

Course Competencies Template - Form 112

| GENERAL INFORMATION | | | |
|---|---|--|--|
| Name: Dr. Curtis McKinney | Phone #: 7-1689 | | |
| Course Prefix/Number: AST 4045 | Course Title: Planetary Geology | | |
| Number of Credits: 3 | | | |
| Degree Type | <input type="checkbox"/> B.A. <input checked="" type="checkbox"/> B.S. <input type="checkbox"/> B.A.S <input type="checkbox"/> A.A. <input type="checkbox"/> A.S. <input type="checkbox"/> A.A.S. <input type="checkbox"/> C.C.C. <input type="checkbox"/> A.T.C. <input type="checkbox"/> V.C.C | | |
| Date Submitted/Revised: 5/14/08 | Effective Year/Term: 2008-1 | | |
| <input type="checkbox"/> New Course Competency <input checked="" type="checkbox"/> Revised Course Competency | | | |
| Course to be designated as a General Education course (part of the 36 hours of A.A. Gen. Ed. coursework): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | | | |
| The above course links to the following Learning Outcomes: <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Communication <input checked="" type="checkbox"/> Numbers / Data <input checked="" type="checkbox"/> Critical thinking <input type="checkbox"/> Information Literacy <input type="checkbox"/> Cultural / Global Perspective </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Social Responsibility <input type="checkbox"/> Ethical Issues <input checked="" type="checkbox"/> Computer / Technology Usage <input type="checkbox"/> Aesthetic / Creative Activities <input checked="" type="checkbox"/> Environmental Responsibility </td> </tr> </table> | | <input type="checkbox"/> Communication <input checked="" type="checkbox"/> Numbers / Data <input checked="" type="checkbox"/> Critical thinking <input type="checkbox"/> Information Literacy <input type="checkbox"/> Cultural / Global Perspective | <input type="checkbox"/> Social Responsibility <input type="checkbox"/> Ethical Issues <input checked="" type="checkbox"/> Computer / Technology Usage <input type="checkbox"/> Aesthetic / Creative Activities <input checked="" type="checkbox"/> Environmental Responsibility |
| <input type="checkbox"/> Communication <input checked="" type="checkbox"/> Numbers / Data <input checked="" type="checkbox"/> Critical thinking <input type="checkbox"/> Information Literacy <input type="checkbox"/> Cultural / Global Perspective | <input type="checkbox"/> Social Responsibility <input type="checkbox"/> Ethical Issues <input checked="" type="checkbox"/> Computer / Technology Usage <input type="checkbox"/> Aesthetic / Creative Activities <input checked="" type="checkbox"/> Environmental Responsibility | | |
| Course Description (limit to 50 words or less, must correspond with course description on Form 102): The student will explore both modern and historical views on the origins of meteorites, the moon, the planets, and other bodies of the solar system. The student will learn the importance of space science as a tool in the study of earth science and the importance of earth science as a tool in the exploration of the universe is discussed. | | | |
| Pre-requisite(s): none | Co-requisite(s): none | | |

Course Competencies: (for further instruction/guidelines go to: <http://www.mdc.edu/asa/curriculum.asp>)

| |
|--|
| Competency 1: Students will demonstrate understanding of the fundamentals of Planetary Astronomy by: |
| a. Describing electromagnetic radiation and its use in planetary exploration. |
| b. Applying Newton's and Keplers's Laws as they apply to planetary systems. |
| c. Describing the Big Bang theory and subsequent formation of galaxies and stars. |
| d. Discussing the history of human exploration of the solar system. |
| e. Explaining the justification of future space exploration and continuing technology development. |
| f. Analyzing the broad effects of space exploration on the economy and culture of Florida. |
| Competency 2: Students will demonstrate an understanding of the origin of the Solar System by: |
| a. Describing the formation of the Solar System in terms of currently accepted theories. |
| b. Comparing and contrasting the physical attributes of planets, moons, asteroids and comets in the Solar System as compared to the Earth. |
| Competency 3: Students will explain the dynamics of planetary orbits by: |
| a. Diagramming the 2 body and 3 body problems. |
| b. Discussing planetary perturbations and long-term stability of planetary orbits. |
| c. Assessing models of the Sun-Earth-Moon system against observational data. |

| |
|---|
| Revision Date: _____ Approved By Academic Dean Date: _____ Reviewed By Director of Academic Programs Date: _____ |
|---|

| |
|--|
| |
| Competency 4: Students will summarize the effects of solar heat and energy in planetary atmospheres by: |
| a. Discussing energy balance and transport. |
| b. Comparing and contrasting planetary atmospheres. |
| c. Analyzing the effects of solar energy on the weather on different planets and moons. |
| |
| Competency 5: Students will model the internal and external structure of both Terrestrial and Jovian planets by: |
| a. Interpreting geophysical planetary data of the different types of planets. |
| b. Discussing the formation of planetary rings. |
| |
| Competency 6: The student will distinguish between meteorites, asteroids, and comets by: |
| a. Analyzing composition and structure of the three types of bodies. |
| b. Analyzing origin and source of these bodies. |
| |
| Competency 7: Students will summarize the search for extra solar planets by: |
| a. Comparing different methods used to detect and/or observe extra solar planets. |
| b. Explaining the formation of planetary systems based on knowledge of the Solar System and applying this knowledge to newly discovered planetary systems. |

| | |
|--|---|
| Revision Date: _____ Approved By Academic Dean Date: _____ | Reviewed By Director of Academic Programs Date: _____ |
|--|---|