PHYS 408 Astronomy for Teachers

Course Description

1. Course prerequisites: Junior standing
2. Course description: A course in astronomy dealing with stars and stellar systems. Topics will include observational astronomy (star charts, celestial sphere, constellations, ecliptic and space history and exploration), astronomers, Earth, Sun, Moon systems, the solar system, stellar and galactic structures, cosmology, and the search for extraterrestrial intelligence.
3. How to be successful in the course?
   1. Students must be proficient with computers and the Internet. They must also have an e-mail account with Old Dominion University and be able to check e-mail daily.
   2. Students should be able to use the Internet to research a variety of topics and cite references using the APA method.
   3. Students will be required to communicate with other students and the professor through discussion boards and e-mails. It is therefore necessary for students to be able to communicate through writing.
   4. Students should be familiar with Microsoft Office. All documents uploaded in this course must be either Microsoft Word or a pdf file. No other formats will be accepted.

Course Readings

1) Required and optional materials to complete the course successfully
   a) Required Text
      i) Chaisson and McMillan, Astronomy Today, latest edition - can be found in the Old Dominion University Bookstore or can be ordered online
   b) Websites, and other types of help
      i) Found in each unit

Course Goals and Objectives

1) The objectives will be posted in each unit.
2) Course meets the Virginia state Standards of Learning.
   a) Students should be able to effectively teach all Earth and Space Science Standards of Learning for astronomy concepts after completion of this course. This includes topics covered in ES1, ES3 and ES13 from the 2010 Earth and Space Science SOL's and ES1, 2, and 3 for the newly released 2018 Earth and Space Science standards.

How the Course Works

1) Instructional Approach
   a) Lectures will be posted and available for students in each module. There are 15 modules for this course.
   b) Reading assignments are available for students for each week.
   c) Discussion group questions will be given during this course. Students must participate in the discussion groups.
   d) A course project will be assigned at the beginning of the course. Each week a portion of the project will be due. At the end of the semester the final project will be sent to the professor through e-mail and another copy will remain with the student.
   e) Quizzes will be given on a weekly basis to allow students to see their strengths and weaknesses with the material.
2) Feedback
   a) Students will receive a weekly progress report on their discussion group participation.
   b) Assignment grades will be sent to the student within the week it was submitted through the online gradebook.
   c) Quiz grades will be available on Blackboard once the quiz has been submitted.
3) Project Based Activities (prewritten, generic)
**Grading Criteria**

1) Explain evaluation-marking criteria.
   a) How will each assignment/paper/exam be graded?
      i) A lesson plan template will be used to complete the weekly and final projects. A rubric has been provided to show student expectations for lesson plan development.
      ii) Discussion questions will be assigned throughout the course. A rubric has been provided to show student expectations for discussion question participation.

**Rubric for Discussion Questions**

<table>
<thead>
<tr>
<th>Grade</th>
<th>Discussion Group Rubric</th>
<th>General requirements</th>
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<tbody>
<tr>
<td>10</td>
<td><strong>Copying and paraphrasing is considered plagiarism without references.</strong> Cite all references.</td>
<td>All points of the question are to be addressed and answered completely and correctly with references cited. At least two responses need to be given to other postings between Wednesday midnight and Sunday 4:00 p.m. Original postings, not responses, must not include any reference to other postings Include name with postings</td>
</tr>
<tr>
<td>8-9</td>
<td>All general requirements are met.</td>
<td>Discussion answer is posted in appropriate time frame All points of the question are addressed and answered completely and correctly with references cited Two or more responses are given to other postings in appropriate time frame Original posting does not include reference to other postings Name is included with postings</td>
</tr>
<tr>
<td>6 - 8</td>
<td>Most general requirements are met.</td>
<td>Discussion answer is posted in appropriate time frame All points of the question are addressed and answered completely and correctly with references cited Only one responses is given to other postings in appropriate time frame Original posting does not include reference to other postings Name is included with postings</td>
</tr>
<tr>
<td>1 - 6</td>
<td>Some general requirements are met.</td>
<td>Discussion answer is posted in appropriate time frame All points of the question are addressed and answered completely and correctly with references cited. Original posting does not include reference to other postings. Name is included with posting</td>
</tr>
<tr>
<td>0</td>
<td>Few general requirements are met.</td>
<td>Discussion answer is posted in appropriate time frame Some points of the question are addressed and answered completely but not necessarily correct. All references not cited.</td>
</tr>
<tr>
<td></td>
<td>Did not complete assignment.</td>
<td>Name is included with posting No answer or incorrect answer posted No responses are made to other postings</td>
</tr>
</tbody>
</table>
b) What is the weight of each activity in the final grade?

<table>
<thead>
<tr>
<th>Activity</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>1. Weekly quizzes</td>
<td>20%</td>
</tr>
<tr>
<td>2. Weekly discussion Questions</td>
<td>30%</td>
</tr>
<tr>
<td>3. Weekly projects</td>
<td>30%</td>
</tr>
<tr>
<td>4. Final Project</td>
<td>20%</td>
</tr>
</tbody>
</table>

There are 100 points possible for this course. The grade you earn for this course depends on the total number of points you earn throughout the semester. The final grade will be based on the following percentage scale:

Grading Scale
98-100 = A  94-97 = A  90-93 = A-
88-89 = B+ 84-87 = B  80-83 = B-
78-79 = C+ 74-78 = C  70-73 = C-
68-69 = D+ 64-68 = D  < 59 = F

c) Note: A grade of "I" indicates assigned work yet to be completed in a given course, or absence from the final examination and is assigned only upon instructor approval of a student request. The "I" grade can be given only in exceptional circumstances beyond the student's control, such as illness. In these cases, the student is responsible for notifying the faculty member. The "I" grade becomes an "F" if not removed by the last day of classes of the following term (excluding the exam period) according to the following schedule: "I" grades from the fall semester become "F", if not removed by the last day of classes of the spring semester; "I" grades from the spring and the summer session become "F" if not removed by the last day of classes of the fall semester. An "I" grade may not be changed to a "W" under any circumstances.

Time Requirements

1) Students will have one week to complete weekly assignments unless otherwise stated. Students will have the entire semester to complete the course project.

Student Responsibilities

1) In this course, you're highly encouraged to:
   a) think and plan your individual learning process;
   b) clarify and set your own goals;
   c) monitor and assess your own progress;
   d) establish criteria for judging your own performance;
   e) work alone and collaborate with other students.

Course Policies

1) All assignments are due on the posted due date.
2) All quizzes must be taken by the posted due date.
3) All discussion questions must have posted answers by Wednesday, midnight. All responses to postings must be made by 4:00 p.m. the following Sunday. Responses should not be made to early posts as this does not give you a chance to read all posts and make comments where appropriate. Posting times are recorded by Blackboard and early posts will not be counted for credit.

4) **Course Disclaimer**
   Every attempt is made to provide a syllabus that is complete and that provides an accurate overview of the courses. However, circumstances and events may make it necessary for the instructor to modify the syllabus during the semester. This may depend, in part, on the progress, needs, and experiences of the students.

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**University Policies**

1. **Special Needs**
   Students are encouraged to self-disclose disabilities that have been verified by the Office of Educational Accessibility by providing Accommodation Letters to their instructors early in the semester in order to start receiving accommodations. Accommodations will not be made until the Accommodation Letters are provided to instructors each semester.

2. **University Email Policy**
   The Old Dominion University e-mail system is the official electronic mail system for distributing course-related Communications, policies, Announcements and other information. In addition, the University e-mail user ID and password are necessary for authentication and access to numerous electronic resources (on-line courses, faculty web pages, etc.)

3. **Honor Pledge**
   "I pledge to support the honor system of Old Dominion University. I will refrain from any form of academic dishonesty or deception, such as cheating or plagiarism. I am aware that as a member of the academic community, it is my responsibility to turn in all suspected violators of the honor system. I will report to Honor Council hearings if summoned."

   By attending Old Dominion University you have accepted the responsibility to abide by this code. This is an institutional policy approved by the Board of Visitors. Old Dominion University Library copyright/plagiarism site

**Withdrawal**
A syllabus constitutes a contract between the student and the course instructor. Participation in this course indicates your acceptance of its teaching focus, requirements, and policies. Please review the syllabus and the course requirements as soon as possible. If you believe that the nature of this course does not meet your interests, needs or expectations, if you are not prepared for the amount of work involved-or if you anticipate that the class meetings, assignment deadlines or abiding by the course policies will constitute an unacceptable hardship for you—you should drop the class by the drop/add deadline, which is located in the ODU Schedule of Classes.

4. **Cultural Diversity**
   This course explores the use of technology in public selection. In review criteria for selecting software for classroom use, emphasis is given to that which reflects all nations, creeds, and races of equal and respected status. In terms of hardware availability, course emphasis is given to resources available made possible by new legislation.