Astronomy 110  Introduction to Astronomy
3 credits
Monday, Tuesday, Wednesday, Thursday, 1-2:35pm

INSTRUCTOR: Mary Beth Laychak
OFFICE: ‘Imiloa 135A
OFFICE HOURS: 12:30-1pm (M,T,W, Th) and by appointment
TELEPHONE: 235-7350  EMAIL: laychak@hawaii.edu
EFFECTIVE DATE: Summer 2013

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai‘i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide O‘ahu’s Ko‘olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

Introduction to the astronomical universe for non-science students. (3 hours lecture)

Activities Required at Scheduled Times Other Than Class Times
None

STUDENT LEARNING OUTCOMES

The student learning outcomes for the course are:

- Outline the development of astronomy from ancient times to present and explain the role of the scientific method in this historic context.

- Describe and explain the apparent motions of the celestial bodies, especially as related to naked-eye observations.

- Identify the appropriate instruments used by astronomers to understand the universe.

- Outline the origins of our solar system and appraise the leading cosmological theories of the origin of the universe.

- Describe the physical and chemical properties of the objects in our solar system and apply the concept of comparative planetology.

- Describe the physical and chemical nature of stars, and especially our sun, and apply the astronomical techniques used to measure stellar properties

- Outline the evolutionary stages in a star’s life and compare and contrast the structure of
our Milky Way and other galaxies.

- Apply astronomical concepts to the search for extraterrestrial life.

**COURSE TASKS**

3 Quizzes……………………………… 45 points
1 Midterm……………………………… 50 points
Final………………………………….50 points
Sky Journal………………………….25 points

Total points………………………….170 points

**ASSESSMENT TASKS AND GRADING**

**Quiz: 15 points each**
Monday, June 3rd
Monday, June 10th
Monday, June 24th
Each quiz will cover the information presented in class during the previous week.

**Midterm: 50 points**
Monday, June 17th

**Final Exam: 50 points**
Wednesday, July 3rd

**Sky Journal**
- Due on or before Monday, July 1st……25 points
- Students will keep a journal of the night sky for 14 nights, then write a 1-2 page reflection on their observations. Template and rubric will be provided in class.

All tests are to be taken within the classroom environment; all are closed-book/closed notes. The quizzes, midterm and final will cover the topics discussed since the previous exam.

The student is responsible for keeping abreast of any changes in the syllabus that are announced in class. Unless the instructor grants permission, all tests must be completed and submitted to the instructor at the specified date and time.

**Grading System**
Each letter grade and its respective level of achievement is provided in the following table:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Definition</th>
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<tbody>
<tr>
<td>A</td>
<td>90%-100% of cumulative points possible (excellent achievement)</td>
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<tr>
<td>B</td>
<td>80%-89% of cumulative points possible (above average achievement)</td>
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<tr>
<td>C</td>
<td>70%-79% of cumulative points possible (average achievement)</td>
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<tr>
<td>D</td>
<td>60%-69% of cumulative points possible (minimal passing achievement)</td>
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<tr>
<td>F</td>
<td>Below 60% of cumulative points possible (less than minimal passing achievement)</td>
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Incomplete: this is a temporary grade given at the instruction’s option when a student has failed to complete a small part of a course because of circumstances beyond the student’s control. The student is expected to complete the course by the designated deadline in the succeeding semester. If this is not done, the “I” will revert to the contingency grade identified by the instructor.

Credit/No Credit Option

Note: Refer to the current Schedule of Classes for CR/NC declaration deadlines. This grading option is not available in all courses and will not be offered to majors in required courses.

CR    Achievement of objectives of course at the C level or higher. (course credit awarded)

NC    Used to denote achievement of objectives of the course at less than C level under CR/NC option. (no course credit awarded).

N     The “N” grade, which is issued at the instructor’s option, indicates that the student has worked conscientiously, attended regularly, finished all worked, fulfilled course responsibilities and has made measurable progress. However, either the student has not achieved the minimal learning objectives and is not yet prepared to succeed at the next level, or the student has made consistent progress in the class but is unable to complete the class due to extenuating circumstances, such as major health, personal or family emergencies (no course credits awarded)

W     Official withdraw from the course. See the Schedule of Classes for information regarding current semester deadlines. If a student officially withdraws within the erase period, the record of registration will not appear on the student’s transcript. (no course credits awarded).

L     Audited Course (no course credits awarded)

LEARNING RESOURCES

Required:
The Essential Cosmic Perspective, Custom Edition by Bennett, Donahue, Schneider, and Voit. This is a loose leaf printing of the book. It is identical in content to the 5th edition of the book.

Workbook:
Lecture-Tutorials for Introductory Astronomy, Second Edition by Adams, Prather and Slater

Website:
www.masteringastronomy.com

Additional Information

1. If a student is unable to take an exam at the scheduled time, the student is responsible for notifying the instructor of the situation and reason(s). The student is responsible for requesting a make-up exam. An appropriate scoring penalty may be assigned to this make-up at the instructor's discretion. The student may be required to fulfill additional requirements as specified by the instructor in order to qualify for a make-up test. Any test not taken will be assigned a score of zero.
2. Final exams **must** be taken in class or they will result in a zero.

2. Retests are **not** permitted.

3. Students are encouraged to visit WCC’s **Aerospace Exploration Lab** (located in Hale `Imiloa 135). Materials from the Aerospace Lab may be helpful resources for the student’s assigned research paper. Phone 235-7321 or by appointment with instructor.

4. A student can determine his/her current grade at any time during the semester by dividing his/her cumulative score by the cumulative points possible and converting into a percentage and referring to the table of Letter Grades.

5. Any student wishing to be informed of his/her Final Exam grade and/or semester grade in advance of the official report of grades should email a request for the grades to the instructor immediately after the Final Exam. The student may also provide the instructor a stamped, self-addressed postcard or envelope on the day of the Final Exam with an enclosed note requesting the grades.
<table>
<thead>
<tr>
<th>Day</th>
<th>Topic</th>
<th>Chapters</th>
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<tbody>
<tr>
<td>Tuesday, May 28</td>
<td>Course Intro and the Night Sky</td>
<td>Summer Session I begins – Chapter 2</td>
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<tr>
<td>Wednesday, May 29</td>
<td>Motion of the Sky</td>
<td>Chapter 3</td>
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<td>Thursday, May 30</td>
<td>Astronomy’s Origin Story</td>
<td>Chapter 4</td>
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<tr>
<td>Monday, June 3</td>
<td>Motion</td>
<td>Quiz 1</td>
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<td>Chapter 5.1-5.2</td>
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<td>Tuesday, June 4</td>
<td>Light</td>
<td>Chapter 5.3 and 6.5</td>
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<td>Wednesday, June 5</td>
<td>Light and Telescopes</td>
<td>Chapter 6</td>
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<td>Thursday, June 6</td>
<td>Intro to the Solar System</td>
<td>Chapter 7</td>
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<tr>
<td>Monday, June 10</td>
<td>Terrestrial Planets</td>
<td>Quiz 2</td>
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<td>Chapter 8</td>
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<tr>
<td>Tuesday, June 11</td>
<td>King Kamehameha I Day - holiday, campus closed</td>
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<td>Wednesday, June 12</td>
<td>Jovian Planets</td>
<td>Chapter 9</td>
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<td>Thursday, June 13</td>
<td>Comets, Asteroids and the Dwarfs</td>
<td>Study for Midterm</td>
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<td>Monday, June 17</td>
<td>Midterm</td>
<td>Midterm</td>
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<td>Chapter 10.1-10.2</td>
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<td>Tuesday, June 18</td>
<td>Sun</td>
<td>Chapter 10.3, 11.1-11.2</td>
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<td>Wednesday, June 19</td>
<td>Sun II and other stars</td>
<td>Chapter 11.3 and Chapter 12</td>
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<tr>
<td>Date</td>
<td>Event</td>
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| Thursday, June 20  | Stars  
Chapter 13                                                        |
| Monday, June 24    | Quiz 3  
Stellar Death  
Chapter 14                                                      |
| Tuesday, June 25   | Milky Way  
Chapter 15                                                       |
| Wednesday, June 26 | Galaxies  
Chapter 16                                                       |
| Thursday, June 27  | Dark Matter  
Chapter 17                                                       |
| Monday, July 1     | Big Bang  
Chapter 18.1-18.3  
Sky Journal Due                                                   |
| Tuesday, July 2    | Life  
Study for final                                                   |
| Wednesday, July 3  | Final                                                              |
| Thursday, July 4   | Holiday, no class                                                   |
| Friday, July 5     | Last day of Summer Session I                                       |

**DISABILITIES ACCOMMODATION STATEMENT**

*If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale ‘Akoakoa 213 for more information.*

Revised June 24, 2012