

## ASTR 299: Archaeoastronomy of Egypt

**3 credits (WI)**

by arrangement

**INSTRUCTOR:** Joseph Ciotti  
**OFFICE:** 'Imiloa 134  
**OFFICE HOURS:** posted on office door  
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**EFFECTIVE DATE:** Spring 2007

### 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.*

### CATALOG DESCRIPTION

An introduction to archaeoastronomy with a survey of astronomical structures in ancient Egypt. Student research on the astronomical alignment and significance of the temples, pyramids and other artifacts created during the ancient Egyptian dynasties. Research will also involve a study of the historical development of the Egyptian calendar and clocks, such as the sundial and clepsydra. The student will write a review paper summarizing the research findings. Periodically scheduled drafts will also be submitted. This paper will be supplement with resource materials, such as sundials and reproductions of astronomical artifacts from ancient Egypt. (Writing Intensive course.)

**Pre-requisite(s):** ASTR 110 and ASTR 110L

**Activities Required at Scheduled Times Other Than Class Times** N/A

### GOALS

The goals of the course are:

1. To provide the student with an in-depth understanding of the astronomical orientation and significance of ancient structures.
2. To provide the student with basic scientific techniques for measuring astronomical orientations at archaeological sites.
3. To provide the student will an understanding of the development of the calendar and clock.
4. To cultivate and enhance the student's ability to reason by applying the scientific method.
5. To promote greater student appreciation and awareness of the role of astronomy in ancient cultures.

## STUDENT LEARNING OUTCOMES

Upon successful completion of this course, the student will be able to:

1. understand and apply the principles of astronomy to the layout of ancient astronomical structures.
2. reproduce at least one ancient clock (sundial, clepsydra)
3. compare and contrast at least three different types of calendar systems.
4. discuss the cultural aspects of ancient monuments and relate them to astronomical phenomena.
5. develop writing skills appropriate to research papers and journals.

## ASSESSMENT TASKS AND GRADING

### Method of Evaluation

Evaluation of the successful completion of the objectives of this course will be determined by grades received on written research paper and the supplementary resource materials (such as sundials and reproductions of astronomical artifacts from ancient Egypt) that will accompany it. In addition, an assessment will be made bi-weekly on the outline and drafts and journal entries for this research project.

The points are allotted as follows:

Research/review papers	100
Supplementary Resources (2 min)	60
Journal entries	30
Mentor evaluation	60
Writing Intensive evaluation	<u>100</u>
<b>Total points</b>	<b>350</b>

### Grading System

Each letter grade and its respective level of achievement is as follows:

#### Letter Grade   Definition

- A**    90% - 100% of cumulative points possible
- B**    80% - 89% of cumulative points possible
- C**    70% - 79% of cumulative points possible
- D**    60% - 69% of cumulative points possible
- F**    below 60% of cumulative points possible
- 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 3rd week of a 16-week course, the record of registration in this course will not appear on the student's transcript.
- L** Audited Course (no course credit awarded)

## LEARNING RESOURCES

1. Stairways to the Stars : Skywatching in Three Great Ancient Cultures by Anthony Aveni
2. Echoes of the Ancient Skies: The Astronomy of Lost Civilizations by E. C. Krupp
3. Early Man and the Cosmos by Evan Hadingham
4. Secrets of the Great Pyramid by Peter Tompkins
5. The Orion Mystery by Robert Bauval & Andrian Gilbert
6. Ancient Astronomers by Anthony Aveni
7. Stars over Hawaii by E.H. Bryan, Jr.

## ADDITIONAL INFORMATION

1. 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, Ann Lemke, to discuss reasonable accommodations that will help you succeed in this class. She can be reached by phone at 235-7448 or via email [lemke@hawaii.edu](mailto:lemke@hawaii.edu), or you may stop by Hale 'Akoakoa 213 for more information.
2. Student is encouraged to visit WCC's **Aerospace Exploration Lab** (located in Hale 'Imiloa 135). Besides a large collection of astronomy related resource materials, which the student may borrow for an extra-credit project, there is a hands-on physical science museum. Phone 235-7321.
3. 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.
4. Any student wishing to be informed of his/her semester grade in advance of the official report of grades should email a request for the grades to the instructor immediately after the last day of instruction. The student may also provide the instructor a stamped, self-addressed postcard or envelope with an enclosed note requesting the grades.

