NOTE to prospective students: This syllabus is intended to provide students who are considering taking this course an idea of what they will be learning. A more detailed syllabus will be available on the course site for enrolled students and may be more current than this sample syllabus.

Course Name: Ecology and Conservation of Hawaiian Coral Reefs  
Course Number: FW 499  
Term Offered: Summer 2016 (Session 4)  
Credits: 4  
Instructor name: Susie Dunham  
Instructor email: Susie.dunham@oregonstate.edu  
Instructor phone: 541-737-2642  
Link to instructor bio or website: http://fw.oregonstate.edu/content/susie-dunham  
Teaching Assistant name and contact info: Jason Dunham; dunhamja@gmail.com

Course Description
This course is an exploration of the ecology of marine ecosystems in the Hawaiian islands. Using ecology, evolution and conservation biology as organizing themes this course will investigate the structure of coral reef communities and ecosystems then focus on the unique characteristics of these ecosystems that make them vulnerable to disturbance. The course will be conducted over a four week period including two weeks for online instruction and two weeks carrying out field studies in Hawaii (Big Island). This course combines approximately 120 hours of instruction, online activities and assignments for 4 credits. Through field experiences, lectures by faculty & guests, and class discussions students will learn about the dynamic interactions between marine organisms in relation to biotic and abiotic environments, the life histories of marine organisms and interrelationships within coral reef communities, the role of coral reef communities in marine ecosystems, and conservation issues relevant to coral reef ecosystems in Hawaii. Short lectures will be given by faculty to introduce key concepts. In addition to lectures, we will use a discussion-based format to explore the assigned readings. During these discussions we will highlight key concepts, relate concepts to one another, and relate field experiences to the topic at hand. This course will also cover methods of description and analysis of ecological communities. Students will conduct observational research during frequent field excursions to reef ecosystems and analyze data from at least one instructor-designed research project.

Prerequisites:
- Required/Enforced - BI 211/212/213 or BI 204/205/206.
- Recommended – BI 370
- Ability to swim 200 meters continuously, without resting and without aids such as fins, hand paddles, or any type of flotation device.

Communication
Please post all course-related questions in the General Discussion Forum so that the whole class may benefit from our conversation. Please email your instructor for matters of a personal nature. I will reply to course-related questions and email within 24-48 hours. I will strive to return your assignments and grades for course activities to you within five days of the due date.

Course Credits
This course combines approximately 120 hours of instruction, online activities and assignments for 4 credits.
Technical Assistance
If you experience computer difficulties, need help downloading a browser or plug-in, assistance logging into the course, or if you experience any errors or problems while in your online course, contact the OSU Help Desk for assistance. You can call (541) 737-3474, email osuhelpdesk@oregonstate.edu or visit the OSU Computer Helpdesk online.

- **GETTING STARTED**

COURSE SITE LOGIN INFORMATION
Information on how to login to your course site can be found HERE.

Learning Resources
- Randall, JE. 2010. Shore Fishes of Hawaii. UH Sea Grant, Honolulu, HI
- Additional readings will be made available via the course Canvas site
- See HI 2016 Packing List at end of syllabus

Note to prospective students: Please check with the OSU Bookstore for up-to-date information for the term you enroll (http://osubeaverstore.com/Academics or 800-595-0357). If you purchase course materials from other sources, be very careful to obtain the correct ISBN.

Canvas
This course will be delivered via Canvas where you will interact with your classmates and with your instructor. Within the course Canvas site, you will access the learning materials, such as the syllabus, class discussions, assignments, projects, and quizzes. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, please visit Ecampus Technical Help.

Measurable Student Learning Outcomes
i. Describe the ecological processes that control the species diversity present in coral reef ecosystems
ii. Interpret field observations in ecological and evolutionary contexts
iii. Describe connections between the fields of ecology and conservation biology
iv. Identify conservation issues relevant to coral reef ecosystems
v. Apply investigative research methods to study organisms in marine environments
vi. Communicate scientific research findings to peers using conventions appropriate for the Fisheries and Wildlife discipline.

Evaluation of Student Performance

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>Breakdown</th>
<th>Total Points (1000)</th>
<th>Percent of Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field Notebook</td>
<td>Daily entries</td>
<td>200</td>
<td>20</td>
</tr>
<tr>
<td>Literature Notebook</td>
<td>Per assigned paper</td>
<td>100</td>
<td>10</td>
</tr>
<tr>
<td>Discussion Boards</td>
<td>As assigned</td>
<td>100</td>
<td>10</td>
</tr>
<tr>
<td>Presentations</td>
<td>3 X 50 pts each</td>
<td>150</td>
<td>15</td>
</tr>
<tr>
<td>Class Project</td>
<td>3 analyses X 50 pts</td>
<td>150</td>
<td>15</td>
</tr>
<tr>
<td>Field Labs</td>
<td>4 labs X 50 pts</td>
<td>200</td>
<td>20</td>
</tr>
<tr>
<td>Participation</td>
<td>Academic X 50 pts</td>
<td>100</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Logistical X 50 pts</td>
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</tbody>
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Grading Scale

- 93-100% = A
- 90-92 = A-
- 80-82 = B-
- 78-79 = C+
- 68-69 = D+
- 63-67 = D

This course is offered through Oregon State University Extended Campus. For more information, contact:
Web: ecampus.oregonstate.edu  Email: ecampus@oregonstate.edu  Tel: 800-667-1465
Field Notebooks: Natural history is the study of organisms in their natural environments. The discipline emphasizes interpretation of field observations of form, function, behavior, life history, and interactions. Literally, the goal is to reconstruct the history of biological phenomena observed in the field. What is the context in which a particular behavior or interaction evolved? Natural history is generally not an experimental discipline. It relies on objective and unbiased observation. In this course we will devote considerable attention to observation and discussion of diverse taxa. Most of our focus will be on fish and invertebrates associated with corals. Whenever you observe an organism in its natural environment you should be concerned with three levels of detail:

a. Objective description of the organism, phenomenon, or event (what, when, where)

b. Interpretation of biological, ecological or evolutionary context (how, why)

c. Your thoughts as a naturalist (what did you learn, how does it connect to things that you have learned in other settings outside of this class)

Information compiled in your field notebook will complement many other class assignments. As a result the quality of your field notebook will be a primary instrument for evaluation on its own and will influence your performance on other assignments. Field notebooks will be graded at the end of the course. You should check in with us regularly during the trip to get feedback on your notebooks rather than waiting to cram in all together at the end. To receive full credit your field notebook must contain a minimum of ten (10) daily entries. This should not be difficult as you should make all field notebook entries while we are in the field. If you are fastidious about recording all data and observations throughout the course of each day you should not have to do much on this assignment in the evenings. It is critical that you take the time to keep your handwriting neat and clear at all times. **We cannot and will not grade entries that we cannot read!!**

Field notebook entries are to be made on a daily basis. You should structure your notebook by leaving 2-3 pages in the front for a table of contents that will be updated at the end of each day. The table of contents should include both the name of the daily activity, the date of the activity and corresponding page numbers. Pages in the rest of the notebook should be numbered consecutively. In general, field notebook entries should contain a heading that includes a brief title or description of the activity, the date, location (site name and general directions), weather conditions and other students involved. Following this heading you should produce a short paragraph or list of objectives for work completed that day. Your instructors will clarify these objectives on a daily basis. The remainder of each entry should at a minimum include (but is not limited to):

- a list of the species seen that day
- notes on key identifying characteristics of new species (seen for the first time on that day) - include sketches when appropriate or as time allows
- notes on the relative abundances of recorded species
- notes on observed habitat or assemblage associations for observed species
- notes on intra or inter-specific interactions (when observed)
- sketched maps of the study area when relevant
- Data collected for field labs research projects (transcribed from your dive slate)

In describing structures, associations or behaviors, attempt to be unbiased: i.e., describe the structure or behavior without interpreting its use or purpose. When you add thoughts and interpretations identify them as such and then speculate, propose hypotheses, or discuss your ideas.

The directions provided above are intended to give you a general framework for what we will be looking for in field notebook entries. On many days your instructors will identify areas that require more or less focus within this framework. **It is your responsibility to be sure you are clear on what we expect at the start of each day.**

**Literature Notebook:**

During both the online and off-campus portions of the course we will read several primary literature articles that emphasize selected lecture topics. Your literature notebooks should contain **two** short entries for each assigned article. The first entry should be a summary of your thoughts while reading the article, including questions to bring to discussion boards when appropriate. The second entry should summarize the class discussion of the article. Class discussions will be held online in the
first two weeks of the class and in person while we’re in Hawaii. Please keep your literature notebook in electronic form using Word.

**Presentations & Discussion Boards:**
For six of the assigned primary literature articles, students will be assigned the tasks of

1) Preparing a ~10-minute PowerPoint presentation that outlines the paper and raises 2 to 3 questions for discussion.
2) Moderating, directing, and summarizing a discussion of their assigned article.
3) Your literature notebook should indicate the articles you presented to the class. Your presentation can take the place of the pre-class summary – but you should still have a summary of the online discussion in your literature notebook.

You will work in small groups of three students to prepare and deliver these presentations. You will be graded as a group and each student is expected to take an equal part of the presentation and discussion.

We will also divide you into groups of 2-3 students and each group will be responsible for becoming ‘taxonomic experts’ on a family of reef fish and will educate all the other students about how to recognize common species in that family while snorkeling. During the online portion of the course these groups will be responsible for preparing a presentation about their group of fish that includes i) description of characteristic behaviors, some details on their feeding ecology, and tips on identifying at least 5-10 common species. This presentation is worth 50 points. Your primary reference for building your presentation is Randall (Shore Fishes of Hawaii), other resources posted on the Canvas site, and various internet sites. After your presentation is made available to the class, group members will be responsible for moderating a discussion board where students are able to provide feedback on the presentation, ask clarifying questions and supply additional ID tips that they may have encountered in their own reading.

**Field Labs:**
You will be investigating different aspects of coral reef ecology via a directed set of field assignments while we are in Hawaii. These projects will involve making observations and collecting data as a class and will be evaluated by means of quizzes or short written research reports (usually a graph, table, and statement of research findings). You will work with a partner during field activities but the written report you turn in should be your original work. The topic and grading criteria for each of these reports will be provided when we make the assignment.

**Class Project:**
We will complete one project as a class that will address the measurement and comparison of reef fish diversity. This class project is intended to provide you with experience in experimental design and statistical data analysis. Your work on the class project will be evaluated using three short assignments similar to what you’ll turn in for field labs but different in that they are interconnected and build on each other. Although we will collect the data for this project as a group, all class project reports will be completed individually and must be computer generated. Each final report will consist of:

- A statement of project objectives, hypotheses and predictions
- A description of the study area and all methods used to collect data
- Project results
- A brief discussion that relates project results to proposed hypotheses and predictions

**Participation:**
Full participation by all class members is critical to the success of experiential field courses. Because of its importance, participation will constitute 10% of your grade. Participation will be evaluated at two levels (academic and logistical) each worth 5% of your total grade each.

**Academic:**
This course is offered through Oregon State University Extended Campus. For more information, contact:
Web: ecampus.oregonstate.edu  Email: ecampus@oregonstate.edu  Tel: 800-667-1465
Attendance is required for all activities. All field trips are absolutely required. Involuntary debilitating illness is the only allowable excuse for not participating in daily academic activities. Your presence alone is not enough to garner you academic participation points. We also expect you to be 'academically engaged' in all activities. This means that you are taking notes, asking questions, and are actively participating in group discussions. It also means that you are focused on tasks assigned to you during class activities. This is not intended to be punitive. This sort of evaluation will keep you from getting behind on daily assignments during the trip and eliminate the need for cramming to complete assignments.

Logistical:
You represent yourself and Oregon State University while we are in Hawaii. You should show consideration for others at all times and refrain from behavior that may reflect badly on our group. Poor performance in any one of the listed items below will result in substantial loss of participation points. Logistical participation includes the following:

1) Being prepared and ready to load up on time each day
2) Assistance with scheduled shopping and other logistical activities
3) Courtesy toward others / Team player
4) Compliance with reasonable requests for assistance
5) Condition-free positive attitude (we are in Hawaii after all)
6) Financial responsibility
7) Appropriate personal hygiene
8) Proper care of materials and equipment (your own and others)
9) Enthusiastic participation in all activities

Course Content
See Excel Spreadsheet

Course Policies
Kapu (Translation = Forbidden):
You need to remember at all times that we represent Oregon State University on this trip. We recognize that you are all adults, but the instructors of this course are responsible and held legally accountable for your safety 24/7 regardless of whether or not we are actively engaged in academic activities. Obviously, you must obey local laws. However, if at any time your behavior exceeds the bounds of civility or decency, or otherwise infringes on the rights of others, you will be excused from the group, sent home on the next available flight and given a failing grade in this course. These are the things that will result in your expulsion from the course. If you participate in any of the activities listed below you will be immediately transported to the nearest airport and asked to depart at your expense.

1) SAFETY (Our #1 Priority!!!)
   a. Endangering the safety of yourself or any other person purposefully or through negligence
   b. Willful disregard for safety policies required by course instructors (e.g., signing in & out during free time; swimming alone)
2) Abuse of drugs or alcohol – this is a dry course – no drinking for the duration for students or instructors.
3) Academic dishonesty
4) Unprofessional, inappropriate or illegal activities
5) Repeated nonparticipation in academic or logistical activities

Discussion Participation
Students are expected to participate in all graded discussions. While there is great flexibility in online courses, this is not a self-paced course. You will need to participate in our discussions on at least two different days each week, with your first post due no later than Wednesday evening, and your second and third posts due by the end of each week.

Incompletes
Incomplete (I) grades will be granted only in emergency cases (usually only for a death in the family, major illness or injury, or birth of your child), and if the student has turned in 80% of the points possible (in other words, usually everything but the final paper). If you are having any difficulty that might prevent you completing the coursework, please don’t wait until the end of the term; let me know right away.

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Guidelines for a Productive and Effective Online Classroom

Students are expected to conduct themselves in the course (e.g., on discussion boards, email) in compliance with the university’s regulations regarding civility.

Civility is an essential ingredient for academic discourse. All communications for this course should be conducted constructively, civilly, and respectfully. Differences in beliefs, opinions, and approaches are to be expected. In all you say and do for this course, be professional. Please bring any communications you believe to be in violation of this class policy to the attention of your instructor.

Active interaction with peers and your instructor is essential to success in this online course, paying particular attention to the following:

- Unless indicated otherwise, please complete the readings and view other instructional materials for each week before participating in the discussion board.
- Read your posts carefully before submitting them.
- Be respectful of others and their opinions, valuing diversity in backgrounds, abilities, and experiences.
- Challenging the ideas held by others is an integral aspect of critical thinking and the academic process. Please word your responses carefully, and recognize that others are expected to challenge your ideas. A positive atmosphere of healthy debate is encouraged.

Statement Regarding Students with Disabilities

Accommodations are collaborative efforts between students, faculty, and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 541-737-4098.

Accessibility of Course Materials

All materials used in this course are accessible. If you require accommodations please contact Disability Access Services (DAS).

Additionally, Canvas, the learning management system through which this course is offered, provides a vendor statement certifying how the platform is accessible to students with disabilities.

Expectations for Student Conduct

Student conduct is governed by the university’s policies, as explained in the Student Conduct Code.

Academic Integrity

Students are expected to comply with all regulations pertaining to academic honesty. For further information, visit Student Conduct and Community Standards, or contact the office of Student Conduct and Mediation at 541-737-3656.

OAR 576-015-0020 (2) Academic or Scholarly Dishonesty:

a) Academic or Scholarly Dishonesty is defined as an act of deception in which a Student seeks to claim credit for the work or effort of another person, or uses unauthorized materials or fabricated information in any academic work or research, either through the Student's own efforts or the efforts of another.

b) It includes:
(i) CHEATING - use or attempted use of unauthorized materials, information or study aids, or an act of deceit by which a Student attempts to misrepresent mastery of academic effort or information. This includes but is not limited to unauthorized copying or collaboration on a test or assignment, using prohibited materials and texts, any misuse of an electronic device, or using any deceptive means to gain academic credit.

(ii) FABRICATION - falsification or invention of any information including but not limited to falsifying research, inventing or exaggerating data, or listing incorrect or fictitious references.

(iii) ASSISTING - helping another commit an act of academic dishonesty. This includes but is not limited to paying or bribing someone to acquire a test or assignment, changing someone's grades or academic records, taking a test/doing an assignment for someone else by any means, including misuse of an electronic device. It is a violation of Oregon state law to create and offer to sell part or all of an educational assignment to another person (ORS 165.114).

(iv) TAMPERING - altering or interfering with evaluation instruments or documents.

(v) PLAGIARISM - representing the words or ideas of another person or presenting someone else's words, ideas, artistry or data as one's own, or using one's own previously submitted work. Plagiarism includes but is not limited to copying another person's work (including unpublished material) without appropriate referencing, presenting someone else's opinions and theories as one's own, or working jointly on a project and then submitting it as one's own.

c) Academic Dishonesty cases are handled initially by the academic units, following the process outlined in the University's Academic Dishonesty Report Form, and will also be referred to SCCS for action under these rules.

Conduct in this Online Classroom
Students are expected to conduct themselves in the course (e.g., on discussion boards, email postings) in compliance with the university's regulations regarding civility.

OSU Student Evaluation of Teaching
Course evaluation results are extremely important and are used to help me improve this course and the learning experience of future students. Results from the 19 multiple choice questions are tabulated anonymously and go directly to instructors and department heads. Student comments on the open-ended questions are compiled and confidentially forwarded to each instructor, per OSU procedures. The online Student Evaluation of Teaching form will be available toward the end of each term, and you will be sent instructions via ONID by the Office of Academic Programs, Assessment, and Accreditation. You will log in to “Student Online Services” to respond to the online questionnaire. The results on the form are anonymous and are not tabulated until after grades are posted.
Hawaii 2016
Preliminary Packing List

If you have questions about any of this please, please email your course instructors and ask!!

**Packing your Personal Gear:** During our first day on the Big Island we'll make a foray into Kona for breakfast and so that folks can shop for gear they did not want to buy on the mainland (rash guards, reef shoes, bathing suits, etc.). Many of these items will actually be cheaper and easier to find in Hawaii. If you would like to rent your snorkel gear we’ll take care of that during this trip as well. While you’re packing and figuring out what you still need – give a little thought to what you’ll want to purchase this first day and bring enough money to cover these expenses. After everyone has their gear we’ll head to Kahalu’u Beach Park ([http://www.shorediving.com/Earth/Hawaii/TBI/Kahau/pic5.htm](http://www.shorediving.com/Earth/Hawaii/TBI/Kahau/pic5.htm)) for you to get your gear in working order, have your first dip in the ocean – and complete your first field activity.

Keep in mind that laundry facilities and grocery stores will be readily accessible and pack accordingly! You can plan on hitting a laundry facility after the first 6-7 days on the island so pack enough underwear to get you through that length of time.

1) Before you shove everything in one giant suitcase, be sure to hop on the TSA website ([http://www.tsa.gov/](http://www.tsa.gov/)) and the website for your airline and review their policies on what you can bring in your carry-on and how heavy checked bags can be before you are charged an extra fee.

2) A solid day pack that you don’t mind getting wet or filling with wet gear.
   a. Big enough to accommodate field gear
   b. Comfortable enough to carry on a 2-3 mile hike
   c. Plan to use this as your carry on for air travel and pack it according to current TSA regulations.

3) Your favorite pillow if you can’t sleep without it

4) Ear plugs – if you’re a light sleeper

5) An unbreakable travel mug for tea/coffee

6) At least two unbreakable 1-liter water bottles, a camel back system, or some other system for carrying enough water (2-3 liters) to stay hydrated.

7) A flashlight or head lamp for reading after your roommate has gone to sleep – Pack extra batteries and bulbs if you think you’ll need them.

8) All necessary grooming items: Soap; shampoo; deodorant; toothbrush; lotion; razor; etc.

9) Medications and first aid supplies: there will be a group first aid kit but you should bring
   a. A bottle of Aloe or other lotion that will soothe irritated skin
   b. Band-aids; antibiotic cream; your favorite pain reliever; other items you frequently use during outdoor activities
   c. Personal medications: bring enough for the entire time but also bring a copy of your prescriptions in case you need a refill
   d. Ear drops if you get ear infections easily

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e. Spare glasses or lenses: If you wear contacts bring glasses also
   i. Croakies – to attach your glasses to your head
   ii. A durable case
   iii. Bring a copy of your eyeglass prescription – just in case or if you think you’d like to rent a
        prescription mask
10) A two week supply waterproof sun block SPF 30 or higher
   a. Try out a few brands and make sure you enjoy slathering it all over your body – you WILL be applying it
      every day!
11) Mosquito repellent (optional): There won’t be many mosquitos where we’ll be but if you’re sensitive you may want
    some.
12) At least two bathing suits: One to dry on alternate days – this will help prevent yeast and other sorts of infections that
    can result from wearing a wet suit all the time. Go for function so that you don’t have to worry about losing your suit
    while entering/exiting the water
13) A beach towel - something you can sit on or wrap up in if you get chilled. A sarong can also help you stay out of the
    sun (these are abundant and inexpensive in Kona). Poly towels also work well for the beach and are light weight.
14) Shoes: sturdy sandals; reef shoes; solid hiking boots or trail shoes
   a. Avoid Velcro on the sandals if you can – sand clogs velcro
   b. Be sure the reef shoes have a thick flexible soles
   c. Hiking footwear should be comfortable enough to cover ~ 5 miles on rocky terrain (i.e., lava)
15) A light weight rain coat or poncho – we’ll be staying around 1,500 feet in elevation and it will likely rain while we’re
    there.
16) Clothing: shorts; pants, shirts, socks; underwear
   a. Go for fabric that breathes and dries quickly for all items
   b. One nice casual outfit for when we’re in town
   c. Don’t over pack – we’ll typically have access to laundry facilities so you can probably get by with 2 shorts; 1
      pants; 3 light shirts; 1 light weight long-sleeve shirt; 6 pairs of socks. Bring at least 1 shirt to wear in the water
   d. Travel clothesline for drying things in your hotel room
17) A wide brimmed hat: I can’t appropriately word how much it hurts to burn the part in your hair or the tops of your ears in
    the tropics!
18) A light wind breaker or jacket for higher elevations
19) Sunglasses with UV protection!
20) A waterproof watch (optional)
21) Cell phone
22) Valuables: Try to minimize and be prepared to carry anything of value with you when we leave the vehicles or leave it
    wherever we are lodged. Auto break-ins do occur in some areas.
Packing your Academic Gear

1) Mask; snorkel; fins (everything listed below can be rented in Kona)
   a. Make sure the mask does not leak!
   b. Consider a prescription mask if you wear glasses or contacts – these can be rented in Kona if you bring your prescription
   c. Get fins with a flexible closed foot to prevent blisters
   d. Shortie wetsuit if you get cold easily - Can be rented in you prefer
   e. Mesh bag to carry snorkeling gear
   f. Waterproof bag for valuables you don’t want to leave in the vehicle: i.e., wallet, cell phone, etc.

2) Camera (Optional)

3) Your text books!

4) Binoculars (Optional) - Waterproof if possible

5) Laptops
   a. One per person
   b. Make sure each has a Microsoft office Word, Powerpoint, and Excel
   c. Our hotel will have free wifi and we’ll be using Canvas while on the island

6) Notebooks, etc.
   a. Field notebook – something durable, preferably with write in the rain paper
   b. Notebook for taking notes during evening presentations
   c. Pens, pencils, & a few colored pencils for sketching
   d. Dive slate for taking notes while snorkeling (can be purchased in Kona)

REFUND POLICY INFORMATION

Please see the Ecampus website for policy information on refunds and late fees.