

## IS 260 A & B Polynesian Voyaging and Stewardship

3 credits

Tuesday 5:30– 8:15 pm

<b>INSTRUCTORS:</b>	<b>Joseph Ciotti, Floyd McCoy &amp; Bonnie Kahapea-Tanner</b>
<b>OFFICE:</b>	<b>see chart below</b>
<b>OFFICE HOURS:</b>	<b>posted on office door</b>
<b>TELEPHONE:</b>	<b>see chart below</b>
<b>EMAIL:</b>	<b>see chart below</b>
<b>EFFECTIVE DATE:</b>	<b>Spring 2015</b>

### 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

This course focuses on the fundamentals of voyaging and the impact of human activity on the environment of Hawai'i, with emphasis on Kāne'ohe Bay and the Windward coast. An interdisciplinary approach is used in blending the traditions of Polynesian culture, history and skills with modern science and technology. Topics covered include Hawaiian studies, astronomy, geology, oceanography, meteorology, marine biology, ethnobotany and archaeology of Polynesia and Hawai'i. Applies towards Physics Science: (DP)

#### PREREQUISITES:

- IS 160 A: Credit for IS 160A or IS 160B or consent of instructor.
- IS 160 B: Credit for IS 160B or consent of instructor.

#### COREQUISITE:

- IS 160 A: none
- IS 160 B: concurrent enrollment in IS 260 L

#### Activities Required/Optional at Scheduled Times Other Than Class Times:

- see syllabus
- OPTIONAL field trips: IS 260A students are invited to attend non-sailing excursions scheduled for the lab (IS 260L)

Instructors:	Dr. Joseph Ciotti Coordinator	Dr. Floyd McCoy	Ms. Bonnie Kahapea-Tanner
Office:	'Imiloa 134	'Imiloa 115	
Office Phone:	236-9111	236-9115	
email:	<a href="mailto:ciotti@hawaii.edu">ciotti@hawaii.edu</a>	<a href="mailto:fmccoy@hawaii.edu">fmccoy@hawaii.edu</a>	<a href="mailto:kahapea@gmail.com">kahapea@gmail.com</a>

## STUDENT LEARNING OUTCOMES

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

The student learning outcomes are:

1. Identify the remaining two of the four recognized star lines used for navigation..
2. Contrast and compare wayfinding, celestial navigation and GPS.
3. Discuss and explain the lunar phases and the causes and effects of tides.
4. Explain and apply the physics of sailing, as related to Bernoulli's principle and Newtonian physics.
5. Discuss the settlement of Hawai'i with emphasis on the Kane'ohē Bay area, including place names and voyaging chiefs.
6. Apply the basic concepts in oceanography and meteorology, especially of the Pacific area.
7. Apply basic sailing and navigational skills to prepare and carry out a sail plan.

## COURSE OVERVIEW

### A. Goals of the Course

This course strives to blend traditional Polynesian and Hawaiian culture and skills with present scientific knowledge and technology in an attempt to understand the impact of human activity on the Hawaiian environment. This course, which is a follow-up of *ISI60 Polynesian Voyaging and Seamanship*, develops more advanced concepts and skills in environmental studies, voyaging and navigation.

The goals of the course are:

1. To provide the student with the higher level knowledge and concepts of the physical and biological world, especially as related to our Hawaiian environment.
2. To provide the student with hands-on experience with higher level skills of and scientific approaches to voyaging and navigation, both ancient and modern.
3. To cultivate and enhance the student's ability to reason by applying the scientific method and by utilizing traditional voyaging skills.
4. To promote greater student appreciation and awareness of the impact which human activities have on our local and global environment.

### B. Expectations of Students

Success in this course will be enhanced by:

1. a positive, inquiring attitude toward science and mathematics;
2. setting aside adequate time for studying and working problems;
3. reading the text carefully and making use of other learning materials whenever necessary;
4. seeking assistance from the instructor;
5. class attendance and responsibly fulfilling all course assignments and tasks;
6. keeping abreast with or ahead of the syllabus.

### C. Mode of Instruction

Lecture/Discussion: The initial portion of each class period is used to review and clarify any questions from the previous class meeting. The remaining portion is used to present and discuss new materials. Appropriate audio-visual materials will be used to supplement the lectures.

## ASSESSMENT TASKS AND GRADING

### Method of Evaluation

Evaluation of the successful completion of the objectives of this course will be based on quizzes (or in some cases, projects) administered after each session in astronomy, oceanography/geology, and Hawaiian Studies; as well as a cumulative final exam. Points are assigned as follows:

• Quizzes and/or projects	
1. Astronomy Sessions	40 points
2. Oceanography/Geology Sessions	40 points
3. Hawaiian Studies	40 points
• FINAL EXAM	<u>120 points</u>
<b>Total:</b>	<b>240</b>

The Quizzes and Final exams will be administered within the classroom environment; all are closed-book. Final Exam questions are cumulative and are extracted from all lecture topics in astronomy, oceanography/geology and Hawaiian studies.

Test dates are listed on the course syllabus. The student is responsible for keeping abreast with any changes in syllabus which are announced in class. Unless permission is granted by the instructor, 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:

#### Letter Grade   Definition

<b>A</b>	90% - 100% of cumulative points possible	(excellent achievement)
<b>B</b>	80% - 89% of cumulative points possible	(above average achievement)
<b>C</b>	70% - 79% of cumulative points possible	(average achievement)
<b>D</b>	60% - 69% of cumulative points possible	(minimal passing achievement)
<b>F</b>	below 60% of cumulative points possible	(less than minimal passing achievement)
<b>I</b>	Incomplete: This is a 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. 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 credits awarded)
- N** The “N” grade, which is issued at the instructor’s option, 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 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 withdrawal from the course 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 Materials

- Astronomy sessions: handouts
- Oceanography/Geology sessions:
- Hawaiian Studies sessions:

### Recommended/Optional materials

- Astronomy sessions: none
- Oceanography/Geology sessions:
- Hawaiian Studies sessions:

## Additional Information

1. **Make-Up Test:** 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. **No more than one make-up test is allowed per student in this course.** Any test not taken will be assigned a score of zero.
2. **Retest:** Retests are **not** permitted.
3. 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.

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.

**IS260A/B Spring 2015**  
 63428 (IS 260A) & 64329 (IS 260B)  
***Polynesian Voyaging & Stewardship***

H: Hawaiian Studies                      Bonnie Kahapea-Tanner ('Imiloa 133)  
 A: Astronomy                                Joe Ciotti                                      ('Imiloa 133)  
 G: Geology/Oceanography    Floyd McCoy                                ('Imiloa 117)

		TUESDAY 5:30 - 8:15 pm	
JAN	13	<b>A</b>	lunar phases & eclipses lunar calendar & mythology
	20	<b>A</b>	nature of tides predicting tides & reading tide charts constellation ID: Ka Iwikuamoo & Ke Ka o Makal'i
	27	<b>A</b>	constellation ID: Ka Iwikuamoo & Ke Ka o Makal'i <b>(Hökūlani Imaginarium)</b>  <b>Astronomy Quiz 1</b>
FEB	3	<b>H</b>	Migration & Voyaging to Hawaii/Kane'ohē
	10	<b>H</b>	Hawaiian & Polynesian Canoe Protocol
	17	<b>H</b>	Fire & Sennit Making <b>Hawaiian Quiz 1</b>
	24	<b>G</b>	Hawaii Sustainability and Resources Nearshore Oceanography - Beaches & Coasts
MAR	3	<b>G</b>	Hawaii Sustainability and Resources Coastal Management

**IS260A/B & L Spring 2015**

A: Astronomy    G: Geology/Oceanography    H: Hawaiian Studies

MONDAY		
MAR	10	<b>G</b> Hawaii Sustainability and Resources Hawaiian fishponds <b>Geology Quiz 1</b>
	17	<b>H</b> Polynesian Conservation & Sustainability
	24	<b>SPRING BREAK</b>
MAR/ APR	31	<b>H</b> Nature Conservancy: Sustainability
	7	<b>A</b> physics of sailing astronomy of Polynesian navigation constellation ID & <i>Maunakea</i> <b>(Hōkūlani Imaginarium)</b>
	14	<b>A</b> basics of celestial navigation & GPS constellation ID & <i>Wayfinders</i> <b>(Hōkūlani Imaginarium)</b>
	21	<b>G</b> Hawaii Sustainability and Resources Ground and Surface Water
	28	<b>G</b> Hawaii Sustainability and Resources Soils
MAY	5	<b>G</b> Hawaii Sustainability and Resources Natural Disasters and Disaster Mitigation

**Final Exam: Tuesday, May 12 from 5:30 – 7:30 pm**