to list your name and section on all emails (e.g. Brian May, Lecture X).

Course Activities: The course is designed as a series of mini lectures augmented by collaborative classroom activities, and outside of class study, to enhance your learning.

Reading (Studying) – Reading assignments from the text and other sources will be assigned in class. Read the current topic in the text and then do the online homework.

Online Homework - There is typically one online homework set (**MA**) for each group of topics. The point of the homework is to help you study and to provide structure to your learning; the questions are there for you to check your understanding of the reading.

You must complete the reading and homework before class to be prepared for the in-class work.

Mini Lectures: Focused on selected topics in science and astronomy. I use "Check in" questions with every topic to verify that the class is on track and for you to practice.

In-class Assignments: You will work on the **LT** book in small groups every class. These will not be collected or graded, but you will receive in-class completion credit. Be sure to complete each of the worksheets, as these are what the exams are based on.

Exams – There will be four midterm exams given during the term; I will drop your lowest midterm exam score. The final exam will be comprehensive, cover a representative selection of all the midterm exam questions, and occur during the scheduled "final exam" time; this cannot be taken at another time. All exams are no notes, closed book, but open brain!

There is no extra credit available for this course.

Attendance and Participation: Attending the lectures is required. You are responsible for all material presented in class, including announcements about class procedures, scheduling and assignments. To do well in this course, you are expected to participate fully in the course activities. Plan on regular meetings with a study group and coming to help sessions to review material; this often makes the difference between just passing and getting a great grade!

Grading: The course grade will be based on the accumulated number of points weighted according to the following percentages:

Online Homework Assignments (MA)	20%
In-class Assignments (LT)	20%
Midterm Exams (best three)	40%
Final Exam	20%
Total	**100%**

Your final letter grade is based on the percentage of the total number of points, rounded to the nearest integer. I reserve the right to bump your final grade up a bit if you show marked improvement during the course. There is no curving, but there are generous grade windows (bins). The cutoffs are as follows:

A: 88% **B: 75%** **C: 62%** **D: 50%** **F: <50%**

Class Environment: I try to create a class environment that is enjoyable, safe, and conducive to learning. Towards this end, it is essential that all of us show respect for one another. Specifically:

1. **Be on time for class**. You need to be in your seat when the class starts. If you arrive late, please enter the room quietly. Note: There is no late seating for exams. If you are late you will miss that exam; come see me if you have some extenuating circumstance.

2. **Be prepared for class**. You must complete the reading and homework before class, and bring the **Lecture-Tutorials** to each and every class.

3. **No electronic devices are allowed in class; violators will be asked to leave**. This includes, but is not limited to, phones, iPods, tablets and laptops. Text messages and social media can wait. Remember you have set this time is set aside for yourself and your learning, guard it diligently. If you need to be contactable during class, please see me.

4. **Be respectful of others.** Do not be disruptive; this includes frequently leaving the room. Remember you will be working with others, so don't leave your group hanging!

5. **No make ups.** Work that is missed (i.e. exams, worksheets, etc.) will be counted as zero and cannot be made up; I will however drop your lowest midterm exam score. If you have a valid and verifiable excuse stop by my office and we'll talk.

6. **Do your own work.** If you turn in any work that indicates copying, you will receive a grade of zero. If you receive or give help on an examination you will receive a grade of zero. All such cases will be referred to the Dean.

7. **Smoke Free Policy.** Smoking is restricted to designated parking lot areas.

Special Arrangements: If you have a verifiable condition that will make it difficult to complete the course without special arrangements, please notify me as soon as possible.

Absences: If I note that you have four or more absences I may drop you from the course; showing up late and or leaving early may be counted as an absence.

The following dates (deadlines) are administered by the college; if you need to drop the course you must do so by the last day to drop. After that date I will have no choice but to assign you a grade, and that grade cannot be a **W** or, except in rare circumstances, an **I**. If you have concerns about your progress, lets' talk; I may be able to help you find a strategy that will be successful for you.

Some Important Dates – See Schedule for Others

4 Feb: Last day to request a refund
16 Feb: Last day to drop without a "W"
30 Apr: Last day to drop with a "W"
9 Jun: Final grades available on WebSMART

☺ **FINAL EXAM: 11:10AM Thursday, 28 May** ☺

Spring 2015 Tentative Schedule

Week of	Topics
22-Jan	Class Administration
27-Jan	What is Science; The sky
3-Feb	The sky and the celestial sphere
10-Feb	Orbital motion; Kepler and Newton
17-Feb	The Moon and its motion
24-Feb	Seasons and strange motions
3-Mar	**Exam #1 |** Light (EM spectrum) and types of spectra
10-Mar	Light , atoms, analyzing spectra, and telescopes
17-Mar	Our planetary system, an overview
24-Mar	**Spring Break**
31-Mar	The Earth and solar system formation
7-Apr	**Exam #2 |** Our star
14-Apr	Measuring and classifying stars
21-Apr	Star formation, lifetimes, and end fate
28-Apr	**Exam #3 |** Scale of our galaxy
5-May	Galaxies and dark matter
12-May	Cosmology
19-May	**Exam #4 |** Review
	26 May or 28 May - Final Exam

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