

Cover Sheet: Request 11711

MCB4911: Supervised Research in Microbiology and Cell Science change from S/U to graded course

Info

Process	Course Modify Ugrad/Pro
Status	Pending at PV - University Curriculum Committee (UCC)
Submitter	Monika Oli moli@ufl.edu
Created	6/15/2017 10:23:49 AM
Updated	10/23/2017 4:17:49 PM
Description of request	Change Supervised Research in Microbiology and Cell Science from S/U to graded course

Actions

Step	Status	Group	User	Comment	Updated
Department	Approved	CALS - Microbiology and Cell Science 514910000	Monika Oli		6/15/2017
No document changes					
College	Recycled	CALS - College of Agricultural and Life Sciences	Monika Oli	Recycled per CALS CC. Please see minutes from CALS CC meeting 8/18/17.	8/31/2017
No document changes					
Department	Approved	CALS - Microbiology and Cell Science 514910000	Monika Oli		9/18/2017
No document changes					
College	Approved	CALS - College of Agricultural and Life Sciences	Monika Oli	Approved by the CALS CC on 10/13/17.	10/20/2017
Syllabus MCB 4911.docx					10/20/2017
University Curriculum Committee	Commented	PV - University Curriculum Committee (UCC)	Monika Oli	Added to November agenda	10/23/2017
No document changes					
University Curriculum Committee	Pending	PV - University Curriculum Committee (UCC)			10/23/2017
No document changes					
Statewide Course Numbering System					
No document changes					
Office of the Registrar					
No document changes					
Student Academic Support System					
No document changes					

Step	Status	Group	User	Comment	Updated
Catalog					
No document changes					
College Notified					
No document changes					

Course|Modify for request 11711

Info

Request: MCB4911: Supervised Research in Microbiology and Cell Science change from S/U to graded course

Description of request: Change Supervised Research in Microbiology and Cell Science from S/U to graded course

Submitter: Monika Oli moli@ufl.edu

Created: 6/15/2017 10:23:49 AM

Form version: 1

Responses

Current Prefix MCB

Course Level 4

Number 911

Lab Code None

Course Title Supervised Research in Microbiology and Cell Science

Effective Term Earliest Available

Effective Year Earliest Available

Requested Action Other (selecting this option opens additional form fields below)

Change Course Prefix? No

Change Course Level? No

Change Course Number? No

Change Lab Code? No

Change Course Title? No

Change Transcript Title? No

Change Credit Hours? No

Change Variable Credit? No

Change S/U Only? Yes

S/U Only Status Change from S/U Only

Change Contact Type? No

Change Rotating Topic Designation? No

Change Repeatable Credit? No

Change Course Description? No

Change Prerequisites? No

Change Co-requisites?No

RationaleOur student enrollment has dropped since Supervised Research in Microbiology and Cell Science was changed to S/U. The department decided to change the research experience to a graded course.

MCB 4911 Supervised Research in Microbiology and Cell Science

Catalog Description:

Credits: 0 to 3; can be repeated with a change in content up to 6 credits.

Firsthand, authentic research in microbiology and cell science under the supervision of a faculty member. Projects may involve inquiry, design, investigation, scholarship, discovery or application.

Credits: 0-3

One credit hour requires 3 hrs./week in the lab.

Maximum credits for MCB 4911 is 6CR total

If you previously registered for supervised research in any other department (prefix) such as BMS 4905 (11), CHM 4905 (11), ZOO 4905 (11), IDH 4905 (11), the credits earned will be included in the 6 credit maximum allowed for undergraduate research. Since Fall, 2012 the College of Medicine has required all students to register under BMS 4905 (11). Microbiology majors may do so but we recommend a maximum of 2 credits per semester and a total of 6 during the undergraduate degree. Please talk to your individual mentors in that college to verify the course they will approve you for.

Pre-requisites and Co-requisites: undergraduate research mentor permission; microbiology majors only. The contract at the end of this syllabus has to be completed, signed and submitted to the academic advisor during registration.

Students must be a Microbiology and Cell Science major and have a minimum GPA of 3.0 in order to enroll in MCB 4911. The student must complete this form in its entirety each semester of registration and obtain the appropriate signatures and then submit the form to the academic advisor in 1047 MCSB for registration. Research must be conducted in a research laboratory setting. Clinical research is inappropriate and not permitted. NOTE: Research credit hours may not be utilized for fulfillment of required Microbiology Department elective credit hours. Students may not register for this course if they are receiving any form of financial compensation for the research.

Instructor Information:

Dr. Graciela L Lorca

Office: Genetics Institute, Room 307

glorca@ufl.edu

Office hours: Day(s), time(s)

Graduate or Post-doctoral Student Research Mentor: (if applicable)

Name, Office location, Telephone number, Email address

Course Objectives: After completion of this course, the student will be able to

1. Gain hands-on experience with microbiology and molecular biology techniques in the context of a research project
2. Complete University Biosafety and Chemical safety training (as applicable to research lab/project) and take proper safety precautions in the laboratory, if relevant to the project
3. Search the literature
4. Properly keep an accurate record of research performed and document findings in a lab research notebook
5. Understand and implement the principles of experimental design (i.e. use of controls, technical and biological replicates, statistical considerations) and research ethics.
6. Perform data analysis, interpretation of experimental results, and/or bioinformatics in the context of research project.
7. Write a research report and communicate research findings to a group of scientific peers.
8. Work in a team environment, if relevant to the project and conduct herself/himself responsibly and ethically in research

The student will have fully participated in the research process with a desirable outcome of a final written report that synthesizes data collected or gathered and evaluates the hypothesis under investigation.

Textbooks/Required Materials:

There is no required text in this course. If appropriate to the project, the student may be required to purchase a laboratory notebook and is encouraged to consult with their research adviser for recommendations on the style of notebook to use. Students should also consult in advance with their research adviser on the necessity of owning a calculator, laptop computer, etc. in order to perform their project tasks.

Recommended reading includes the following or comparable works on the same topics:

- 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>.
- Avoiding Plagiarism Guide, George A. Smathers Marston Science Library, available online at <http://www.uflib.ufl.edu/msl/07b/studentplagiarism.html>.
- The Craft of Scientific Writing, 3rd Edition, by Michael Alley (1996), Springer-Verlag, NY, NY.
- The Craft of Scientific Presentations: Critical Steps to Succeed and Critical Errors to Avoid, by Michael Alley (2002), Springer-Verlag, NY, NY.

Attendance policy/lab participation:

Attendance and participation in research lab activities as agreed to between faculty mentor and student. Criteria for this part of the final letter grade (to be specified in research contract) may include things such as satisfactory completion of experiments/data analysis, participation in lab meetings, participation in lab journal clubs, scheduled meetings with faculty mentor, professionalism, etc.

Students conducting undergraduate research are expected to exercise a significant degree of autonomy in their work, completing research tasks with relatively little direct oversight from their research adviser. Nevertheless, the student should dedicate a minimum number of hours on their project that is consistent with the total credit hours sought for the experience. Besides the minimum expectations outlined in this section of this syllabus, the faculty adviser may also have additional expectations for participation, including attendance at group meetings, individual meetings, etc.

0 Credit Hours: Students can enroll in this course for 0 credit hours. This situation would be preferred by students who are approaching a maximum number of credit hours toward their degree or who are unable to cover the cost of tuition for these credits. Students registering for 0 credit hours should carefully discuss with their faculty adviser the time expectations for completion of the requirements of the class, and these expectations should be clearly articulated on the Undergraduate Research Contract.

NOTE: If the student is only enrolled in 0 credit hours of MCB 4911 in a given semester with no other courses, they will be charged for 1 credit hour of tuition and fees.

1-3 Credit Hours: Students are expected to devote a minimum of three hours per week of actual work in this class for each credit in which they are enrolled. Students can enroll in a total of 6 credit hours of this course during their undergraduate study at UF. Students should carefully discuss with their faculty adviser the time expectations for completion of the requirements of the class, and these expectations should be clearly articulated in the Undergraduate Research Contract.

NOTE:

- Fall and Spring Semesters: You can register for 0-3 credits. 1 credit = 3hrs. per week in the lab. (16 weeks total for one semester) Students may register for no more than **3 credits maximum per semester. However, we recommend a maximum of 2 credits per semester so that you can spread out your research for credit to at least 3 full semesters.**
- Summer C Semester: 1 credit – 4 hrs. per week in the lab. (12 weeks total for Summer C). Students may register for no more than 2 credits for Summer C (department policy).

- Summer A or Summer B – 1 credit = 6 hrs. per week in the lab. (6 weeks total for A and 6 weeks for B). Students may register for no more than 1 credit for Summer A or 1 credit for Summer B. If a student is planning to do undergraduate research for the entire summer, they should register for Summer C.

The policies for allowable absences and make-up work follow the university attendance policies: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Supplies:

Research supplies, including laboratory notebook and personal protective equipment, will be provided by the faculty mentor’s research program.

Research lab notebook:

All MCB4911 students are expected to document their research findings in a research lab notebook (either electronic or hard copy, as stipulated by the faculty mentor). Unless specified otherwise by the faculty mentor, all lab research notebooks will remain the property of the faculty’s research lab.

Assessment:

- 70% *Degree to which student meets expectations.* Expectations are to be established by the research adviser and student prior to the student’s enrollment in this course. The agreed-upon expectations will be reflected on the Undergraduate Research Form signed by both the student and research adviser. The following is a minimum set of expectations for every student enrolled in this class for credit: i.) develop a project plan, ii.) perform experimental work or applied experimental work, iii.) write a research report. These minimum expectations as well as additional expectations (e.g., hours spent in the lab, attendance at departmental research seminars, participation in research group meetings, etc.) are to be clearly established and articulated to the student by the research adviser prior to commencement of the research project.
- 5% *Biosafety Training.* Completion of laboratory safety training
- 10% *Lab Notebook.* Research lab notebook final grade
- 15% *Quality of the final report or presentation.* The faculty adviser will provide clear expectations of the desired format, content, and deadlines of the final report or presentation. The faculty adviser will grade the final report.

You will receive a letter grade according to the following scale:

A	90-100%
B	80-89%

C	70-79%
D	60-69%
E	<60%

For more information on grades and grading policies, please visit:

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

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

Software Use:

All faculty, staff and students 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.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,*
www.counseling.ufl.edu/cwc/
Counseling Services

Groups and Workshops
Outreach and Consultation
Self-Help Library
Training Programs
Community Provider Database

- *Career Resource Center*, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

**MCB 4911 SUPERVISED RESEARCH - UNDERGRADUATE STUDENT/MENTOR CONTRACT
DEPARTMENT OF MICROBIOLOGY AND CELL SCIENCE**

INSTRUCTIONS: Students must be a Microbiology and Cell Science major and have a minimum GPA of 3.0 in order to enroll in MCB 4911. The student must complete this form in its entirety each semester of registration and obtain the appropriate signatures and then submit the form to the academic advisor in 1047 MCSB for registration. Research must be conducted in a research laboratory setting. Clinical research is inappropriate and not permitted. NOTE: Research credit hours may not be utilized for fulfillment of required Microbiology Department elective credit hours. Students may not register for this course if they are receiving any form of financial compensation for the research. Be sure all holds are cleared and you have room on your schedule for the requested credits so that we can register you for this course.

STUDENT NAME: _____ UFID: _____

MAJOR: COLLEGE: CLAS_or CALS _____

PHONE: _____ UF EMAIL: _____

Research Instructor Name: _____ Department: _____

Instructor Telephone: _____ Instructor Email: _____

Brief Description of Research (continue on back, or attach if necessary):

What are the expectations for the student's attendance in this project (e.g., estimated hours/week in your laboratory, in seminars, group meetings, etc.)?

Student Signature: _____ **Date:** _____

I approve of the research description submitted by the student applicant. I have read the responsibilities of the research adviser and agree to undertake these responsibilities.

Faculty Adviser's/Academic Advisor Signature: _____

I have read the responsibilities of the research adviser and agree to undertake these responsibilities.

Mentor's Signature (if applicable): _____

RESPONSIBILITIES OF THE STUDENT

1. Work actively doing research and participating in other related activities for at least 3 hours each week for every credit hour enrolled in the course.
2. Keep clear accurate records of your work.
3. Understand how to conduct research in a responsible and ethical manner. Follow the UF Honor Code at all times.
4. Follow all safety protocols and ask questions about safety protocols before performing any procedure about which you are unsure.
5. Ask for assistance when you need it.
6. Keep your faculty research adviser and/or mentor informed of your results.
7. If required, learn to work on a team while also pursuing independent research on your project.
8. Write and submit a research report following the guidelines and expectations of your faculty adviser and/or mentor.
9. Strive to go beyond the minimum expectations of preparing a literature review and project plan, performing the research, and writing a final report. Seek out opportunities for oral presentations at a conference, writing and submitting a journal paper of your work, etc.

RESPONSIBILITIES OF THE FACULTY ADVISER AND STUDENT MENTOR

1. Provide support and supervision of the student (either directly or by referring her/him to someone else, e.g., graduate student or postdoctoral associate).
2. Meet regularly with the student to review her/his progress and to provide guidance in moving forward in her/his project.
3. Arrange for all safety training that is appropriate for the student to ensure her/his safety in your laboratory.
4. Help the student understand the broader context in which her/his research project fits and understand the basis for methods and procedures used.
5. Provide frequent feedback on the student's performance, accompanied by recommendations for improving performance if needed.
6. Provide feedback and establish deadlines on the student's
 - project plan, final report, other requirements as noted on the Undergraduate Research Form
7. Encourage the student to go beyond the minimum expectations of preparing a literature review and project plan, performing the research, and writing a final report.
8. Assign the student's final grade and submit it to the departmental grade coordinator.