



**NSCI 3950: Natural Sciences Practicum  
Syllabus  
(Template- Sample)**

**Spring2010**

Number of Credits:   1  

INSTRUCTOR: David Hyrenbach, PhD  
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**CATALOG DESCRIPTION**

An introductory research experience for students interested in working on special topics under the direction of a science faculty mentor.

**PREREQUISITES:**

Permission of instructor.

**COURSE DESCRIPTION**

The intent of the practicum is to provide students with an experience in a research environment that makes use of their prior and current academic experience, helps to hone their problem-solving abilities, and provides exposure to possible future research and/or career options.

**LEARNING OUTCOMES:**

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

- participate productively in an ongoing research project under the direction of a faculty mentor
- document activities accurately and thoroughly in a journal and/or laboratory notebook
- describe the goals, scope, and potential impacts of an active research project
- articulate his/her professional goals in science
- explain how research may fit in with his/her own educational goals

**COURSE REQUIREMENTS**

Students must first work with their mentors to define the activities, timeline and goals for their practicum project and obtain approval from their sponsor and faculty advisor by completing a Practicum Proposal Contract. Students are expected to spend about 4 hours per week during fall or spring semester (or an equivalent amount of time during the summer) working on their practicum project. Students should meet at least weekly with their primary supervisor (faculty advisor or sponsor) to assess progress.

The practicum has two academic requirements beyond the elements in the practicum contract.

(1) to mark weekly progress, you are expected to keep a logbook reflecting on the problem-solving process of your day-to-day tasks. The logbook should reflect your thinking processes and analysis of events while you are actively learning in the workplace. It is not enough to mechanically go about doing tasks, but rather you should be aware of the actual or potential impacts of your tasks. The goal is to produce a log of your experiences that you can later use as a "How-To" or "How-Not-To" resource to guide your future professional endeavors. The journal will remain your property, although instructors will spot check for progress on logbook entries.

Specifically your logbook should record any or all of the following:

- ◆ any specific practical knowledge that you have gained
- ◆ any incident that went especially well (identify the stages of planning and implementation)
- ◆ any incident where there was a breakdown (identify sources of malfunction)
- ◆ any incident that was particularly demanding (how was it dealt with successfully)
- ◆ any incident in which you believe you made a unique contribution
- ◆ any incident that stands out in your mind as particularly memorable or particularly unpleasant
- ◆ any incident during which a "lightbulb" went off (re-create the thought process that led you there)

(2) To wrap up your practicum experience, you will need to write a short (up to 3 pages) report on the research topic and results of your project. The components of the report will depend on the nature of the project. The report might address the following:

- ◆ How does this project fit into other ongoing research? What are the unresolved questions and/or future work?
- ◆ How did your actual practicum experience compare to your expectations – was the task list realistic? the time line realistic? the outcomes realistic? What significant factors/components of the project were not anticipated?
- ◆ How did this experience shape your vision of a future career in the sciences?

#### GRADING

Grading for this course is pass/fail. A passing grade will require the completion of the following three aspects of the course:

1. Logbook
2. Final report
3. Participation

To earn a passing grade, all three graded aspects of the course must be completed at a “satisfactory” level according to clear criteria communicated to the student with rubrics that describe all evaluated parameters and their contribution to the final grade determination. The instructor will customize the logbook, final report, and participation rubrics to the project as necessary and discuss them with the student during the first week of the project.

#### ACADEMIC HONESTY

The HPU honesty policy is attached. You are required to read and acknowledge via WebCT that you have read and understand this policy and the definition of plagiarism.



**NSCI 3950: Natural Sciences Practicum  
Practicum Proposal Contract  
(Template- Sample)**

**Spring 2010**

Jillian Bennett

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Faculty Mentor Name and Contact Information:

David Hyrenbach

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Other Sponsor Name and Contact Information (if relevant)

Devon Francke

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PROJECT DESCRIPTION

This student will participate in a project determining the diving and movement behaviors of green sea turtles in and around Kaimalino Cove, Kailua Bay. The student will participate in field activities related to this project, including: a) kayaking/boating along with mentor in Kailua Bay for visual and acoustical surveys of turtles; b) snorkeling for better visual identification of sea turtles; c) attaching and collecting acoustical and temperature/depth receivers from the water while kayaking/boating; d) using the acoustic and temperature/depth receivers while kayaking/boating; e) create and distribute questionnaires to locals quantifying human-turtle related activities within the study site; f) using a GPS to mark waypoints or track paths while kayaking/boating; and g) maintaining a logbook of research activities throughout the project. Research will likely vary each week, depending on the ongoing activities taking place in the field and the weather conditions. Student participation will range from strictly observation or monitoring to hands-on manipulations, depending on the research activity, experience, and comfort level of the student, graduate mentor, and faculty member.

In addition to the field research, regular meetings with the faculty mentor are required. Initially a 30 minute weekly meeting – in person or via phone - will be scheduled, and this can be adjusted as necessary.

PROJECT TASK LIST (numbered list of specific tasks to be completed by student)

Learn how to collect data using a temperature/depth receiver and acoustic receiver

Assist with kayaking/boating while mentor collects data, or vice versa

Read literature pertaining to the field of study, and possibly choose own topic for research

Document personal growth in a journal/logbook

Document field experiences in a journal/logbook

Write reflection paper (up to 3 pages), due at end of semester

Jillian Bennett

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PROJECT TIME LINE (dates for completion of tasks from above)

I plan to complete various experiences by the following target dates:

Week 1-3: obtain general idea of research methods and purpose of the study and begin kayaking/boating surveys

Week 4: start reading the relevant literature

Week 7-8: become proficient using temperature/depth recorder and acoustic receiver

Week 15: complete logbook and reflection paper

EXPECTED OUTCOME(S)/PRODUCTS

Acquire new research skill set, including use of TDRs and acoustic receivers

Apply knowledge from the literature to evaluate and design field research

Gain a better understanding of green sea turtle ecology and behavior in Kaimalino Cove

USE OF PROJECT RESULTS (how will the project results be used?)

I hope to contribute to this project, the goals of which include quantifying the diving and movement behaviors of green sea turtles in Kaimalino Cove, understanding how the turtles enter/exit the study area, and how they make use of the canal that empties into the cove. The final goal of this project is to publish the research results in a peer-reviewed environmental research journal.