SCI 160 A&B Polynesian Voyaging and Seamanship
3 Credits, CRN 61430 and 61431
Tuesday 2:30 – 5:00 p.m.

INSTRUCTOR: Dr. Floyd McCoy & Ian Akahi Masterson
OFFICE: see chart below
OFFICE HOURS: see chart below
TELEPHONE: see chart below
EMAIL ADDRESS: see chart below
EFFECTIVE DATE: Fall 2017

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 situates Hawai‘i in the larger context of Oceania and exposes students to issues, themes,
values, and practices across the region. It also introduces students to the geography, societies, histories,
cultures, and arts of Oceania, including Hawai‘i. Combines lecture and discussion that emphasize
Pacific Islander perspectives and experiences.

PREREQUISITES: none
COREQUISITE:
• SCI 160 A: none
• SCI 160 B: concurrent enrollment in SCI 160 L

Activities Required/Optional at Scheduled Times Other Than Class Times:
• see syllabus
• OPTIONAL field trips: If SCI 160 L is offered during the semester, SCI 160A students may be
invited to attend special non-sailing excursions scheduled for the lab (SCI 160L)

<table>
<thead>
<tr>
<th>Instructors:</th>
<th>Dr. Floyd McCoy</th>
<th>Ian Akahi Masterson</th>
<th>Leimomi Deirks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office:</td>
<td>'Imiloa 115</td>
<td>Hale Kuhina 110</td>
<td>TBA</td>
</tr>
<tr>
<td>Office Phone:</td>
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<td>235-7331</td>
<td>TBA</td>
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<td>Cell Phone:</td>
<td>TBA</td>
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<td>TBA</td>
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<tr>
<td>Email:</td>
<td><a href="mailto:fmccoy@hawaii.edu">fmccoy@hawaii.edu</a></td>
<td><a href="mailto:imasters@hawaii.edu">imasters@hawaii.edu</a></td>
<td><a href="mailto:Kekina@hawaii.edu">Kekina@hawaii.edu</a></td>
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STUDENT LEARNING OUTCOMES

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

1. Describe the basic geography of Polynesia.
2. Apply the fundamental concepts in positional astronomy (including the seasons) and identify two of the four recognized star lines used for navigation.
3. Explain the basic principals in wayfinding (non-instrument navigation).
4. Discuss Polynesian migration as gleaned from archaeological findings.
5. Discuss Polynesian mythology and cosmology, especially as related to voyaging.
6. Apply the basic concepts in geology, especially of the Pacific area.
7. Discuss fundamentals of weather forecasting as related to the Pacific Ocean.
8. Identify native and Hawaiian plants, especially those used in voyaging

COURSE OVERVIEW

A. Goals of the Course
This course strives to blend the traditions of the ancient Polynesian voyaging culture with present scientific knowledge in order to prepare students who will be better able to contribute to a sustainable future for Hawaii's environment.

The goals of the course are:

1. To provide the student with the fundamental knowledge and concepts of the physical and biological world, especially as related to our Hawaiian environment.
2. To enhance student awareness in the human endeavor of exploration and voyaging by developing the basic skills of seamanship and navigation.
3. To provide the student with both skills in and scientific approaches to voyaging and seamanship, both ancient and modern.
4. To cultivate and enhance the student's ability to reason by applying the scientific method and by utilizing traditional voyaging and seamanship skills.
5. 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. There is no Final Exam. Points are assigned as follows:

Quizzes and/or projects

1. Astronomy Sessions  
   50 points
2. Oceanography/Geology Sessions  
   50 points
3. Hawaiian Studies  
   50 points

**Total: 150**

The Quizzes will be administered within the classroom environment; all are closed-book.

Test dates are listed on the course syllabus. The student is responsible for keeping abreast with any changes in syllabus that 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 with its respective level of achievement is as follows:

<table>
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<tr>
<th>Letter Grade</th>
<th>Definition</th>
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<tbody>
<tr>
<td>A</td>
<td>90% - 100% of cumulative points possible</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89% of cumulative points possible</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79% of cumulative points possible</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69% of cumulative points possible</td>
</tr>
<tr>
<td>F</td>
<td>below 60% of cumulative points possible</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete: This temporary grade is 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.</td>
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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: provided in class. Student must provide a three-ring folder.
- Oceanography/Geology sessions: provided in class
- Hawaiian Studies sessions: provided in class

Recommended/Optional materials
- Astronomy sessions: provided in class
- Oceanography/Geology sessions: provided in class
- Hawaiian Studies sessions: provided in class

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 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.**

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 know 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.
### SCI 160A Fall 2017

(CRN 60528)

Tuesday 2:30 – 5:00 p.m.

Polynesian Voyaging & Seamanship

**A: Astronomy: Ian Akahi Masterson (‘Imiloa 113)**

**G: Geology/Oceanography: Floyd McCoy (‘Imiloa 117)**

**H: Hawaiian Studies: Ian Akahi Masterson (‘Imiloa 113)**

<table>
<thead>
<tr>
<th>Week</th>
<th>Daily Activities</th>
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</table>
| 1    | **A** Horizon Coordinates & Movement of the Sun  
 Plotting the position of the Sun |
|      | **A** Maui Snares the Sun: Causes of Seasons & Latitude Variations  
 Scientific Proof of Earth’s Size, Shape, Rotation, & Revolution |
| 3    | **A** Quiz A-1 (25 pts)  
 *Hōkūlani Imaginariu***m* |
| 4    | **G** Introduction to Oceanography: Climate  
 Climate: Nā Makani Mau |
| 5    | **G** Climate: Nā Makani Mau  
 Coriolis Force |
| 6    | **G** Quiz G-1 (25 pts)  
 **H** Mai ka lani no a ka hōnua: Basic concepts of Papahulilani; Nā Kūkulu; Nainoa Thompson Star Compass; Navigator’s Perspective |
| 7    | **H** A’o Lani: Manaʻo o Ka Lā (The Sun)  
 Kumulipo (Oli); Kumukahi (Moʻolelo);  
 Haʻeʻe and Makanoni; movement of sun along horizon  
 Nā Hōkū: E ‘ohi ‘ohi i nā pono (Oli); Migration into Hawaiʻi;  
 Makaliʻi: The Navigator; Navigator’s Perspective |
| 8    | **H** Kilokilo: Environmental Observations  
 Kaulana e Ka Holo a Hōkūleʻa (Oli); Ka Wai Ola a Kāne: (The Water Cycle);  
 Cloud Observations; Wind / Ocean Observations; Weather & Surf Deities |
<table>
<thead>
<tr>
<th>Week</th>
<th>Daily Activities</th>
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<tbody>
<tr>
<td>9</td>
<td><strong>Quiz H-1 (25 pts)</strong>&lt;br&gt;Navigation Overview; Celestial Coordinate System&lt;br&gt;Polynesian Cosmology: Wākea &amp; Papa Legend; Star Maps</td>
</tr>
<tr>
<td>10</td>
<td><strong>A</strong>&lt;br&gt;Constellation ID: Manaiakalani &amp; Ka Lupe o Kawelo;&lt;br&gt;<em>(Hōkūlani Imaginarium or Physics Lab)</em></td>
</tr>
<tr>
<td>11</td>
<td><strong>A</strong>&lt;br&gt;<strong>Quiz A-2 (25 pts)</strong>&lt;br&gt;Oceanography: Upwelling &amp; Downwelling</td>
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<tr>
<td>12</td>
<td><strong>G</strong>&lt;br&gt;Oceanography: Nā Nalu&lt;br&gt;The Law of the Sea</td>
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<tr>
<td>13</td>
<td><strong>G</strong>&lt;br&gt;<strong>Quiz G-2 (25 pts)</strong>&lt;br&gt;Early Polynesian Migrations; Polynesian Triangle; Austral Migration; First Hawaiians and Plants</td>
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<td>14</td>
<td><strong>H</strong>&lt;br&gt;Papahānaumokuākea: How the islands were formed;&lt;br&gt;Early Polynesian Voyagers: Hawai‘i Loa; Pele &amp; Kamohoali‘i;&lt;br&gt;Mō‘iikeha &amp; La‘amaikahiki</td>
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<tr>
<td>15</td>
<td><strong>H</strong>&lt;br&gt;Modern Revitalization of Voyaging in Polynesia;&lt;br&gt;Hōkūle‘a: Ohana Wa‘a; Pacific Voyagers; Mālama Hōnua Worldwide Voyage</td>
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<tr>
<td>16</td>
<td><strong>H</strong>&lt;br&gt;<strong>Quiz H-2 (25 pts)</strong> &amp; <strong>Pā‘ina!</strong></td>
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