ASTR 130 – Introduction to Archaeoastronomy
Course # 60251, 3 Credits
Spring 2009
Tuesday/Thursday, 11:15 a.m.–12:30 p.m.
‘Imiloa 133

CONTACT INFORMATION


Phone: 808-236-9169 – If you get my voicemail, please leave a message with
your name, best way to contact you and a brief statement of why you are calling.

Email: nancyali@hawaii.edu - I check my email at least once a day during
Monday to Friday, and at least once during the weekend. Email is generally a
better way to get in touch with me than my phone.

Office: Hokulani 107 – My office is to the right of the Imaginarium box office.
Look for the sign saying “Gift Shop”. If my door is closed outside of office hours,
please knock as I might be inside and able to meet with you.

Office Hours: Tuesday/Thursday, 1:00-1:30 p.m., or by appointment. I am on
campus at a variety of different times throughout the week and am happy to meet
with you outside of office hours.

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College is committed to excellence in the liberal arts and
career development; we support and challenge individuals to develop skills, fulfill
their potential, enrich their lives, and become contributing, culturally aware
members of our community.

CATALOGUE DESCRIPTION

Introduction to the interdisciplinary study of cultures and astronomy for non-
science majors. Topics include naked-eye astronomy, myths and rituals,
calendar systems, architectural alignments and navigation. (3 hrs. lect.)
Recommended Preparation: ASTR 110.
STUDENT LEARNING OUTCOMES

Upon completion of this course, students are expected to be able to:

- Describe and explain the observable motions of celestial bodies.
- List factors affecting naked-eye astronomy observations.
- Summarize some of the issues in using astronomical motions for timekeeping and how different cultures have addressed those problems.
- Illustrate how astronomical knowledge can be used in navigation.
- Identify and use measurement tools for determining astronomical alignments.
- Compare and contrast how different cultures used astronomical knowledge.
- Assess the strengths and weaknesses of an interpretation of evidence from an archaeoastronomy site.
- Explain how science and culture are interrelated.

ASSESSMENT & EVALUATION

Assessment tasks for ASTR 130 include the following:

I. Quizzes – 100 points (20% of final grade)
Five (5) quizzes will be given in class on the following dates:
- Quiz #1: Tuesday, February 3 – covering material from classes 1 – 6
- Quiz #2: Tuesday, February 24 – covering material from classes 7 – 12
- Quiz #3: Tuesday, March 17 – covering material from classes 13 – 18
- Quiz #4: Tuesday, April 14 – covering material from classes 19 – 24
- Quiz #5: Tuesday, May 5 – covering material from classes 25 – 31

Each quiz is worth 25 points. Your lowest scoring quiz will not be included for calculating your final grade.
- Quizzes will be closed book. You may not collaborate with classmates while taking the quiz.
- Quizzes will be administered at the beginning of the class. If you are late, you will not be given extra time to complete the quiz. If you miss the class, you may not make-up the quiz and will receive zero (0) points for that quiz. No re-tests are given for quizzes.

II. Homework Assignments – 100 points (20% of final grade)
Five (5) homework assignments will be assigned in class. Homework will be assigned in class and due on the following dates:
- Homework #1: Thursday, January 29
- Homework #2: Thursday, February 19
- Homework #3: Thursday, March 12
- Homework #4: Thursday, April 9
- Homework #5: Thursday, April 30
Each homework assignment is worth 25 points. Your lowest scoring homework assignment will not be included for calculating your final grade.

If you are absent for the class in which the homework was assigned, it is your responsibility to obtain the homework assignment. See the course outline for dates when the homework is assigned.

Homework will be collected at the beginning of the class (11:15 a.m.) in which it is due. If you are going to be late or absent for class, it is your responsibility to turn your homework in early.

If you turn in your homework after the beginning of the class in which it is due, you will receive a 5-point penalty for each day that the homework is late, up to 10 points. For example, if the homework is due on Thursday 11:15 a.m. and:

- You submit your homework after 11:15 a.m. on Thursday, you will automatically have 5 points deducted from your total.
- If you submit your homework anytime on Friday, you will have 10 points deducted.
- Homework submitted anytime after Friday will not be accepted and you will receive zero (0) points for that assignment.

Late homework must be submitted in class, during office hours, or to my mailbox in Alaka’i building. If you are submitting your work to my mailbox, be sure to have the Dean of Instruction’s office stamp your work with the date and time.

You may collaborate with classmates to complete the homework but each student must submit his/her own copy of the homework.

If I am unable to read your work due to messy handwriting, those portions that are illegible will receive a zero (0).

III. Annotated Bibliography – 150 points (30% of final grade)

One (1) paper of 5-7 typed, double spaced pages is required. An annotated bibliography is a summary or evaluation of written sources. Your annotated bibliography paper must include five (5) articles exploring an archaeoastronomy topic of your choosing, plus a two (2) page reflection. Papers will be assessed using a grading rubric provided in class. You must submit a proposal that includes your topic and list of sources. The combined total of the proposal and paper are 150 points (10 for proposal, 140 for paper).

- Proposals are due at the start of class (11:15 a.m.) on Thursday, March 19, 2009. Proposals that are turned in late will receive a penalty of 5 points per day, up to a total of 10 points. Proposals submitted after Friday, March 21, will be accepted but will receive a score of zero (0).

- Annotated bibliography papers are due at the start of class (11:15 a.m.) on Thursday, April 16, 2009. Papers that are turned in late will receive a penalty of 5 points per day, up to a total of 75 points. Papers submitted after Thursday, April 30, will not be accepted and will receive a score of zero (0).

If you are going to be late or absent for the class when the proposal and paper are due, it is your responsibility to submit your work early.
Late proposals and papers must be submitted in class, during office hours or to my mailbox in Alaka’i building. If you are submitting your work to my mailbox, be sure to have the Dean of Instruction’s office stamp your work with the date and time.

IV. Final Exam – 150 points (30% of final grade)
One final exam will be given, worth 150 points. The final exam will be cumulative and include material tested in the quizzes, as well as short answer and/or essay type questions designed to test your ability to synthesize the major concepts taught in class. A review session and study guide will be provided in class.

- The final exam is scheduled for Tuesday, May 12, 11:30 a.m. – 1:30 p.m.
- Exam re-takes are not allowed.
- If you have a documented, justifiable reason why you cannot take the exam at the time scheduled (i.e., jury duty, surgery, military service, etc.), you must notify me as soon as possible to schedule an alternative time to take the exam.
- If you have an unexpected emergency (i.e. car crash requiring you to go to the hospital, death in the family, etc.) that prevents you from taking the exam at the scheduled time, you or a family member must immediately notify me to schedule an alternative time to take the exam.
- Any rescheduling of exams will take place during exam week (5/11-5/15) and at my convenience. If you do not notify me in advance, you are expected to take the exam at the scheduled time. If you do not take the exam at the scheduled time without prior notification, you will receive a zero (0) on the exam with no opportunity for a make-up.
- If I am unable to read your work due to messy handwriting, those portions that are illegible will receive a zero (0).

Grading will be based on the following:

<table>
<thead>
<tr>
<th>Component</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Quizzes</td>
<td>100</td>
</tr>
<tr>
<td>Homework</td>
<td>100</td>
</tr>
<tr>
<td>Annotated Bibliography</td>
<td>150</td>
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<tr>
<td>Final exam</td>
<td>150</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td>500</td>
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Grades Available:

A = 90-100% (450 – 500 points)
B = 80-89% (400 – 449 points)
C = 70-79% (350 – 399 points)
D = 60-69% (300 – 349 points)
F = 59% or lower (299 points or less)

N = The ‘N’ grade indicates that the student has worked conscientiously, attended regularly, finished all work, fulfilled course responsibilities, and has made measurable progress. However, either the student has not achieved the minimal student learning outcomes and is not prepared to succeed at the next level, or the student has made consistent progress in class but is unable to complete the class due to extenuating circumstances, such as major health, personal, or family emergencies.

Extra Credit
A list of extra credit opportunities will be provided in class. A maximum of 50 points will be awarded for extra credit. All extra credit assignments must be completed or submitted by Tuesday, May 5.

Attendance & Participation
Attendance will be taken at all classes. Your attendance in class is important because the lectures and class activities will focus on major concepts that will be assessed in the homework, quizzes and final exam. Active participation in class activities and discussions is expected.

- If you miss a class, it is your responsibility to find out what material was covered and if any changes in due dates, etc. were announced.
- Attendance and participation will not be assessed. However, if your final grade is within five (5) points of the next highest grade, I may choose to award the higher grade if your attendance and participation has been strong.

EXPECTATIONS FOR STUDENTS

Preparedness
You are expected to complete the readings listed for each class before coming to class. You are expected to bring texts and other materials to class when requested.

Classroom Etiquette
You are expected to be respectful of the instructor and other students by being on time for class and staying through the end of class, listening during lectures...
and videos and staying on-task during activities and discussions. If your behavior is disruptive to the learning environment, you may be asked to leave the class.

**Cell Phones**
You are expected to turn off all cell phones during class. If you are expecting an important phone call, please put your phone on mute and leave the classroom to take the call. Do not text during class.

**Disabilities Accommodation**
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.

**LEARNING RESOURCES**
There are two required texts for this course (below), both of which are available from the WCC bookstore. In addition, a variety of articles and handouts will be distributed in class. You may also be asked to download specific articles from the Internet.

Aveni, Anthony F., *Skywatchers (Revised & Updated Edition)*. Austin, Texas: University of Texas Press, 2001. $34.95


**ACADEMIC HONESTY**
Because Windward Community College is an academic community with high professional standards, academic dishonesty will not be tolerated in this class. Such dishonesty includes cheating and plagiarism.

Cheating includes but is not limited to giving or receiving unauthorized assistance during a quiz or exam, obtaining unauthorized information about a quiz or exam before it is given, using inappropriate or unallowable sources of information during a quiz or exam, and misrepresenting the facts in order to obtain exemptions from course requirements.
Plagiarism includes but is not limited to submitting, in fulfillment of an academic requirement, any document that has been copied in whole or in part from another individual’s work without attribution, paraphrasing a passage so that the reader is misled as to the source and submitting the same written or oral material in more than one course without obtaining authorization from the instructors involved.

In cases of suspected or admitted academic dishonesty, the instructor shall attempt to discuss the matter with the student and may bring it to the attention of the departmental chairperson and the student’s advisor. The student may be asked to redo the assignment, be given a failing or reduced grade for the assignment or be given a failing or reduced grade for the course.
**COURSE OUTLINE**

**Notes:** This course outline is subject to change. Changes will be announced during class time. Where the reading is “TBD”, this means that the reading is “To Be Distributed” in class. All TBD readings will be distributed at least one week before the class in which the reading is to be completed. Quiz and assignment due dates are indicated in bold type.

<table>
<thead>
<tr>
<th>Class # 1, 2</th>
<th>Tuesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td><strong>January 13</strong></td>
<td>Introductory Activities</td>
<td><strong>January 15</strong></td>
</tr>
<tr>
<td>What is Archaeoastronomy?</td>
<td>Imaginarius: Positional Astronomy Basics</td>
<td><strong>Reading:</strong> Krupp, Chapter 1 (pp. 1-10)</td>
</tr>
<tr>
<td><strong>Reading:</strong> Purchase textbooks</td>
<td><strong>Aveni, Chapter I (pp. 1-11)</strong></td>
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<tr>
<th>Class # 3, 4</th>
<th>Tuesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td><strong>January 20</strong></td>
<td>Positional Astronomy Basics</td>
<td><strong>January 22</strong></td>
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<tr>
<td>Assign Homework #1</td>
<td>Cosmologies</td>
<td><strong>Reading:</strong> Krupp, chapter 13 (pp. 315-342)</td>
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<tr>
<td><strong>Reading:</strong> Krupp, Chapter 3 (pp. 62-81)</td>
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<tr>
<th>Class # 5, 6</th>
<th>Tuesday</th>
<th>Thursday</th>
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<tr>
<td><strong>January 27</strong></td>
<td>Solstices &amp; Equinoxes</td>
<td><strong>January 29</strong></td>
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<tr>
<td><strong>Reading:</strong> Aveni, Chapter III (pp. 49-67)</td>
<td>HOMEWORK #1 DUE</td>
<td>Imaginarius: Solstices &amp; Equinoxes</td>
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<tr>
<td><strong>Reading:</strong> Aveni, Chapter III (pp. 49-67)</td>
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<tr>
<th>Class # 7, 8</th>
<th>Tuesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td><strong>February 3</strong></td>
<td>QUIZ #1: CLASSES 1-6</td>
<td><strong>February 5</strong></td>
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<tr>
<td>Case Study: Stonehenge</td>
<td>Case Study: Stonehenge</td>
<td><strong>Reading:</strong> Krupp, Chapter 9 (pp. 214-230)</td>
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<tr>
<td><strong>Reading:</strong> Krupp, Chapter 9 (pp.214-230)</td>
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<tr>
<th>Class # 9, 10</th>
<th>Tuesday</th>
<th>Thursday</th>
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<tbody>
<tr>
<td><strong>February 10</strong></td>
<td>Assign Homework #2</td>
<td><strong>February 12</strong></td>
</tr>
<tr>
<td>Tomb Alignments: Great Pyramid</td>
<td>Imaginarius: Great Pyramid Astronomy</td>
<td><strong>Reading:</strong> Krupp, Chapter 1 (pp. 10-11); Aveni, Chapter III (pp. 100-103)</td>
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<tr>
<td><strong>Reading:</strong> Krupp, Chapter 1 (pp. 14-22); Krupp, Chapter 5 (pp. 100-105); Krupp, Chapter 8 (pp.211-213)</td>
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</tbody>
</table>
| Class # 11, 12 | **February 17**  
Tomb Alignments: Newgrange, Palenque  
**Reading:** Krupp, Chapter 5 (pp. 118-125) | **February 19**  
HOMEWORK #2 DUE  
Temple Alignments  
**Reading:** Krupp, Chapter 10 (pp. 231-258) |
|---|---|---|
| Class # 13, 14 | **February 24**  
QUIZ #2: CLASSES 7-12  
Medicine Wheels  
**Reading:** Krupp, chapter 6 (pp. 141-148); Aveni, Chapter V (pp. 301-303) | **February 26**  
Imaginarium: Stars of the Pharaohs  
**Reading:** Catch up on missed reading |
| Class # 15, 16 | **March 3**  
Annotated Bibliography Guidelines  
Assign Homework #3  
**Reading:** TBD | **March 5**  
Case Study: Kukaniloko  
**Reading:** TBD |
| Class # 17, 18 | **March 10**  
Case Study: Kukaniloko  
**Reading:** TBD | **March 12**  
HOMEWORK #3 DUE  
Ethnoastronomy in Hawaii  
**Reading:** TBD |
| Class # 19, 20 | **March 17**  
QUIZ #3: CLASSES 13-18  
Chaco Canyon  
**Reading:** Krupp, Chapter 6 (pp. 151-152); Krupp, Chapter 10 (pp. 231-236) | **March 19**  
ANNOTATED BIBLIOGRAPHY PROPOSALS DUE  
Chaco Canyon  
**Reading:** Krupp, Chapter 6 (pp. 151-152); Krupp, Chapter 10 (pp. 231-236) |
| Spring Recess | **March 24**  
No Class | **March 26**  
No Class |
| Equinox March 21 | **April 31**  
Assign Homework #4  
Determining Astronomical Alignments  
**Reading:** Aveni, Chapter III (pp. 103-109, 118-124) | **April 2**  
Determining Astronomical Alignments  
**Reading:** Aveni, Chapter III (pp. 103-109, 118-124) |
<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Event</th>
<th>Reading</th>
</tr>
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<tbody>
<tr>
<td>23, 24</td>
<td>April 7</td>
<td>Imaginarium: The Moon</td>
<td>Aveni, Chapter III (pp. 67-80)</td>
</tr>
<tr>
<td>25, 26</td>
<td>April 14</td>
<td>QUIZ #4: CLASSES 19-24</td>
<td>Krupp, Chapter 7 (pp. 157-189)</td>
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<td></td>
<td>April 21</td>
<td>Homework #5 Assigned</td>
<td>Krupp, Chapter 7 (pp. 157-189)</td>
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<td>April 28</td>
<td>Polynesian Navigation</td>
<td>TBD</td>
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<tr>
<td></td>
<td>May 5</td>
<td>Last Day of Classes</td>
<td>Polynesian Navigation</td>
</tr>
<tr>
<td>29, 30</td>
<td>April 30</td>
<td>HOMEWORK #5 DUE</td>
<td>TBD</td>
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<td></td>
<td>May 12</td>
<td>FINAL EXAM</td>
<td>11:30-1:30</td>
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<tr>
<td>31</td>
<td>May 7</td>
<td>No Class</td>
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Exam Week: May 12

FINAL EXAM
11:30-1:30