Course Number: PHYS 1103  
Course Title: Stellar Astronomy Lab (online)  

Instructor Name: Fred L. Wilson, Ph. D.  
Office Location: VIN 135  
(325) 486-6984  
fwilson@angelo.edu  
Office Hours: M-F 2-4 PM

Course Description/Overview

This course is a one hour introduction to study of the current knowledge and techniques of modern astronomy. Course content focuses on the universe beyond the solar system including studies of nebulae, the life cycles of stars, galaxies, and cosmology. Emphasis is placed on current knowledge of the universe and how astronomical measurements are made. This lab and its related course (PHYS1301) and the companion courses (PHYS 1302/1102) satisfy the eight hour physical science with lab requirement for most degree programs and can also be used in most degree plans for elective credit hours. No one should take this lab without having taken PHYS 1301 or be taking it at the same time.

Course Bibliography and Required Readings:

Text: All text materials needed for the course are contained within the Starry Night software required for this lab. You can obtain Starry Night by purchasing it from Simulation Curriculum online.

http://store.simulationcurriculum.com/collections/college/products/starry-night-college-version-7-student-download

This is the store for downloading Starry Night, v. 7. You will need an access code for these courses, which is Code: 71c5. If you cannot open the site by clicking on above link, then copy the link and paste it into your browser. Students will be able to purchase and download their student edition for $29.95. Download takes 15 minutes or less.

Please call Simulation Curriculum (Michael Goodman), or go to the support site if they have any problems. Simulation Curriculum Corp. 877-290-8256

Prerequisites

There are no prerequisite courses for this course, however it is foolish to attempt to take this lab course if you have not already taken or are taking PHYS1303 Fundamentals of Astronomy.

Technical skills required for this course

As with all online courses, students must be able to operate a computer and have the necessary technical skills to navigate around a web page. Additional technical skills are not a prerequisite.
for this course, however your computer must meet minimum requirements to operate Blackboard.

Time spent on this course

Students can expect to spend a minimum of 2 hours per week to complete all the readings and assignments. The lab exercises are relatively short, but do require following instructions in Starry Night and completing required worksheets.

Goals, Objectives, and Outcomes

Course Objectives/Learning Outcomes

When you finish this course you should be able to:

- **Objective One:** Understand and apply appropriate methods and technology to the study of the natural sciences.
- **Objective Two:** Recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
- **Objective Three:** Identify and recognize the differences among competing scientific theories.
- **Objective Four:** Obtain the intellectual ability to translate, interpret, and extrapolate the most important scientific models governing modern astrophysics, the practices and methodologies used by modern astronomers in constructing astrophysical models, and to be familiar with the astronomical objects studied by astronomers.
- **Objective Five:** Further develop critical thinking and problem solving skills in the area of astronomy and the natural sciences.

Student learning outcomes will be assessed through a combination of written assignments and active participation in the cohort discussions established through discussion board questions each week.

Course Organization

**Lesson 1:** Thinking Like an Astronomer; Light and Telescopes  
**Lesson 2:** Measuring the Stars  
**Lesson 3:** Evolution of Low-Mass Stars  
**Lesson 4:** Evolution of High-Mass Stars  
**Lesson 5:** Measuring Galaxies  
**Lesson 6:** Our Galaxy: The Milky Way  
**Lesson 7:** The Evolution of the Universe  
**Lesson 8:** Formation of Structure; Life in the Universe
Course Organization

<table>
<thead>
<tr>
<th>Week #</th>
<th>Exercises to Be Done</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tutorial, A3, A4 (8 + 7 + 4 = 19 points)</td>
</tr>
<tr>
<td>2</td>
<td>A5, A6, E1, B4 (9 + 7 + 5 + 4 = 25 points)</td>
</tr>
<tr>
<td>3</td>
<td>E2, E3, E4 (6 + 5 + 8 = 19 points)</td>
</tr>
<tr>
<td>4</td>
<td>F1, F2, F3 (4 + 2 + 3 = 9 points)</td>
</tr>
<tr>
<td>5</td>
<td>F4, F5, F6 (2 + 3 + 4 = 9 points)</td>
</tr>
<tr>
<td>6</td>
<td>F7, F8, G1 (1 + 1 + 8 = 10 points)</td>
</tr>
<tr>
<td>7</td>
<td>G2, G3, G4 (6 + 4 + 5 = 15 points)</td>
</tr>
<tr>
<td>8</td>
<td>H1, H2, H3 (3 + 4 + 3 = 10 points)</td>
</tr>
</tbody>
</table>

The total number of questions for these labs is 116. Each lab will be scored by the total number of points earned by answering that lab. At the end, the sum of points earned will be converted to a percent of 116 possible points.

<table>
<thead>
<tr>
<th>Week #</th>
<th>Quizzes Available for Posting</th>
<th>Date Quizzes Close</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Monday, August 28, 2017</td>
<td>Sunday, September 3, 2017</td>
</tr>
<tr>
<td>2</td>
<td>Monday, September 4, 2017</td>
<td>Sunday, September 10, 2017</td>
</tr>
<tr>
<td>3</td>
<td>Monday, September 11, 2017</td>
<td>Sunday, September 17, 2017</td>
</tr>
<tr>
<td>4</td>
<td>Monday, September 18, 2017</td>
<td>Sunday, September 24, 2017</td>
</tr>
<tr>
<td>5</td>
<td>Monday, September 25, 2017</td>
<td>Sunday, October 1, 2017</td>
</tr>
<tr>
<td>6</td>
<td>Monday, October 2, 2017</td>
<td>Sunday, October 8, 2017</td>
</tr>
<tr>
<td>7</td>
<td>Monday, October 9, 2017</td>
<td>Sunday, October 15, 2017</td>
</tr>
<tr>
<td>8</td>
<td>Monday, October 16, 2017</td>
<td>Sunday, October 22, 2017</td>
</tr>
</tbody>
</table>

Extra Credit

You may earn extra credit (2 points per unique show) for attending Planetarium shows. Visit the Planetarium website for a list of upcoming shows. If you attend, you must sign in at the door. Write your Name (legibly), your CID, and specify PHYS1303 (online). You can't get credit for seeing the same show twice, but you may get credit for every unique show you attend. If you have questions, email me.

http://www.angelo.edu/dept/physics/planetarium.php

Grades

Angelo State University employs a letter grade system. Grades in this course are determined on a percentage scale:
A = 90 – 100 % (104.4 points)
B = 80 – 89 % (92.8 points)
C = 70 – 79 % (81.2 points)
D = 60 - 69 % (69.6 points)
F = 59 % and below. (less than 69.6 points)

Final Exam

This course does not require a final exam as you are evaluated on a weekly basis. However all work must be completed by the dates specified in assignments.

Administration

Communication

In this class, we will communicate primarily by writing. Whether in the discussion forums, email, or any other form of communication, you are expected to treat your fellow students and your instructor with courtesy and respect. In this class, the following rules of etiquette apply:

- Spelling and grammar count. Don't use slang terms or shorthand "text-speak" abbreviations.
- No profanity. Offensive language will not be tolerated.
- No racial, ethnic, or cultural slurs. This may result in your removal from the class.

Feedback

As the instructor of this course, it is my goal to respond to all communication within one working day. At a minimum, you can expect me to be actively engaged in this course during the stated office hours, and will strive to be responsive at other times as well. In addition, I will do my best to grade all writing assignments and provide feedback within 2 days of the due date for the assignment.

Attendance

This is an online course and attendance is not taken. However, failure to submit lab reports, or fail to communicate or respond to e-mails from the professor, is an indication something is wrong. Therefore, we have made both a significant component of the course grade as an enticement to keep you engaged in the learning process. Failure to participate or communicate on the part of a student will result in an appropriate reduction of your grade and possibly in your failure of this course.

Late Work

Laboratory assignments are due by the assigned date. No late submissions will be accepted. University and religious absences do not excuse a student from submitting work by the due date, as all assignments may be submitted during the week in which they are due. No make ups of any kind are allowed after the fact except in dire circumstances. Don't ask.
**Incompletes**

The University policy on grades of "Incomplete" is that the deficiency in performance must be addressed satisfactorily by the end of the next long (16 week) semester or the grade automatically becomes a "F". Grades of "Incomplete" will only be awarded to students who have demonstrated sufficient progress to earn the opportunity to complete the course outside of the normal course duration. The award of an "Incomplete" will only be made in rare circumstances, with the concurrence of the student and the professor on what specific tasks remain and when they are due for the grade to be changed to a higher grade. The determination of the need to award an "Incomplete" is entirely up to the professor's personal judgment.

**Add/Drop dates**

Historically, this course is closed long before the semester begins. Do not ask for permission to add unless you can demonstrate a strong case for a dire situation. If a student happens to drop and a space is available you may add through the normal ASU add/drop procedures.

Students may drop this course as specified by the University Administration. Online courses have a web site for online drops.

**University Policies**

**Academic Integrity**

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Students are responsible for understanding and complying with the university Academic Honor Code and the ASU Student Handbook.

**Accommodations for Disability**

The Student Life Office is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by contacting the Student Life Office at (325) 942-2191 or (325) 942-2126 (TDD/FAX) or by e-mail at Student.Life@angelo.edu to begin the process. The Student Life Office will establish the particular documentation requirements necessary for the various types of disabilities.

**Student absence for religious holidays**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. A student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day within a reasonable time after the absence.