

**1. General Information**

1a. Submitted by the College of: ARTS & SCIENCES

Date Submitted: 4/1/2015

1b. Department/Division: Biology

1c. Contact Person

Name: Ruth E Beattie

Email: rebeat1@uky.edu

Phone: 257-7647

Responsible Faculty ID (if different from Contact)

Name:

Email:

Phone:

1d. Requested Effective Date: Semester following approval

1e. Should this course be a UK Core Course? No

**2. Designation and Description of Proposed Course**

2a. Will this course also be offered through Distance Learning?: No

2b. Prefix and Number: BIO 397

2c. Full Title: Research in Microbiology

2d. Transcript Title: Research in Microbiology

2e. Cross-listing:

2f. Meeting Patterns

LABORATORY: 3-9

2g. Grading System: Letter (A, B, C, etc.)

2h. Number of credit hours: 1-3

2i. Is this course repeatable for additional credit? Yes

If Yes: Maximum number of credit hours: 12

If Yes: Will this course allow multiple registrations during the same semester? No

2j. Course Description for Bulletin: An independent research project in an area of microbiology under the direction of a faculty mentor. The research may be conducted in the Department of Biology or in other microbiological units on campus. A research contract signed by the student and the faculty research mentor must be approved by the Director of Undergraduate Studies in Microbiology.

**RECEIVED**

APR 1 2015

OFFICE OF THE  
SENATE COUNCIL

2k. Prerequisites, if any: BIO 308 and BIO 309

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Summer,

Will the course be offered every year?: Yes

If No, explain:

5. Are facilities and personnel necessary for the proposed new course available?: Yes

If No, explain:

6. What enrollment (per section per semester) may reasonably be expected?: 15

7. Anticipated Student Demand

Will this course serve students primarily within the degree program?: Yes

Will it be of interest to a significant number of students outside the degree pgm?: Yes

If Yes, explain: Biology , CAFE and Health Science majors

8. Check the category most applicable to this course: Traditional – Offered in Corresponding Departments at Universities Elsewhere,

If No, explain:

9. Course Relationship to Program(s).

a. Is this course part of a proposed new program?: Yes

If YES, name the proposed new program: Microbiology minor. Paperwork for this new program has been submitted.

b. Will this course be a new requirement for ANY program?: No

If YES, list affected programs:

10. Information to be Placed on Syllabus.

a. Is the course 400G or 500?: No

b. The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable, from **10.a** above) are attached: Yes

## Distance Learning Form

Instructor Name:

Instructor Email:

Internet/Web-based: No

Interactive Video: No

Hybrid: No

1. How does this course provide for timely and appropriate interaction between students and faculty and among students? Does the course syllabus conform to University Senate Syllabus Guidelines, specifically the Distance Learning Considerations?

2. How do you ensure that the experience for a DL student is comparable to that of a classroom-based student's experience? Aspects to explore: textbooks, course goals, assessment of student learning outcomes, etc.

3. How is the integrity of student work ensured? Please speak to aspects such as password-protected course portals, proctors for exams at interactive video sites; academic offense policy; etc.

4. Will offering this course via DL result in at least 25% or at least 50% (based on total credit hours required for completion) of a degree program being offered via any form of DL, as defined above?

If yes, which percentage, and which program(s)?

5. How are students taking the course via DL assured of equivalent access to student services, similar to that of a student taking the class in a traditional classroom setting?

6. How do course requirements ensure that students make appropriate use of learning resources?

7. Please explain specifically how access is provided to laboratories, facilities, and equipment appropriate to the course or program.

8. How are students informed of procedures for resolving technical complaints? Does the syllabus list the entities available to offer technical help with the delivery and/or receipt of the course, such as the Information Technology Customer Service Center (<http://www.uky.edu/UKIT/>)?

9. Will the course be delivered via services available through the Distance Learning Program (DLP) and the Academic Technology Group (ATL)? NO

If no, explain how student enrolled in DL courses are able to use the technology employed, as well as how students will be provided with assistance in using said technology.

10. Does the syllabus contain all the required components? NO

11. I, the instructor of record, have read and understood all of the university-level statements regarding DL.

Instructor Name:

SIGNATURE|VCASS2|Vincent Cassone|BIO 397 NEW Dept Review|20150126

SIGNATURE|ACSI222|Anna C Harmon|BIO 397 NEW College Review|20150303

SIGNATURE|JMETT2|Joanie Ett-Mims|BIO 397 NEW Undergrad Council Review|20150401

Courses	Request Tracking
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## New Course Form

<https://myuk.uky.edu/sap/bc/soap/rfc?services=>

[Open in full window to print or save](#)

Generate R

**Attachments:**

Upload File

ID	Attachment
<a href="#">Delete</a> 4424	Dutch support letter for 397.pdf
<a href="#">Delete</a> 4618	BIO 397 UGC Review Checklist.docx
<a href="#">Delete</a> 4745	BIO 397 syllabus revised.docx

Select saved project to retrieve...

(\*denotes required fields)

### 1. General Information

- a. \* Submitted by the College of:  Submission Date:
- b. \* Department/Division:
- c.
- \* Contact Person Name:  Email:  Phone:
- \* Responsible Faculty ID (if different from Contact):  Email:  Phone:
- d. \* Requested Effective Date:  Semester following approval OR  Specific Term/Year
- e.
- Should this course be a UK Core Course?  Yes  No
- If YES, check the areas that apply:
- Inquiry - Arts & Creativity       Composition & Communications - II
- Inquiry - Humanities       Quantitative Foundations
- Inquiry - Nat/Math/Phys Sci       Statistical Inferential Reasoning
- Inquiry - Social Sciences       U.S. Citizenship, Community, Diversity
- Composition & Communications - I       Global Dynamics

### 2. Designation and Description of Proposed Course.

- a. \* Will this course also be offered through Distance Learning?  Yes  No
- b. \* Prefix and Number:
- c. \* Full Title:
- d. Transcript Title (if full title is more than 40 characters):
- e. To be Cross-Listed <sup>2</sup> with (Prefix and Number):
- f. \* Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours<sup>3</sup> for each meeting pattern type.
- |                                       |  |                                     |                                     |
|---------------------------------------|--|-------------------------------------|-------------------------------------|
| <input type="checkbox"/> Lecture      | <input type="text" value="3-9"/> Laboratory <sup>1</sup> | <input type="checkbox"/> Recitation | <input type="checkbox"/> Discussion |
| <input type="checkbox"/> Indep. Study | <input type="checkbox"/> Clinical                        | <input type="checkbox"/> Colloquium | <input type="checkbox"/> Practicum  |
| <input type="checkbox"/> Research     | <input type="checkbox"/> Residency                       | <input type="checkbox"/> Seminar    | <input type="checkbox"/> Studio     |
| <input type="checkbox"/> Other        | If Other, Please explain: <input type="text"/>           |                                     |                                     |
- g. \* Identify a grading system:
- Letter (A, B, C, etc.)
- Pass/Fail
- Medicine Numeric Grade (Non-medical students will receive a letter grade)
- Graduate School Grade Scale
- h. \* Number of credits:
- i. \* Is this course repeatable for additional credit?  Yes  No
- If YES: Maximum number of credit hours:
- If YES: Will this course allow multiple registrations during the same semester?  Yes  No

## j. \* Course Description for Bulletin:

An independent research project in an area of microbiology under the direction of a faculty mentor. The research may be conducted in the Department of Biology or in other microbiological units on campus. A research contract signed by the student and the faculty research mentor must be approved by the Director of Undergraduate Studies in Microbiology.

## k. Prerequisites, if any:

BIO 308 and BIO 309

l. Supplementary teaching component, if any:  Community-Based Experience  Service Learning  Both3. \* Will this course be taught off campus?  Yes  No

If YES, enter the off campus address:

## 4. Frequency of Course Offering.

a. \* Course will be offered (check all that apply):  Fall  Spring  Summer  Winter

b. \* Will the course be offered every year?  Yes  No

If No, explain:

5. \* Are facilities and personnel necessary for the proposed new course available?  Yes  No

If No, explain:

## 6. \* What enrollment (per section per semester) may reasonably be expected? |15

## 7. Anticipated Student Demand.

a. \* Will this course serve students primarily within the degree program?  Yes  No

b. \* Will it be of interest to a significant number of students outside the degree pgm?  Yes  No

If YES, explain:

Biology, CAFE and Health Science majors

## 8. \* Check the category most applicable to this course:

Traditional -- Offered in Corresponding Departments at Universities Elsewhere

Relatively New -- Now Being Widely Established

Not Yet Found in Many (or Any) Other Universities

## 9. Course Relationship to Program(s).

a. \* Is this course part of a proposed new program?  Yes  No

If YES, name the proposed new program:

Microbiology minor. Paperwork for this new program has been submitted.

b. \* Will this course be a new requirement<sup>5</sup> for ANY program?  Yes  No

If YES<sup>5</sup>, list affected programs::

## 10. Information to be Placed on Syllabus.

a. \* Is the course 400G or 500?  Yes  No

If YES, the *differentiation for undergraduate and graduate students must be included* in the information required in 10.b. You must include: (i) identify additional assignments by the graduate students; and/or (ii) establishment of different grading criteria in the course for graduate students. (See SR

b.  \* The syllabus, including course description, student learning outcomes, and grading policies (and 400G-/500-level grading differentiation if applicable above) are attached.

<sup>1</sup> Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.

<sup>2</sup> The chair of the cross-listing department must sign off on the Signature Routing Log.

- In general, undergraduate courses are developed on the principle that one semester hour of credit represents one hour of classroom meeting per week for a semester, exclusive of any laboratory meeting. Laboratory meeting, generally, require two hours per week for a semester for one credit hour. (from SR 5.2.1)
- You must also submit the Distance Learning Form in order for the proposed course to be considered for DL delivery.
- In order to change a program, a program change form must also be submitted.

Rev 8/09

Submit as New Proposal    Save Current Changes



UNIVERSITY OF KENTUCKY

**College of Medicine**

*Rebecca Ellis Dutch, Ph.D.*

*Department of Molecular and  
Cellular Biochemistry*

*BBSRB B177*

*Lexington, KY 40536-0509*

*Tel: (859) 323-1795*

*E-mail: rdutc2@uky.edu*

Ruth,

The College of Medicine is completely supportive of the proposed cross-listing of MI 395/BIO397. This independent research course is a critical part of the proposed Microbiology minor, and we look forward to working on it with you.

Please feel free to contact me if you have any questions.

Sincerely,

A handwritten signature in cursive script that reads 'Rebecca Dutch'.

Rebecca Dutch  
Professor of Molecular and Cellular Biochemistry  
Associate Dean for Biomedical Education

**General Course Information**

- Full and accurate title of the course
- Departmental and college prefix
- Course prefix, number and section number
- Scheduled meeting day(s), time and place

**Instructor Contact Information** (if specific details are unknown, "TBA" is acceptable for one or more fields)

- Instructor name
- Contact information for teaching/graduate assistant, etc.
- Preferred method for reaching instructor
- Office phone number
- Office address
- UK email address
- Times of regularly scheduled office hours and if prior appointment is required

**Course Description**

- Reasonably detailed overview of the course (course description should match on syllabus and eCATS form)
- Prerequisites, if any (should match on syllabus and eCATS form)
- Student learning outcomes
- Course goals/objectives
- Required materials (textbook, lab materials, etc.)
- Outline of the content, which must conform to the Bulletin description
- Summary description of the components that contribute to the determination of course grade
- Tentative course schedule that clarifies topics, specifies assignment due dates, examination date(s)
- Final examination information: date, time, duration and location
- For 100-, 200-, 300-, 400-, 400G- and 500-level courses, numerical grading scale and relationship to letter grades for undergraduate students
- For 400G-, 500-, 600- and 700-level courses, numerical grading scale and relationship to letter grades for graduate students. (Graduate students cannot receive a "D" grade.)
- Relative value given to each activity in the calculation of course grades (Midterm=30%; Term Project=20%, etc.)
- Note that undergraduate students will be provided with a Midterm Evaluation (by the midterm date) of course performance based on criteria in syllabus
- Policy on academic accommodations due to disability. Standard language is below:

If you have a documented disability that requires academic accommodations, please see me as soon as possible during scheduled office hours. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address jkarnes@email.uky.edu) for coordination of campus disability services available to students with disabilities.

UGE Review ( )

eCATS form says course should be cross-listed with MI 395 (item 2.e), but course description says it's the same as MI 397

Course description on syllabus and eCATS form should match

Should include boilerplate Excused Absence policy



**Course Policies**

- Attendance
- Excused absences
- Make-up opportunities
- Verification of absences
- Submission of assignments
- Academic integrity, cheating & plagiarism
- Classroom behavior, decorum and civility
- Professional preparations
- Group work & student collaboration

<b>Committee Review (      )</b>
Comments

## SYLLABUS BIO 397 – semester XXX

### **BIO 397 - Research in Microbiology**

#### **Section: XXX**

**Instructor of Record:** Dr. Instructor

**Office:** XXXXX

**Telephone:** xxx-xxxx

**E-Mail:** instructor email

**Office Hours:** By appointment

**Class Time and Location:** To be determined with your Research Mentor

**Texts:** None required

**Course Description:** An independent research project in an area of microbiology under the direction of a faculty mentor. The research may be conducted in the Department of Biology or in other microbiological units on campus. A research contract signed by the student and the faculty research mentor must be approved by the Director of Undergraduate Studies in Microbiology. May be repeated to a maximum of 12 credits, but a maximum of only 6 credits may be used to satisfy the requirements of the minor in Microbiology.

Prereq: BIO 308 and BIO 309.

BIO 397, Independent Research in Microbiology is designed to provide students with an intensive experience in microbiological laboratory or field research. The student is expected to devote at least 3-4 hours per week for each credit hour enrolled to laboratory work, although often more time is necessary. Participants should take an active role in the design and execution of experiments and in the analysis and interpretation of data. They should be capable of "independent research" in the sense that they can conduct the experiments with little direct supervision. Students are expected to become familiar with related research in the current literature by regularly reading relevant scientific journals.

#### **Student Learning Outcomes**

- To design and conduct an original microbiological-based research project
- To learn experimental techniques in the research area
- To develop a working knowledge of relevant research literature
- To be able to discuss the research and topic with other microbiologists
- To learn the proper keeping of a laboratory notebook that clearly documents experimental procedure and the thought process leading to it
- Develop (with guidance) and conduct a research project.

**Disabilities/ Medical Conditions:** If you have a documented disability that requires academic accommodations, please see me as soon as possible. In order to receive accommodations in this course, you must provide me with a Letter of Accommodation from the Disability Resource Center (Room 2, Alumni Gym, 257-2754, email address [jkarnes@email.uky.edu](mailto:jkarnes@email.uky.edu)) for coordination of campus disability services available to students with disabilities.

#### **Reading Assignments**

Reading assignments will be assigned by your research mentor.

## **Grading:**

The grade for BIO 397 is assigned by the Research Mentor, in consultation with the Co- directors of the microbiology minor.

Grades are usually based on three aspects of a student's performance:

- (a) Fulfillment of required hours in the laboratory. Students are expected to spend on average 3-4 hours per week for each credit hour enrolled. Failure to complete the expected number of hours will reduce the grade.
  
- (b) Performance in the laboratory context. Microbiology research courses are meant to promote student creativity and initiative even in projects that are already well-defined. At a minimum, students should seek to confirm their understanding of the project through discussions and readings, and should learn how to troubleshoot basic problems.
  
- (c) Final report. The format of the final report (written or oral) will be determined by the Research Mentor.

The Research Mentor will determine the exact weighting of each of these activities in the determination of your final grade.

The grading scale is as follows:

A = 90% – 100%; B = 80% – 89%; C = 70% – 79%; D = 60% - 69%; E = <60%

Midterm grades will be posted no later than date XXX.

## **Identify a faculty mentor**

The first step to doing undergraduate research is to find a faculty mentor. Choosing the right mentor and laboratory will have a large impact on your research experience and deserves serious effort and preparation on your part. Faculty do not generally advertise undergraduate research positions and, therefore, you will have to actively seek out a mentor. You do not need to have a particular research project in mind, just the desire to do research. Your faculty mentor can be someone from the Department of Biology or someone in a microbiology sub-discipline outside the department.

To identify a potential faculty mentor we suggest talking to professors from whom you have taken classes and scanning individual faculty web pages to identify a research program in an area of particular interest to you. Ideally, you will identify several possible mentors. Contact the individual faculty member(s) in person, by phone, or by e-mail to set up an appointment to talk about the possibility of undertaking an undergraduate research project in their laboratories. Professors are generally more than willing to talk with students about their research programs. However, students should recognize that not all faculty have the space, time, or resources to mentor every interested undergraduate, and some faculty may not be able to consider you for a position in their laboratories. Therefore, it is advisable to consider multiple faculty members. Perseverance in finding a mentor will almost always be rewarded. We suggest that you start looking for a mentor one semester before you would like to begin a research project.

## **Completion of BIO 397 Contract.**

**BIO 397 Contracts can be obtained from BS 101. This contract must be completed by both student and Research mentor and returned to** the Co\_Directors of the Microbiology Minor) in room BS 101. Once the contract has been approved, the student will be informed by e-mail that he/she can now register for the course.

Excused absences from class/laboratory will be given only for absences as defined by University Senate Rules V, 2.4.2.. Documentation regarding such an absence must be presented to your mentor in advance of the absence or within one week following the absence. Make-up of missed work (for excused absences) will be scheduled on a case-by-case basis by the student's mentor.

Late assignments will only be accepted for excused absences as defined by University Senate Rules V, 2.4.2.. Late assignments MUST be turned in within one week after the student returns to campus after the excused absence otherwise an automatic score of zero will be earned for the assignment.

**Course Policy on Classroom Civility and Decorum:**

The university, college and department all have a commitment to respect the dignity of all and to value differences among members of our academic community. There exists the role of discussion and debate in academic discovery and the right of all to respectfully disagree from time-to-time. Students clearly have the right to take reasoned exception and to voice opinions contrary to those offered by the instructor and/or other students (S.R. 6.1.2). Equally, a faculty member has the right -- and the responsibility -- to ensure that all academic discourse occurs in a context characterized by respect and civility. Obviously, the accepted level of civility would not include attacks of a personal nature or statements denigrating another on the basis of race, sex, religion, sexual orientation, age, national/regional origin or other such irrelevant factors.

**\*\*\* A Note Concerning Academic Offenses (READ THIS INFORMATION CAREFULLY)**

**PLAGIARISM and CHEATING are serious academic offenses.**

The following is an excerpt taken from the "*Students Rights and Responsibilities Handbook, University of Kentucky*" regarding cheating.

*"Cheating is defined by its general usage. It includes, but is not limited to, the wrongful giving, taking, or presenting any information or material by a student with the intent of aiding himself/herself or another on any academic work which is considered in any way in the determination of the final grade."*

The following is an excerpt taken from the "*Students Rights and Responsibilities Handbook, University of Kentucky*" regarding plagiarism.

*"All academic work, written or otherwise, submitted by students to their instructors or other academic supervisors, is expected to be the result of their own thought, research, or self-expression."*

*When students submit work purporting to be their own, but which in any way borrows ideas, organization, wording or anything else from another source without appropriate acknowledgment of the fact, the students are guilty of plagiarism.*

*Plagiarism includes reproducing someone else's work..... If the words of someone else are used, the student MUST put quotation marks around the passage in question and add an appropriate indication of its origin. Making simple changes while leaving the organization, content and phraseology intact is plagiaristic."*

**Charges of an academic offense will be made against any student that cheats or commits plagiarism. Penalties for such an offense will be assessed according to University Regulations regarding Academic Offenses. The most severe penalties include suspension or dismissal from the University. I have a zero-tolerance policy regarding academic offenses.**

DUS ONLY  
 Date Received:  
 Approved/Disapproved  
 Signature:

## BIO 397 Independent Work in Microbiology (1-3 Hours)

### Research Contract

In order to receive credit for BIO397, students and their research mentors must complete a contract. *If a contract is not completed each semester by the add/drop date YOU WILL NOT BE ABLE TO REGISTER FOR THIS CLASS.* If the contract is NOT approved, we will contact you and/or your research mentor. Disapproved projects are often more appropriate for EXP 396 (Experiential Education; 257-3632). **Return completed contract to Dr. Beattie in BS101**

**Academic session in which the research will take place:**

**(Circle one)** Fall    Spring    4-week    8-week    **YEAR:** \_\_\_\_\_

**Credit Hours:** \_\_\_\_\_

Research mentors may be any research-active life sciences faculty member at the University of Kentucky. Students completing the Microbiology Minor are the primary intended BIO397 participants. Participants should be above average students making substantial progress towards a degree. Please enter grades in those courses that you have completed:

BIO 308 \_\_\_\_\_    BIO 309 \_\_\_\_\_    Current GPA \_\_\_\_\_

*Research mentors agree to provide lab space, resources (eg. chemicals), and guidance. Guidance includes safety training as well as training in scientific method, technique, and presentation. Mentors will be asked to grade the student's independent work.*

**Please provide the following information:**

Your Name	Student ID	Email	Telephone
Mentor Name	Department	Email	Telephone

Your signature: \_\_\_\_\_

Mentor's signature: \_\_\_\_\_

**This section to be filled in by the Mentor.** Please indicate what activities (and their weighting) will be used in the determination of the student's grade in the course. (ex. Attendance 25%, oral reports 25%, final paper 50%, etc). The contract will not be approved if this information is missing/incomplete.

A= 90-100; B= 80-89; C=70-79; D=60-69; F= 59 and below

**Please attach to this form a description of the proposed research work:** You must follow the indicated 3-point format. If your project is a continuation from a previous semester of BIO 397 you should provide a short description of the results of the previous semester's work and indicate that it is a continuation. **Complete this section in consultation with your mentor.**

1. State your hypothesis or driving principle.
2. Briefly describe the sorts of experiments you intend to perform, including brief technical details.
3. What might the results of these experiments be and how could these results support or refute your hypothesis?

For additional information contact: Dr. Ruth Beattie, [rebeatl@uky.edu](mailto:rebeatl@uky.edu), 257-7647.