

BSC 3911 Entering Research in Biology
Fall 2015

Catalog Description:

A seminar course to complement a student's mentored research experience. Must be taken concurrently with research credits. Students meet weekly to share their research experiences and to get feedback on the progress of their research projects.

Credit Hours: 1

Pre-requisites and Co-requisites:

Co-requisite: BSC 4910 or BOT 4905 or ZOO 4905 or IDH 4917 or permission of instructor

Instructor Information:

Name: Dr. William Spencer

Office location: 214 BAR

Telephone: 352.273.0115

E-mail address: wespencer@ufl.edu

Office hours: 5:00PM-6:00PM Wed., 3:30PM-4:30PM Thurs.

Course Meeting Time: TBD

Course Meeting Location: TBD

Course Website:

Course materials and related information will be posted on the course E-Learning (Sakai) website. You are responsible for all announcements posted on the course website for this course at <http://lss.at.ufl.edu>.

Fees: None

Textbooks and Other Required Materials: None

Student Learning Objectives:

Students will successfully interact with their research mentor during the semester as they develop and conduct a research project. The main objectives of the seminar course are to help students write a research project proposal, begin doing research, support students during their research projects, and present their findings in a public venue.

Research Process Skills:

Students will

- define a research question, design question or hypothesis for their project.
- find and evaluate relevant primary literature and background information related to their project.
- design experiments to test their hypothesis.
- learn the techniques needed to do their experiments.
- learn and follow appropriate protocols for documenting their research.
- analyze their experimental data.
- use logic and evidence to build arguments and draw conclusions about their data.
- define future research questions.

Communication:

Students will

- explain the focus of their group's research, how individual research group members and projects are connected, and how the research in their group contributes new knowledge in their discipline.
- connect their research to issues relevant to society at large.
- Effectively communicate their research findings in oral and written scientific formats.
- connect their research experience to what they have learned in courses.

Professional Development:

Students will

- establish and maintain a positive relationship with their mentor by agreeing on common goals and expectations for the research experience, and revisit those goals and expectations regularly.
- define their roles and responsibilities as a member of their research group.
- define and contribute to discussions about the forms and consequences of scientific misconduct.
- contribute to peer review in the learning community and explain the role of peer review in science.
- know the mechanisms for funding research.
- identify research career options in their discipline.

Attendance Policy:

Attendance is required. Please notify your instructor as soon as possible if you cannot attend due to sudden illness, family emergencies, and so forth. If you miss class with a valid excuse you will be provided alternative materials to complete.

Course Background:

This seminar course is based on the *Entering Research Program* developed by Janet Branchaw, Christine Pfund and Raelyn Rediske at the University of Wisconsin-Madison (UWM) with funding from the National Science Foundation, the Howard Hughes Medical Institute, the UWM Institute for Cross-College Biology Education, and the UWM Center for Biology Education. Course resources are available from *Entering Research: a Facilitator's Manual*. J Branchaw, C Pfund and R Rediske. WH Freeman and Company, 2010.

| Course Outline | | |
|---|---|--------------------|
| (Topics and scheduling may change. Students will be updated via Sakai webmail.) | | |
| Week | Topic | Assignments |
| 1 | No Meeting (Late registration) | None |
| 2 | Introductions and Undergraduate Research at a Research-1 Institution | See Sakai |
| 3 | Your Mentor's CV and Research Specialization | See Sakai |
| 4 | The Cost and Funding of Research | See Sakai |
| 5 | Ethics in Research | See Sakai |
| 6 | Defining Your Hypothesis or Research Question | See Sakai |
| 7 | Designing Your Experiments | See Sakai |
| 8 | Documenting Your Research Collecting and Organizing Data | See Sakai |
| 9 | Summarizing and Depicting Data Preparing Tables, Graphs, and Figures | See Sakai |
| 10 | Preparing Tables, Graphs, and Figures | See Sakai |
| 11 | Analyzing Data | See Sakai |
| 12 | Statistical Analyses | See Sakai |
| 13 | Presenting Data | See Sakai |

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|----|-----------------------|-----------|
| 14 | Student Presentations | See Sakai |
| 15 | Student Presentations | See Sakai |

Assignments are submitted using Sakai.

| Assignment (Exact titles of assignments may change. Students will be updated using Sakai webmail.) | Points |
|--|---------------|
| Discussion Participation | 20 |
| Wiki Page | 20 |
| Curriculum Vitae | 5 |
| Research Group Diagram | 5 |
| Research Funding | 5 |
| Ethics Case Study | 5 |
| Hypothesis or Research Question | 5 |
| Research Documentation Protocol | 5 |
| Experimental Design | 5 |
| Potential Results w/ Timeline | 5 |
| Final Presentation | 10 |
| Research Experience Reflection | 10 |
| Total | 100 |

Letter Grade Assignment

| Point Range (%) | Letter Grade | GPA equivalent |
|-----------------|--------------|----------------|
| 90.00 | A | 4.0 |
| 86.7 – 89.9 | A- | 3.67 |
| 83.3 – 86.6 | B+ | 3.33 |
| 80.0 – 83.2 | B | 3.0 |
| 76.7 – 79.9 | B- | 2.67 |
| 73.3 – 76.6 | C+ | 2.33 |
| 70.0 – 73.2 | C | 2.0 |
| 66.7 – 69.9 | C- | 1.67 |
| 63.3 – 66.6 | D+ | 1.33 |
| 60.0 – 56.7 | D | 1.0 |
| 56.7 – 59.9 | D- | 0.67 |
| < 56.7 | E | 0 |

<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

UF Counseling Services

- Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
 - UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services.
 - Career Resource Center, Reitz Union, 392-1601, career and job search services.
- Many students experience test anxiety and other stress related problems. “A Self Help Guide for

Students” is available through the Counseling Center (301 Peabody Hall, 392-1575) and at their web site: <http://www.counsel.ufl.edu/>.

Honesty Policy

- All students registered at the University of Florida have agreed to comply with the following statement: “I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University.”
- In addition, on all work submitted for credit the following pledge is either required or implied: *“On my honor I have neither given nor received unauthorized aid in doing this assignment.”*
- If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of Florida Academic Honesty Guidelines at: <http://www.dso.ufl.edu/judicial/procedures/academicguide.html>.

Accommodation for Students with Disabilities

- Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: <http://www.dso.ufl.edu/drp/services/>.
- It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

Software Use

All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.