University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course

1. Type of Action
   - A. Addition
   - Regular or [□] Experimental or [□] Other
   □ B. Deletion
   □ C. Modification:
     - □ in credits
     - □ in title
     - □ in number or alpha
     - □ in prerequisites or co-requisites
     - □ Other

2. New Alpha, Number and Title
   ASTR 130 Introduction to Archaeoastronomy

3. Credits
   3 credits

4. Old Alpha, Number and Title
   □

5. Credits *

6. New Catalog 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, with special emphasis given to Hawaiian astronomy.

7. Select box and type specific information in text box.
   □ Prerequisites
   □ Corequisites or
   □ Recommended Preparation
   ASTR 110

8. Student Contact Hours Per Week
   Lecture 3
   Lecture/Lab
   Lab
   Other (click to specify)

9. Proposed Date of First Offering
   Semester Fall
   Year 2007

10. This course is proposed for the Liberal Arts Program

11. This course makes no difference in the number of credits required for the program/core.

12. Equivalent or similar courses offered in the UH System:

<table>
<thead>
<tr>
<th>Campus</th>
<th>Alpha, Number, Title</th>
<th>Campus</th>
<th>Alpha, Number, Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>UH Manoa</td>
<td>ASTR 130</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UH Hilo</td>
<td>ASTR 220</td>
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<td></td>
<td>ANTH 220</td>
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</tbody>
</table>

13. This course is (check one and click in appropriate textbox and provide details):
   □ Already articulated with
   Provide details of existing or desired articulation (date, college(s), purposes, pre-major, etc.) in this space:
   □ Appropriate for Articulation with ASTR 130 and ASTR 220
   Provide details of existing or desired articulation (date, colleges(s), purposes, pre-major or major, etc.) in this space:
   □ Not yet appropriate for Articulation.

14. Reason for Initiating, Modifying or Deleting Courses or Other Pertinent Comment:
   Introduction to the interdisciplinary study of the relationship between ancient cultures and astronomy.

Requested by: Joseph E. Cotti
Department Chairperson
2/22/06

Approved by:
Curriculum Committee Chairperson
Date

Dean of Instruction
Date

Provost
Date

CCCM #6100 (Amended for WCC use October 2002)
University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course

Levels of Review of Course Proposal at Windward Community College

Course Alpha, Number, and Title:

Signatures

1. Department Area (more than one departmental instructor's signature required)

   [Signatures]

   [Dates]

2. Department

   [Signature]

   Department Chairperson

   Was this course discussed in a department meeting? ☒ Yes ☐ No

3. Division

   [Signature]

4. Curriculum Committee Review

   Approved ☑

   Disapproved ☐

   Reason:

   [Signature]

   Curriculum Committee Chairperson

   [Dates]

CCCM #6100 (Amended for WCC use October 2002)
University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course
New Course Proposal Form – Go to next page for Course Modification)

WCC Form for New Course Proposals
(This sheet was originally pink.)

1. How is this course related to the education needs and goals of the College/Department/Community as reflected in the EDP/ADP?

   The department is tasked to provide a physical science requirement for the liberal arts students. This course will also provide introductory preparation for students seeking more scientifically oriented careers in either astronomy or archaeology and enhance WCC’s focus on Hawaiian-centered courses.

2. Provide details of any additional staff, equipment, facilities, library/media material, faculty preparation and other financial support that would be required to implement this course. (Include an estimate of the actual cost of supplies and equipment.) What has been done to provide for these additional costs for the proposed date of offering? Who will teach the course?

   A lecturer will need to be hired.

   Lecturer (Nancy Ah-Bishop Museum): All instruments and equipment already in inventory of Natural Sciences Department. WCC library already has resources for this course.

3. Is a similar course taught elsewhere in the UH system? Yes If yes, provide details of how this course differs from existing similar courses.

   same course as ASTR 130 which is taught at UH-Manoa; except for course number, also similar to ASTR 220 which is taught at UH-Hilo and which is crosslinked with ANTH 220

4. Is this course experimental and/or unique to Windward Community College? No If yes, provide rationale and details of its impact on the College Curriculum

5. Is a similar course taught in the upper division level by a 4-year UH college? No If yes, explain why this course is appropriate at the lower division or how it differs from its upper division counterpart.

6. Please attach a complete course outline. Your course outline should address all the items listed in the Guidelines for Course Outlines.

7. If this course is numbered 100 or above or appropriate for transfer to a 4-year college, complete and attach WCC Form for Transfer Courses (blue). See criteria for transfer courses.
University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course
Course Modification Form – Go to next page for Articulation Form

WCC Form for Course Modifications

Course  
Submitted by  
Date  February 22, 2006

1. What change is proposed in the course? Provide specific information comparing both the “new” and “old” course.

2. What is the rationale for the change?

3. Is the change substantive enough to require a change in course identification? If so, explain thoroughly.

4. Is the course articulated with any 4-year program? *
   If yes, give details of the agreement(s) and explain any impact the proposed modifications may have on articulation.

5. Provide details of any additional staff, equipment, facilities, library/media material, faculty preparation and other financial considerations that would be required to implement this course modification. What has been done to provide for these additional costs? Who will teach the course? Is additional preparation needed?

6. Will this course modification result in any alterations in the number of hours required to attain a certificate or degree? * If yes, provide details and justification for these alterations.

7. If the course is renumbered to 100 or above, does it meet the criteria for transfer level courses? (Go to next page for transfer course criteria.) *
WCC Form for Transfer Courses
(To be completed for articulation with any 4-year UH campus)
(This sheet was originally blue.)

Course Alpha and Number ASTR 130

Submitted by Joseph Ciotti

Date February 22, 2006

1. List the counterpart to this course on any 4-year UH campus. Describe the relationship between the course any related baccalaureate program area.

   ASTR 130 (UHM); ASTR 220 (UHH); ANTH 220 (UHH). Liberal arts course assigned DP designation at UHM.

2. Is this course taught or accepted by major accredited colleges or universities? Give one or two examples.

   Pennsylvania State University ASTRO 220 Archaeoastronomy
   Colgate University SOC and ANTH 253 Archaeoastronomy
   University of Colorado at Boulder APS 2000 Ancient Astronomies of the World
   University of Arizona—Humanities 451 (Science and the Humanities)
   Stanford University—Anthro 17 (Astronomy and Culture)
   University of Maryland—HONORS 218a (In Search of Ancient Astronomies)

3. Please attach a complete course outline if you have not done so already. Your course outline should address all the items listed in the Guidelines for Course Outlines.
University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course
Articulation with 4-year UH Campus Form

COURSE ARTICULATION FORM (GENERAL EDUCATION CORE)

ORIGINATING CAMPUS: Windward Community College DATE SUBMITTED: February 24, 2006

COURSE ALPHA & NUMBER: ASTR 130 SEMESTER CREDITS: 3

COURSE TITLE: Introduction to Archaeoastronomy

DATE OF OUTLINE: February 24, 2006 Year 2007

(** Representative outline, no multiple syllabi, please.)

1. Articulation committee to review this course:

   Standing Committees
   - Written Communication
   - Mathematical & Logical Thinking
   - World Civilizations
   - Languages
   - Arts & Humanities
   - Natural Science
   - Social Science

2. The information in this item is required by the reviewing committee so that it has a starting point for reviewing the course. It is the responsibility of the submitting campus to do the necessary research to provide this information.

   In the opinion of the originating campus, this course is equivalent to the following and/or meets the criteria for the indicated core categories. Every core category space, except your own campus, must be filled in (can include ‘none’). An equivalent course, if known, may be helpful to committee members but is not required.

<table>
<thead>
<tr>
<th>Receiving Campus</th>
<th>Equivalent Course (Alpha and Number)</th>
<th>Core Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>UH Hilo</td>
<td>ASTR 220 and ANTH 220</td>
<td>DP</td>
</tr>
<tr>
<td>UH Manoa</td>
<td>ASTR 130</td>
<td>DP</td>
</tr>
<tr>
<td>UH West Oahu</td>
<td></td>
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<tr>
<td>Hawaii CC</td>
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<tr>
<td>Honolulu CC</td>
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<tr>
<td>Kapiolani CC</td>
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<tr>
<td>Kauai CC</td>
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<tr>
<td>Leeward CC</td>
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<tr>
<td>Maui CC</td>
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<tr>
<td>Windward CC</td>
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</tr>
</tbody>
</table>

3. If submitted electronically, I understand that this outline will be posted to a publicly accessible web site to enable open access for reviewing committees and campuses. The outline will be taken off the site upon completion of the review.

Typed Name or Signature

Note: If possible submit coversheet and course outline electronically as e-mail attachments (preferably in ‘pdf’ format). If submitting in printed form, 20 copies of coversheet and course outline are required for distribution for appropriate review.

Note: UCA Clearinghouse
John Muth, Office of the Chancellor for Community Colleges, is acting as staff to the University Council on Articulation and is responsible for tracking all courses submitted for articulation.
University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course
Articulation with 4-year UH Campus Form

COMMITTEE LEVEL:

1. When the committee has completed its review of a course, the "ARTICULATION RECOMMENDATION FORM" (revised 1/18/2001) should be filled in and attached to the outline. The committee chair should also sign the form.

2. If the committee choice is "accept," indicate receiving campus core area. If the committee choice is "not recommended," a reason must be provided. Outlines with missing or incomplete recommendation forms will be returned to the committee.

If a committee requires updated or more complete outlines, such requests should be made through the UCA Clearinghouse so that the new outline material can be tracked and placed in the file. If a committee requires more general supporting information, this should be requested through the course's supporting campus representative on the committee.

3. All committee recommendations should be sent to the UCA Clearinghouse for recordation and dissemination to the campuses. DO NOT SEND THE RECOMMENDATIONS DIRECTLY TO ANY CAMPUS.

RECEIVING CAMPUS:

1. Courses will be sent to each campus for consideration after they come out of committee. Each campus has its own internal process for the approval of courses for its general education core.

2. In all cases where a campus accepts a course into its general education core, it must also indicate which area or part of its core the course fits.

3. In all cases where a campus does not accept a course for articulation, it must supply a reason (even it is "we agree with the committee").

4. When campus actions are completed, these actions should be conveyed back to the UCA Clearinghouse for recordation and publication

5. The Community College Policy on Acceptance of UCA Reviewed Courses is as follows:

(a) All Community Colleges agree to accept positive UCA committee recommendations for core, including core categories assigned by the committee.

(b) All Community Colleges agree to accept the UCA committee judgment of not-Recommended (nR) without further review.

(c) This policy is retroactive to the time the current articulation effort started.

(d) The Community Colleges reserve the right to review and modify core category assignments as necessary to insure appropriate categorization and to realign such assignments if changes are made to the campus core structure. Such modifications shall not interfere with the timely publication of the student transfer handbook.

Note: UCA Clearinghouse

John Muth, Office of the Chancellor for Community Colleges, is acting as staff to the University Council on Articulation and is responsible for tracking all courses submitted for articulation.

Revised 1/29/2001
University of Hawaii Community Colleges
Proposal to Initiate, Modify or Delete a Course
Articulation with 4-year UH Campus Form

ARTICULATED COURSE
CHANGE IN ALPHA/NUMBER/TITLE

Old Course

Course Alpha & Number:
Title:

Revised Course

Course Alpha & Number:
Title:
Semester and Year when the revised course was/will be first offered:
Reason for the change in Alpha/Number/and/or Title:

Note: A current outline of the course must be submitted with this form. Undated outlines are not acceptable.

I certify that this course has had its alpha, number, and/or title changed, but that it is substantially the same course as the course that was reviewed and approved for articulation.

Campus: Windward Community College
Certifying Authority (Typed Name or Signature and Title)
Date:

SUBMIT TO: UCA Clearinghouse, Attn: John Muth
Chancellor's Office for CC, 2327 Dole Street
Revised 1/19/01
Course Name: 
Introduction to Archaeoastronomy

Course Number: 
ASTR 130

Course Credits: 
3 credits

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, with special emphasis given to Hawaiian astronomy.

Prerequisites: 
None

Recommended: 
ASTR 110

Articulation by Campus:

Required Texts: 
*Echoes of the Ancient Skies* by E.C. Krupp
*Skywatchers* by Anthony Aveni
Texts will be supplemented by photocopied articles and other handouts provided in class.

Activities Required at Scheduled Times other than Class Times or Off-Campus: 
  Required: None
  Optional: One field trip to Kukaniloko site in Wahiawa

Instructor: Nancy Ali

Office:

Office Hours:

Office Phone:

Email: naalinali@hotmail.com

Effective Date: Fall 2007
ASTR 130: INTRODUCTION TO ARCHAEOASTRONOMY

Supplementary Information

I. Goals of the Course

The goals of the course are:
1. To familiarize the student with the observable, predictable movements of celestial objects.
2. To provide the student with an overview of major topics in archaeoastronomy and ethnoastronomy.
3. To cultivate and enhance the student’s critical thinking and observation skills.
4. To promote greater student appreciation of the relationship between science and culture.

II. Objectives of the Course

Student Learning Outcomes:
Upon successful completion of this course, the student will be able to:
1. Describe and explain the observable daily motions of celestial bodies.
2. Identify the phases of the moon and explain what causes them.
3. List some cultural associations of the planets.
4. Identify and use measurement tools for determining astronomical alignments.
5. Illustrate how astronomical knowledge can be used in navigation.
6. Compare and contrast how different cultures used astronomical knowledge.
7. Assess the strengths and weaknesses of an interpretation of evidence from an archaeoastronomy site.
8. Explain how culture and science are interrelated.

III. Expectations of Students

Students who take this course are expected to:
1. actively participate in course activities and lectures;
2. come to class consistently and on time;
3. turn off cell phones and pagers while in class;
4. obtain lecture notes and updates from fellow students when absences are unavoidable;
5. read all assigned course materials in advance of the lectures;
6. seek assistance from the instructor when needed;
7. have a positive attitude towards learning.
IV. Mode of Instruction

The format of the class will be primarily lecture format, supplemented by hands-on demonstrations, planetarium explorations, computer lab simulations and small-group discussions. One optional field trip to Kukaniloko site in Wahiawa will be taken in October, outside of class time.

V. Method of Evaluation

1. Research Paper--75 points
   Due Date: November 20, 2007
   Students will write a 6-page paper researching one topic in archaeoastronomy. The paper must acknowledge all references in a bibliography. Criteria for evaluation will be provided in class. Students must submit a research paper proposal on October 23, 2007 (worth 15 of the 75 total points).

2. Observing Activity--40 points
   Due Date: December 6, 2007
   Students will gain firsthand experience observing the sky by completing weekly observation journals. Each journal entry must include the date, time of observation, and observation notes. Students are encouraged to schedule their observations to view sky phenomena, such as meteor showers, which will be announced in class.

3. Mid-term Exam—75 points
   Date: October 9, 2007
   The midterm will cover material addressed in the lectures and assigned readings from August 28 to October 4. It will include both objective-type questions and short answer questions.

4. Final Exam—100 points
   Tentative date: December 13, 2007
   The final exam will cover material addressed in the lectures and assigned readings from October 11 to December 4, 2007, as well as unifying concepts introduced in the first half of the semester. The test will include both objective-type questions and short answer questions.

Letter grades will be determined according to the following table:

<table>
<thead>
<tr>
<th>Letter Grade</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90%-100% of cumulative points possible (260-290 points)</td>
</tr>
<tr>
<td>B</td>
<td>80%-89% of cumulative points possible (231-259 points)</td>
</tr>
<tr>
<td>C</td>
<td>70%-79% of cumulative points possible (202-230 points)</td>
</tr>
<tr>
<td>D</td>
<td>60%-69% of cumulative points possible (173-201 points)</td>
</tr>
<tr>
<td>F</td>
<td>Below 60% of cumulative points possible (0-172 points)</td>
</tr>
</tbody>
</table>
I

Incomplete. This temporary grade given at the instructor’s option when a student has failed to complete a small part of a course because of circumstances beyond the student’s control. All required work must be completed by the last day of instruction of the succeeding semester.

The Cr/NC option must be declared by the end of the 10th week of classes. Written consent of instructor is required for this option.

Cr

Achievement of objectives at the C level or higher.

NC

Achievement of objectives at less than C level. (Formal grade)

N

Achievement of objectives at less than C level. (Optional instructor’s grade)

W

Official withdrawal after the third week of a 16-week course and prior to the end of the 10th week. If a student officially withdraws by the end of the 5th week of a 16-week course, the record of registration in this course will not appear on the student’s transcript.

VI. Other Information

1. Both exams must be taken within the classroom environment on the dates listed on the course syllabus. Tests are closed-book/closed notes. Retests and make-up tests are not allowed.

2. Students will have the opportunity to visit the Kukaniloko site in Wahiawa and participate in field research activities. This field trip is optional, but students who attend may complete a site-visit report for extra credit (worth a maximum of 30 points). Students may choose to participate in the site visit without completing a report, but no extra-credit will be given. The deadline for submitting a site visit report is December 6, 2007.

3. Students who are unable to attend the Kukaniloko site visit but would still like to obtain extra credit may complete an additional observing project (worth a maximum of 30 points). Students may obtain a list of observing projects from the instructor. The deadline for submitting an extra credit observing project is December 6, 2007.

4. If a student is unable to submit the research paper or observing assignment on the scheduled due dates, the student is responsible for notifying the instructor of the situation and reason(s). At the instructor’s discretion, a 10% penalty will be deducted from the assignment’s grade. Extra credit assignments will not be accepted after the deadline (December 6, 2007).
5. Exam dates and assignment due dates are subject to change. Any changes will be announced in class. Students are responsible for making sure they are aware of any date changes.

6. 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 (290), and converting into a percentage and referring to the table of Letter Grades.

7. 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>Date</th>
<th>Tuesday</th>
<th>Thursday</th>
</tr>
</thead>
</table>
| Aug. 28 | Introduction  
Course overview, expectations, assignments, definitions of archaeoastronomy and ethnoastronomy  
Reading: Aveni, chapter 1 | 30 | The Celestial Sphere  
Diurnal motion, horizon, zenith, Polaris, latitude  
(Imaginarium)  
Reading: Aveni, pp. 49-67 |
| Sept. 4 | The Stars  
Nomenclature, magnitude, coordinate reference systems, Polaris, latitude  
Reading: Aveni, chapter 3; E.C. Krupp, chapter 4 | 6 | The Zodiac  
Ecliptic, constellation boundaries, astrology, precession, mythology (Imaginarium and/or Starry Night computer lab)  
Reading: Aveni, chapter 3; E.C. Krupp, chapter 4 |
| 11 | The Solar System  
Movements of the sun, Earth, moon and planets  
Reading: E.C. Krupp, Chapter 8; Aveni, pp. 55-67 | 13 | Gods & Goddesses  
Deities associated with planets, our moon, retrograde movement, solar system, planetary characteristics  
Reading: E.C. Krupp, chapter 3 |
| 18 | The Moon  
Movements of the moon, lunar mythology, Hawaiian lunar phases and associated activities, Mahina video  
Reading: Aveni, pp. 67-80 | 20 | Astronomical Time  
solar year, lunar year, months, sidereal year, solstices & equinoxes  
Reading: E.C. Krupp, chapter 7, Aveni, chapter 4 |
| Oct. 25 | Eclipses  
Eclipse predictions, eclipse mythology, rituals  
Reading: E.C. Krupp, chapter 2; Aveni, pp. 67-80, 173-184 | 27 | Seasonal Rituals  
Hopi “New Fire” ritual, Celtic ritual calendar, imperial China winter solstice ritual, Hawaiian Makahiki festival  
Reading: E.C. Krupp, chapter 8 |
| 4 | Calendar Systems  
Need for calendars, Mayan calendar, Hawaiian calendar  
Reading: E.C. Krupp, chapter 7, Aveni, chapter 4 | 4 | Review  
Outline of exam, summary of major concepts |
| 9 | Midterm Exam | 11 | [Check-in with Observing Project]  
Concepts and Problems in Archaeoastronomy  
Methodology, critical thinking, use of ethnographic information |
| 16 | Case Study: Stonehenge  
Alignments and their interpretations, archaeological considerations, importance in the field of archaeoastronomy  
Reading: E.C. Krupp, chapter 9 | 18 | Case Study: Stonehenge  
Assessing alignments using Starry Night and/or Imaginarium and model Stonehenge  
Reading: E.C. Krupp, chapter 9 |
<table>
<thead>
<tr>
<th>Nov.</th>
<th>Dec.</th>
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</thead>
<tbody>
<tr>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>Kukaniloko Site Visit Saturday Oct. 27</td>
<td>Case Study: Kukaniloko</td>
</tr>
<tr>
<td></td>
<td>Measurement and observation techniques and tools, preparation for site visit, practice using compass, clinometer, surveyors transit</td>
</tr>
<tr>
<td>Reading: Sites of Oahu pp.138-141 (handout), Johnson &amp; Kurth's article (handout)</td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>1</td>
</tr>
<tr>
<td>Discussion of Kukaniloko Site Visit Chaco Canyon</td>
<td>Tomb Alignments</td>
</tr>
<tr>
<td>Use of petroglyphs at Fajada Butte, shadow dagger</td>
<td>Newrange, Egyptian pyramids, Palenque</td>
</tr>
<tr>
<td>Reading: E.C. Krupp, pp. 151-152, 234-236</td>
<td>Reading: E.C. Krupp, chapter 5</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>Temple Alignments</td>
<td>Medicine Wheels</td>
</tr>
<tr>
<td>Pueblo Bonito, Beijing, Angkor Wat</td>
<td>Bighorn &amp; Moose Mountain medicine wheels, cultural significance</td>
</tr>
<tr>
<td>Reading: E.C. Krupp, chapter 10</td>
<td>Reading: E.C. Krupp, chapter 6 (pp. 141-148)</td>
</tr>
<tr>
<td>13</td>
<td>15</td>
</tr>
<tr>
<td>Ethnoastronomy in Hawaii</td>
<td>Polynesian Navigation</td>
</tr>
<tr>
<td>Kohololawe petroglyphs, Kauai heiau, Cape Kumukahi, Aku ‘Umi heiau</td>
<td>Geography of Pacific islands, voyaging canoes, migration reasons and patterns</td>
</tr>
<tr>
<td>Reading: Ruggles' article “Astronomy, Oral Literature and Landscape in Ancient Hawaii” (handout)</td>
<td>Reading: navigation handout</td>
</tr>
<tr>
<td>20</td>
<td>22</td>
</tr>
<tr>
<td>[Research paper due]</td>
<td>Thanksgiving Holiday</td>
</tr>
<tr>
<td>Polynesian Navigation</td>
<td>No class</td>
</tr>
<tr>
<td>Navigational stars, star compass, navigational gourd, Hoku’la voyages (Imaginarius)</td>
<td></td>
</tr>
<tr>
<td>Reading: navigation handout</td>
<td></td>
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<tr>
<td>27</td>
<td>29</td>
</tr>
<tr>
<td>Religious Rituals and Astronomy</td>
<td>Astronomical Symbols</td>
</tr>
<tr>
<td>Australian aborigine, T’ang Dynasty shamans, American Indians</td>
<td>Mesoamerican pecked crosses, Babylonian boundary stones</td>
</tr>
<tr>
<td>Reading: E.C. Krupp, chapter 6</td>
<td>Reading: E.C. Krupp, chapter 12</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Cosmology</td>
<td>[Observing &amp; Extra Credit Assignments Due]</td>
</tr>
<tr>
<td>China, ancient Greece, Hindu, Hawaiian</td>
<td>Final Class</td>
</tr>
<tr>
<td>Reading: E.C. Krupp, chapter 13</td>
<td>Review, suggestions on studying for exam</td>
</tr>
<tr>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>No class</td>
<td>Final Exam</td>
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</tbody>
</table>