Instructor Information
Name: Dr. Uma Choppali
DCCCD Email: uchoppali@dcccd.edu
Office Phone: 972-860-7343
Office Location: C218
Office Hours: Monday, Tuesday, Wednesday, Thursday: 2:00 – 4:00 pm
Division Office and Phone: STEM Division, C-Building, Room 202 | 972-860-7297

Course Information
Course Title: Solar System
Course Number: PHYS 1404
Section Number: 45451
Semester/Year: SUMMER - I
Credit Hours: 4
Class Meeting Time/Location: : INET -- M T W R F S U
Certification Date: June 08 (Monday), 2020
Last Day to Withdraw: June 24 (Monday), 2020

Course Prerequisites
College level ready in reading.

Course Description
Study of the sun and its solar system, including its origin. Introduction to the solar system and the historical development of astronomical ideas. Topics include the study of the celestial sphere, the planets and their satellites, the sun and other objects in the solar system. Emphasis is on the application of scientific principles and explanation of phenomena in the solar system. The laboratory includes outdoor viewing sessions, constellation identification and the use of telescopes. (3 Lec., 3 Lab.) Coordinating Board Academic Approval Number 4002015203
Student Learning Outcomes

1. Explain the daily and annual motions that occur in the sky.
2. Relate the contributions of astronomers through the centuries and describe the methods used by them to predict the observed heavenly motions.
3. Apply the principles of science to describe and explain various astronomical phenomena.
4. Describe the construction and working of different types of telescopes.
5. Compare the characteristics of the terrestrial and jovian planets and their satellites.
6. Distinguish between comets, asteroids, meteors and explain current views on the formation of the solar system.
7. Describe the physical properties of the Sun and the effects of sunspots on Earth.
8. Perform lab experiments and exercises which illustrate the concepts listed above.
9. View the night sky, identify the brightest stars and constellations, and observe various objects through the telescope, to personally experience the marvels of the universe.

Texas Core Objectives

The College defines essential knowledge and skills that students need to develop during their college experience. These general education competencies parallel the Texas Core Objectives for Student Learning. In this course, the activities you engage in will give you the opportunity to practice two or more of the following core competencies:

1. **Critical Thinking Skills** - to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
2. **Communication Skills** - to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
3. **Empirical and Quantitative Skills** - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
4. **Teamwork** - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
5. **Personal Responsibility** - to include the ability to connect choices, actions, and consequences to ethical decision-making
6. **Social Responsibility** - to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities

Required Course Materials

Title: The Cosmic Perspective
Edition: 8th Edition
Authors: Jeffrey Bennett, Megan Donahue, Nicholas Schneider and Mark Voit
Additional Materials
- scientific calculator with exponential notation key
- metric ruler
- protractor

See the *Getting Started* section of the class website for more details on how you can obtain these materials.

Computer with internet access and ability to submit assignments online through eCampus. Some work may need to be photographed or scanned for submission. In addition, you must download the free planetarium software “Stellarium” to complete several labs. Instructions on how to download and use these programs are included in the lab handouts. The free software for all the labs is compatible with both Mac and Windows based PC computers.

Note: A student of this institution is not under any obligation to purchase a textbook from a university-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

**Course Outline**

This course is divided into twelve lessons:

Lesson 1: Introduction and Overview
Lesson 2: The Celestial Sphere
Lesson 3: Ancient Astronomers and History
Lesson 4: Gravity and Newton’s Laws
Lesson 5: The Nature of Light
Lesson 6: Telescopes
Lesson 7: Solar System Overview
Lesson 8: Planetary Geology
Lesson 9: Planetary Atmospheres
Lesson 10: Jovian Planets
Lesson 11: Asteroids, Comets, and Other Planets
Lesson 12: Our Sun
Graded Work

The tables below provide a summary of the graded work in this course and an explanation of how your final course grade will be calculated.

Summary of Graded Work

<table>
<thead>
<tr>
<th>Assignments</th>
<th>Points</th>
<th>Totals</th>
<th>Approx. %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesson Quizzes</td>
<td>12 @ 20 points each</td>
<td>240 points</td>
<td>24%</td>
</tr>
<tr>
<td>Tests</td>
<td>4 @ 100 points each</td>
<td>400 points</td>
<td>40%</td>
</tr>
<tr>
<td>Orientation Quiz</td>
<td>1 @ 10 points</td>
<td>10 points</td>
<td>1%</td>
</tr>
<tr>
<td>Discussion Boards</td>
<td>varies</td>
<td>100 points</td>
<td>10%</td>
</tr>
<tr>
<td>Labs</td>
<td>5 @ 25 points each</td>
<td>125 points</td>
<td>12.5%</td>
</tr>
<tr>
<td>Videos</td>
<td>3 @ 25 points</td>
<td>75 points</td>
<td>7.5%</td>
</tr>
<tr>
<td>Astronomy Project</td>
<td>1 @ 50 points</td>
<td>50 points</td>
<td>5%</td>
</tr>
</tbody>
</table>

**TOTAL: 100%**

Final Grade

<table>
<thead>
<tr>
<th>Points</th>
<th>Percentages</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>900-1,000</td>
<td>90-100%</td>
<td>A</td>
</tr>
<tr>
<td>800-899</td>
<td>80-89%</td>
<td>B</td>
</tr>
<tr>
<td>700-799</td>
<td>70-79%</td>
<td>C</td>
</tr>
<tr>
<td>600-699</td>
<td>60-69%</td>
<td>D</td>
</tr>
<tr>
<td>0-599</td>
<td>0-59%</td>
<td>F</td>
</tr>
</tbody>
</table>

Description of Graded Work

**Orientation Quiz:** This is worth 10 points and it is to be done before you submit Quiz 1. It will help you navigate the website and find all the components of the course.

**Quizzes:** The course is divided into twelve units and there is a quiz for each unit, which is graded for 20 points. Late assignments will not be graded, unless you have made arrangements with the Instructor. Quizzes will be 24% of your overall grade.
Labs: There are 5 compulsory lab exercises. A student must make a passing grade in lab to receive a passing grade in the course.

Discussion Board: Discussion topics will be posted on the Discussion Board at regular intervals. Post your frank and thoughtful responses to the original topic and to at least two other classmates. Follow the rules for online etiquette. Your participation on the discussion board will be graded for 100 points and will be 10% of your overall grade.

Tests: Four tests will be given during the term after Lessons 3, 6, 9, and 12. Each test is worth 100 points and the questions will be multiple choice, true-false, fill-in the blanks, and short answer. Some questions may require simple calculations that can be done with a scientific calculator. The tests are timed for 120 minutes and have to be taken online. Students will receive instructions regarding passwords for each test.

Tests will be available at 8:00 am on their start day and close at 11:59 pm on the last test day, typically with the testing period lasting three (2) days. Check the Class Outline for test dates.

No make-up exams will be given.

Astronomy Project
You will be maintaining a moon observation journal for the whole month. At the end of the semester, you will submit your report. The project will be graded for 50 points.

Attendance and Your Final Grade
Students are expected to login and utilize the course materials and activities in eCampus on a regular basis. As a minimum expectation, you should login to the course at least 5 times per week.

To be successful, students should spend a minimum of 8–10 hours working on course materials each week. Test preparation may require additional hours. Remember there’s also a lab component, and each lab will take about three hours of your time.

Emails
The instructor will reply to all emails sent in the proper format within 24 hours on weekdays, so double check your format and re-send your email if you do NOT hear back from the instructor within this time frame. Do NOT assume that an unanswered email was received – ALWAYS RESEND if you do not receive a reply in 24 hours on weekdays.
**Required Subject Line Format:** When contacting the instructor, the SUBJECT LINE must contain the course ID (PHYS 1404 - section #) AND the student’s first and last name. The email itself (the body/message) must ALSO contain course ID and the student’s first and last name at the end of the message. Emails sent without this format will either receive no reply or a reply telling you to re-send the email in proper format, which slows down response time.

**Late Work Policy**
This is not a self-paced class. You MUST keep up with the work in the class. All assignments must be completed and submitted on time.

**Disclaimer**
The instructor reserves the right to modify any course requirements and due dates as necessary to manage and conduct this class. The intent of the instructor is to promote the best education possible within prevailing conditions affecting this class. You are responsible for contacting the instructor and seeking clarification of any requirement that is not understood in the syllabus.

**Institutional Policies**
Institutional Policies relating to this course can be accessed using the link below. These policies include information about tutoring, Disabilities Services, class drop and repeat options, Title IX, and more.

Eastfield Institutional Policies [http://www.eastfieldcollege.edu/syllabipolicies](http://www.eastfieldcollege.edu/syllabipolicies)

**Course Schedule**
**Listing of Topics by Week**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Readings &amp; Assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>1</td>
<td>Celestial Sphere</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>1</td>
<td>History</td>
<td>Chapter 3</td>
</tr>
<tr>
<td>1</td>
<td>Test – 1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Gravity, Light</td>
<td>Chapter 4, 5</td>
</tr>
<tr>
<td>2</td>
<td>Telescopes</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>2</td>
<td>Test – 2</td>
<td></td>
</tr>
<tr>
<td>Week</td>
<td>Topic</td>
<td>Readings &amp; Assignments</td>
</tr>
<tr>
<td>------</td>
<td>-------------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>3</td>
<td>Solar System Overview</td>
<td>Chapter 7</td>
</tr>
<tr>
<td>3</td>
<td>Formation of Solar System</td>
<td>Chapter 8</td>
</tr>
<tr>
<td>3</td>
<td>Planetary Geology</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>3</td>
<td>Planetary Atmospheres</td>
<td>Chapter 10</td>
</tr>
<tr>
<td>3</td>
<td>Test – 3</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Jovian Planets</td>
<td>Chapter 11</td>
</tr>
<tr>
<td>4</td>
<td>Asteroids, Comets, Dwarf Planets</td>
<td>Chapter 12</td>
</tr>
<tr>
<td>4</td>
<td>Extrasolar Planets, The Sun</td>
<td>Chapter 13, 14</td>
</tr>
<tr>
<td>4</td>
<td>Test – 4</td>
<td></td>
</tr>
</tbody>
</table>