**Research Problems in Entomology
11:370:493-494**

**Number of credit hours**: Three (3) or by arrangement

**Semester:** All

**Days and times of lectures**: By arrangement

**Instructor:** Per faculty approval/acceptance

**Course Coordinator:** Dr. Chloe Hawkings

**Phone: (**848) 932-0005 **Email:** c.hawkings@rutgers.edu

**Course Overview**: Research Problems in Entomology is a project-based faculty supervised research course. This course aims to give students hands-on laboratory or field experience that can be translated into career fields in entomology.

**Prerequisites**: Recommended for entomology majors (*minimum of 3credits*). Signed Research Agreement Form by faculty advisor before enrollment

**Course Description**

This course will provide scientific research experience through projects conducted in a laboratory or field setting/ Projects are hypothesis driven and will provide students with experience in conducting experiments and analyzing data. This course will also require the student to effectively synthesize scientific literature. This course also has a presentation component where students will be expected to articulate their research through reports or presentations to an audience and take proper safety precautions in the laboratory.

**Learning Outcomes:** The overall objective of this course is to ensure that all students are able conduct hands-on research and show practical problem-solving skills through completion of a project. Link to Entomology Undergraduate Program Goals: https://entomology.rutgers.edu/undergraduate/

1. Students should demonstrate critical thinking skills through establishing methods to test a hypothesis; analyze and interpret results and discuss findings
2. Students should demonstrate technical competency and ethical laboratory conduct
3. Students should be able to synthesize scientific literature to their experiments and effectively communicate their finding to a scientific audience

**Expectations:**
Students conducting research are expected to exercise significant independence in their work, completing research tasks with relatively little direct oversight from their research adviser. The student should dedicate the number of hours on their project consistent with the total credit hours sought for the experience. The faculty adviser may also have additional expectations for participation, including attendance at group meetings, individual meetings. The world load may vary on a weekly basis, so students are expected to keep and up to date lab books to document activities.
*In general,* ***1 credit hour*** *of research equals* ***4 hours conducting research in the lab****. So, a student taking 3 credits of research should be in the lab at least 12 hours a week.*

Students are required to establish a research connection with a professor prior to enrollment. Students are recommended to propose an experiment to the professor. The professor will determine specific expectations of the project and necessary time commitments. For students who require more guidance in distinguishing a research professor, please contact the program director: c.hawkings@rutgers.edu.

**Resources:**

***Textbooks:*** No text is required for this course

***Required Materials:*** Projects will require certain needs in order to perform their project tasks. Consult with their research adviser for recommendations. The student may be required to purchase a laboratory notebook, a calculator, laptop computer, transportation to field site

***Recommended Reading:*** Responsible Conduct of Research, National Science Foundation, available online at http://www.nsf.gov/bfa/dias/policy/rcr.jsp. On Being a Scientist: Responsible Conduct in Research, 2nd Edition, National Academy Press, 1995. Available at no cost at <http://www.nap.edu/readingroom/books/obas>

**Requirements for Final Grade:**The final grade will be assigned based on assessment of the learning outcomes, final research proposal report/presentation, and laboratory notebook. Registered students are required to send all materials to the faculty advisor for grading consideration and due no later than two weeks after the last class day of the semester in which the student is registered. Beware that late submissions will not be considered and while technical difficulties sometimes occur, these are the responsibility of the student and therefore, we strongly encourage students to submit the documents before the deadline to allow for troubleshooting or technical difficulties.

**Assessment** (*80%)*: Expectations for the assessment are to be established by the research adviser and student prior to the enrollment in research credit. The agreed-upon expectations will be reflected on the Research Agreement Form signed by both the student and research adviser. The minimum expectations of a research student enrolled in credit is to: i.) develop a project plan, ii.) perform experimental work or applied experimental work, iii.) write a research report/ give a presentation. Additional expectations set by the research advisor such as attendance at departmental research seminars, participation in research group meetings, lab meetings are also considered for the grade in this credit.

**Final Report/Presentation** *(20%):* The research adviser will provide clear expectations of the desired format, content, and deadlines of the final report. Each professor will have a preferred method of the final and an oral report may also be required. The faculty adviser will grade the final report.

**Attendance Policy**

Attendance is expected and if you expect to miss research hours, please use the University absence reporting website<https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. An email is automatically sent to me.

**Course Etiquette**

Participation is required for research credit, failure to participate in discussion or research will result in a zero. This course requires participation in research and practical activities, report, and through scientific presentations and questions. A strict late policy is followed in this laboratory, lateness is regarded as absence and you should treat these hours like a job. If you miss a research session you are responsible for catching up on the research tasks. Research can only be excused through university approved absences. The research advisor and mentor should be provided proof of university approval no more than one week after the missed research date. All assignments are expected to be submitted before the due date. Failure to submit an assignment before the deadline without a university approved absence will result in a zero on the assignment. No disturbances will be tolerated in laboratory settings and safety procedures must be strictly adhered to, this includes engaging in disruptive behavior and inappropriate cell phone or laptop use that is not related to the research. We strive to create a positive laboratory climate to facilitate all student learning.

**Americans with Disabilities Act (1990)**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please visit the Office of Disability Services or contact their office for further information. Please follow the procedures outlined at https://ods.rutgers.edu/students/registration-form. Full policies and procedures are at https://ods.rutgers.edu/

 **Academic Integrity**

The university's policy on Academic Integrity is available at http://academicintegrity.rutgers.edu/academicintegrity-policy. The principles of academic integrity require that a student: properly acknowledge and cite all use of the ideas, results, or words of others. You must acknowledge **all** contributors to a given piece of work. All work submitted for a course or other academic activity must be produced by the student turning in the assignment or task and is produced without the aid of impermissible materials or impermissible collaboration. All data or results must be obtained by ethical means and reported accurately without suppressing any results inconsistent with his or her interpretation or conclusions. Treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress. You are expected to uphold the canons of the ethical or professional code of the profession for which he or she is preparing. Adherence to these principles is necessary in order to ensure that everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments. all student work is fairly evaluated, and no student has an inappropriate advantage over others. The reputation of the University for integrity in its teaching, research, and scholarship will be maintained and enhanced. Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

**Student Wellness Services**

Just In Case Web App http://codu.co/cee05e

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901/ www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professionals within Rutgers Health services to

support students’ efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / https://ods.rutgers.edu/

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: https://ods.rutgers.edu/students/documentation-guidelines. If the documentation supports your request for reasonable accommodations, your campus’s disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: https://ods.rutgers.edu/students/registration-form.

Scarlet Listeners

(732) 247-5555 / https://rutgers.campuslabs.com/engage/organization/scarletlisteners

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.