

BIOL490-001 Communicating Research

Instructor of Record: Dr. Sarah Golding (she/her)

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Office: LFSCB 218B

Student Hours: By google appointments link on Canvas

Course Meetings Times:

Monday 3.00 – 3.50 pm Trani 251

PLEASE NOTE: To register for this class you must request an override using the form below. Overrides will not be released until after May 1st for summer and fall registration and Dec 1st for spring semester studies. Mentor confirmation must have been received for the overrides to be issued.

Course Description:

BIOL 490. Presenting Research. 1 Hour.

Semester course; 1 credit. Pre-Co-requisite: [BIOL 492](#) or [495](#), and senior standing. Opportunity for students to develop skills necessary for effective oral presentation of their research work. This includes a variety of seminar discussions and activities such as the preparation of visual materials and the statistical analysis of data. Students will make several oral presentations directly related to their specific [BIOL 492](#) or [495](#) projects.

Program Level Outcomes:

Communication skills - Students will demonstrate oral and written communication skills needed for professional careers in the field of biology.

Critical-thinking skills -Students will demonstrate critical thinking, problem-solving and analytical skills.

Method and inquiry -Students will demonstrate knowledge in the methods of inquiry and research in biology.

Course Goals:

BIOL 490 is a required class for students to complete the Research and Thesis class series. BIOL 490 Presenting Research will help students use data generated during their laboratory experience (BIOL492 or BIOL495) as source material to prepare a poster and oral research presentations.

Learning Outcomes:

To enable the student to demonstrate the ability to;

- Write a comprehensive abstract describing their research
- Prepare Figures for scientific presentations
- Prepare a professional research poster
- Prepare visual materials for oral research presentation
- Deliver polished research poster and oral presentation

Co-Requisite Course Descriptions:

BIOL 492. Undergraduate Research. 1-4 Hours.

Semester course; 1-4 independent study hours. 1-4 credits. Prerequisites: BIOZ 151 and BIOZ 152, each with a minimum grade of C; and permission of the chair of the Department of Biology. May be repeated for credit. A maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492,

BIOL 493, BIOL494, BIOL 495 and/or BIOZ 395) may be applied to the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. A minimum of two credits is required for the course to count as a laboratory experience. In this course, students will immerse themselves in biologically relevant primary research under the mentorship of a VCU faculty member. Students will actively participate in projects that involve data collection and analysis, mastering field and/or laboratory techniques, and executing experimental procedures. The course emphasizes hands-on learning through mentorship. Students must commit to at least three hours of supervised research activity per week for each credit hour earned. This experience is designed to enhance students' practical skills, critical thinking, and application of research methodologies while contributing to cutting-edge science.

OR

BIOL 495. Research and Thesis II. 1-4 Hours.

Semester Course; 1-4 research hours. 1-4 credits. Prerequisites: BIOL 494, permission of the faculty mentor and the department of biology. Corequisite: BIOL 490. May be repeated for a maximum of eight credits. Students may take a maximum of four credits per semester; maximum total of six credits for all research and internship courses (BIOL 395, BIOL 451, BIOL 453, BIOL 492, BIOL 493, BIOL494, BIOL 495 and/or BIOZ 395) may be applied to the 40 credits of biology required for the major. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. A minimum of two credits is required for the course to count as a laboratory experience. A minimum of four credits is required for honors in biology. Additional credits from these courses may be applied to upper-level and open elective credits toward the degree. A minimum of two credits is required for the course to count as a laboratory experience. A minimum of four credits is required for honors in biology. Research and Thesis is a comprehensive two-semester course sequence designed for students to immerse themselves in a substantial research project and produce a high-quality research thesis. Second, in the sequence students will continue to engage in rigorous research activities dedicating 3-4 hours per week per BIOL 495 credit to collecting, analyzing and reporting their data. The culmination of this course will be the creation of a detailed and well-crafted research thesis. This course is highly recommended for students planning to pursue advanced degrees such as MS, Ph.D., MD-PhD or other dual degrees.

Structure of course sequence:

BIOL 494	1-4 credits	Research and Thesis I	Fall semester, schedule agreed with mentor
BIOL 489	1 credit	Communicating Research	Fall Semester - Wed 2 pm
BIOL 495	1-4 credits	Research and Thesis II	Spring semester, schedule agreed with mentor
BIOL 490	1 credit	Presenting Research	Spring Semester - Mon 3 pm

Attendance: Students are required to work with their research mentors for 3-4 hours per week per credit hour. The research mentor monitors this time, and attendance issues are reported to the course coordinator. Students are also required to attend 80% of scheduled BIOL490 seminar classes.

Course Schedule:

Date	In Class Discussion	Coursework Due
Week 1	Introduction to course/People/projects	
Week 2	Intro to preparing a poster	
Week 3	Intro to oral presentations	
Week 4	Writing Research Abstracts	

Week 5	Background	Abstract Draft
Week 6	Figures	Abstract to Mentor
Week 7	Making Posters	Abstract to UROP
Week 8	SPRING BREAK	
Week 9	Bring Posters to Class	Draft of Poster
Week 10	Talk Rehearsal	Draft of Poster to Mentor
Week 11	Talk Rehearsal	Poster to UROP
Week 12	Talk Rehearsal	
Week 13	Talk Rehearsal	
Week 14	Talk Rehearsal	
Week 15	Final Talks	

Textbook: No one text is used in this course.

Grading: 100% Coursework

Writing guidelines/expectations: This course requires using the CSE (Council of Science Editors) Citation Style. Please follow the writing guidelines posted to Canvas under course documents. Primary literature and full in-text citations following the posted guidelines will be expected for all assignments. <https://www.csemanual.org/Tools/CSE-Citation-Quick-Guide.html>

Generative AI Use: It is a violation of university policy to misrepresent work that you submit by characterizing it as your own, such as submitting responses to assignments that do not acknowledge the use of generative AI tools. Generative AI responses should be cited as personal communication as described in the writing and citation guidelines. Please feel free to reach out to me with any questions you may have about any use of generative AI tools.

Honors in Biology The Biology 489-490-494-495 course sequence allows to become eligible for the honors in Biology transcript notation.

Biology majors may graduate with honors in biology. To qualify, students must have overall and biology GPA of at least 3.5 and must complete the following courses in this sequence: [BIOL 392](#), BIOL489, BIOL489 and at least four credits of BIOL494/[BIOL 495](#). Grades of A or B must be earned in each of the listed courses. Students must meet all Department of Biology requirements for graduation. Students who qualify will have the notation "Honors in Biology" placed on their transcript. Students should consult their academic advisers to create a program suitable to their needs and interests.

VCU Academic rules and regulations:

Students should visit <http://go.vcu.edu/syllabus> and review all syllabus statement information. The full university syllabus statement includes information on safety, registration, the VCU Honor Code, student conduct, withdrawal and more.

Use [VCU Libraries](#) to find and access library resources, spaces, technology and services that support and enhance all learning opportunities at the university.