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OFFICE OF THE
SENATE COUNCIL**1. General Information**

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

Date Submitted: 3/24/2015

1b. Department/Division: Biology

1c. Contact Person

Name: Ruth E Beattie

Email: rebeat1@uky.edu

Phone: 8592577647

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 309

2c. Full Title: Microbiology Laboratory

2d. Transcript Title: Microbiology Laboratory

2e. Cross-listing:

2f. Meeting Patterns

LABORATORY: 4

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

2h. Number of credit hours: 2

2i. Is this course repeatable for additional credit? No

If Yes: Maximum number of credit hours:

If Yes: Will this course allow multiple registrations during the same semester?

2j. Course Description for Bulletin: This course includes laboratory exercises that are designed to illustrate processes central to microbiology and to familiarize students with basic skills required for working with microorganisms in a safe environment. Students will become familiar with isolating, culturing, and identifying microorganisms, and with molecular techniques used to study and manipulate microbes.

2k. Prerequisites, if any: Prereq: BIO 148, BIO 152 and BIO 155(or equivalent courses); CHE 230; and BIO 315 or BIO 304 and previous or concurrent enrollment in Bio 308. Or consent of Instructor.

2l. Supplementary Teaching Component:

3. Will this course taught off campus? No

If YES, enter the off campus address:

4. Frequency of Course Offering: Spring,

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?: 90 - 120

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: Students in the Colleges of Agriculture, Food and Environment, Health Sciences, and Public Health may be interested in taking this course.

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 - the paperwork for this minor is in final preparation and will be submitted by 1/19/2015

b. Will this course be a new requirement for ANY program?: Yes

If YES, list affected programs: Microbiology Minor This course will also count as an upper-level elective for the BS, BA and Minor in Biology. UK currently offers an introductory level microbiology laboratory course (BIO 209). This proposed course (BIO 309) offers a more advanced rigorous microbiological laboratory experience. The proposed course has been piloted for three semesters (Sp 2014 - 3 sections - total 83 students; Fall 2014 - 3 sections - total 84 students; Spring 2015 - 4 sections - total 112 students). There is clearly high demand for a course of this level.

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 309 NEW Dept Review|20150115

SIGNATURE|ACSI222|Anna C Harmon|BIO 309 NEW College Review|20150204

SIGNATURE|JMETT2|Joanie Ett-Mims|BIO 309 NEW Undergrad Council Review|20150331

Syllabus: BIO 309 (2 credit hours)
Microbiology Laboratory

Instructor: Karla Lightfield, PhD
Office Address: 113A Thomas Hunt Morgan
Email: lightfield@uky.edu
Office Phone: 257-2269

Office hours: MWF 9-10 or by appointment

Class time and location:

Sec 001 T/TH 9.00 am-10:50am, THM 204
Sec 002 T/TH 11.00 am-12:50pm THM 204
Sec 003 T/TH 2.00 pm-3:50pm THM 204

Laboratory Teaching Assistants

Sec 001, TBD
Sec 002, TBD
Sec 003, TBD

Course Description:

This course includes laboratory exercises that are designed to illustrate processes central to microbiology and to familiarize students with basic skills required for working with microorganisms in a safe environment. Students will become familiar with isolating, culturing, and identifying microorganisms. Students will also become familiar with molecular techniques used to study and manipulate microbes. The course includes a semester long project where students will isolate an unknown bacteria from the environment and work toward identifying the bacterial species using the techniques covered in the laboratory exercises.

Prerequisites:

BIO 148, BIO 152 and BIO 155 (or equivalent courses); CHE 230; and BIO 315 or BIO 304; previous or concurrent enrollment in BIO 308; or consent of instructor

Student Learning Outcomes:

- Compare and contrast the characteristics of a variety of different microbial life forms.
- Correctly perform aseptic technique and follow protocols in the microbiology laboratory.
- Apply proper methods of microbial control, as required by laboratory protocol.
- Employ biochemical assays to differentiate organisms with distinct metabolic pathways.
- Differentiate between distinct types of microorganisms using microscopy.
- Deduce the identity of an unknown bacterial culture using the principles discussed in the laboratory
- Demonstrate an understanding of the principles of molecular biology used in microbiology including PCR, cloning and sequencing
- Demonstrate an understanding of the epidemiological principles that govern the spread of infectious agents.

Course Objectives

Biology 309 is designed to give students a skillset that is fundamental to the study of microbiology. The laboratory activities are chosen to exercise these skills as well as to promote the students' abilities to reason scientifically, learn independently, and to communicate their discoveries effectively.

Required Materials:

Cappucino and Sherman. *Microbiology: A Laboratory Manual*. 10th edition
Scientific calculator that takes logarithms and calculates exponents

Evaluation (grading)

There are a total of 400 points available in this course. They are distributed as follows:

Participation 70 points

Lab Notebook 40 points

Unknown Identification 60 points

Technical Evaluations 30 points

Lab Quizzes 100 points

Lab Practical 100 points

Participation: Participation in every laboratory activity of this course is vital to your success in this course. Therefore, if you come to lab prepared, always stay for the entire lab period, follow all safety and waste disposal protocols, clean up after yourself, are helpful and courteous to your labmates, and participate in class discussions, you can earn **70 lab participation points!**

- Participation also includes completion of each day's laboratory exercise (e.g. to receive credit, have each day's lab work checked by the instructor PRIOR to leaving lab).
- If you choose not to fully participate in lab, this portion of your points will be prorated as follows:
- Unexcused absence = loss of 10 participation points. However, you may miss up to two labs without this penalty, IF YOU LET ME KNOW AHEAD OF TIME.
- Showing up unprepared = loss of 5 participation points.
- Chronic tardiness, leaving early (before tasks are completed), leaving a mess, acting disrespectfully = loss of 5 participation points per offense
- Each tardy is subjected to a 5 point penalty. If you know in advance that you will be late you must notify your TA in advance to avoid penalty.
- Using cell-phone without stepping out of lab will result in a 5 point penalty

Unknown Identification: You will isolate an unknown microorganism to identify, using the techniques learned throughout the semester. You will keep a laboratory notebook detailing your efforts and will submit the journal and a written laboratory report

Technical Evaluations: You will be graded on your ability to isolate bacteria on an agar plate and to successfully perform a Gram stain.

Quizzes: will be developed by the TAs with input from the professor. There will be 12 ten point

quizzes throughout the semester and the lowest two grades will be dropped. Each lab exercise has a laboratory protocol associated with it, that includes a set of pre-laboratory questions. At the start of every laboratory session, a quiz will be given based on those pre-laboratory reading and the results and follow up questions from the previous lab. To prepare for the quiz, you should make sure you understand the questions from the previous lab, and read the assigned lab for the day.

Lab Quizzes are given during the first 10 minutes of lab. If you are late and the quiz is in progress, you will not be given extra time. If you arrive more than 10 minutes late to lab, you will not be permitted to take the quiz.

Lab Practical: This exam has a written and a practical component. Questions cover any background reading in lab handouts or assignments, as well as all procedures and results associated with the activities. The lab practical uses materials that cannot be kept and set out another day. Students who miss the laboratory practical exam will be required to take an incomplete grade for the course and to take the laboratory practical at the end of the following semester. It is the responsibility of the student to contact the Course Instructor for the date /time of this make-up opportunity.

Lab Notebook: Your lab notebook will be checked for completion twice throughout the semester at random checkpoints. Be sure to complete all assigned questions and record all experimental results (including controls) for full credit.

Course Grading

There will be no curving or extra credit

358-400=A

318-357=B

278-317=C

238-277=D

237 and below =E

Mid-term Grades

Mid-term grades will be posted in myUK by the deadline established in the Academic Calendar (<http://www.uky.edu/Registrar/AcademicCalendar.htm>)
The last day to drop the course is XXX

Course Policies:

Submission of Assignments:

Assignments must be submitted to your section TA on the due date. Late submissions will not be accepted without prior consultation with the professor.

Attendance Policy.

Attendance to laboratory periods is mandatory. If you know in advance that you must miss your laboratory section, whether excused or unexcused, and with the approval of the professor and the TAs, you may attend another section. Students are expected to withdraw

from the class if more than 20% of the classes scheduled for the semester are missed (excused or unexcused) per university policy.

Students need to notify the professor of absences prior to class when possible. S.R. 5.2.4.2 defines the following as acceptable reasons for excused absences: (a) serious illness, (b) illness or death of family member, (c) University-related trips, (d) major religious holidays, and (e) other circumstances found to fit "reasonable cause for non-attendance" by the professor.

Students anticipating an absence for a major religious holiday are responsible for notifying the instructor in writing of anticipated absences due to their observance of such holidays no later than the last day in the semester to add a class. Information regarding dates of major religious holidays may be obtained through the religious liaison, Mr. Jake Karnes (859-257-2754).

Students are responsible for missed work and must make arrangements to make-up work with the instructor. If you cannot contact your TA by phone or by email, then email Dr. Lightfield. Please specify your section. A missed quiz or exam may be made up only if you present a valid excuse to your TA within one week of the absence.

Disruptive classroom behavior, to include excessive talking, cell phone use, failure to clean microscopes thoroughly, etc. will be subject to penalty of **5 points per offense, beginning with the second offense, and referral to the Dean of Students, if such continues.** Cell phones are to be turned off and left in backpacks on bookshelves during class.

Academic Integrity:

Per university policy, students shall not plagiarize, cheat, or falsify or misuse academic records. Students are expected to adhere to University policy on cheating and plagiarism in all courses. The minimum penalty for a first offense is a zero on the assignment on which the offense occurred. If the offense is considered severe or the student has other academic offenses on their record, more serious penalties, up to suspension from the university may be imposed.

Plagiarism and cheating are serious breaches of academic conduct. Each student is advised to become familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities. Complete information can be found at the following website: <http://www.uky.edu/Ombud>. A plea of ignorance is not acceptable as a defense against the charge of academic dishonesty. It is important that you review this information as all ideas borrowed from others need to be properly credited.

Additional information and examples of these offenses are available online in Part II of *Student Rights and Responsibilities* (available online <http://www.uky.edu/StudentAffairs/Code/part2.html>). The minimum penalty for these academic offenses is failure of the course.

Please note: Any assignment you turn in may be submitted to an electronic database to check for plagiarism.

Accommodations due to disability:

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) for coordination of campus disability services available to students with disabilities.

Sample Schedule (based on Fall 2014)

Week	Date	Topic	Experiment
1	8/28/14	Syllabus, Safety	
2	9/2/14	Holiday	
	9/4/14	Effectiveness of handwashing Isolation of Microorganisms Unknown Assignment	Expt.1 Expt. 3
3	9/9/14	Introduction to the microscope Return Unknown Sample	Expt .5
	9/11/14	Simple Staining Subculture Unknown (choose a colony)	Expt. 8 and 9
4	9/16/14	Check Unknown purity Gram Stain Unknown	Expt. 11
	9/18/14	Gram Stain Evaluation	Expt. 11
5	9/23/14	Bacterial Quantification Temperature Requirements of growth	Expt. 20 Expt. 16
	9/25/15	Oxygen Requirements of growth	Expt. 18
6	9/30/14	Selective Media	Expt. 15
	10/2/14	Catalase Test Nitrate Reductase Test	Expt. 30 Expt. 29
7	10/7/14	Metabolic Tests	Expt. 22, 23, 27
	10/9/14	IMViC	Expt. 25

8	10/14/14	Lab Practical Review	
	10/16/14	Lab Practical	
9	10/21/14	Ames Test	Expt. 57
		Transformation	Expt. 58
	10/23/14	Ames Test	Expt. 57
		Transformation	Expt. 58
10	10/28/14	Normal Microbiota	Expt. 61, 62
		Determine final unknown tests	
	10/30/14	Staph Pathogen Identification	Expt. 63
		Strep Pathogen Identification	Expt. 64
		Final Test	
11	11/4/14	Read Results from Strep/Staph/Unknown	
		Unknown Q and A, Repeat any test	
	11/6/14	Unknown Assignment Due 10pm via EMAIL to your TA	
		Water Project Plan/Assignment	
12	11/11/14	Water	Expt. 49
	11/13/14	Water	Expt. 49
13	11/18/14	Water	Expt. 49
		Soil/Assignment	Expt. 52
	11/20/14	Water	Expt. 49
		Soil	Expt. 52A-1
14	11/25/14	Holiday	
15	12/2/14	Soil	52A-2
	12/4/14	Water report due at 10pm via EMAIL to your TA	
		Soil	52B-1
16	12/8/14	Soil	52B-2
	12/10/14	Soil	52B-3

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 ()

Course Description should match on syllabus and eCATS form

Lab Practical section - students who miss this day will receive an incomplete for the course and will have to wait until the next semester to make it up - even with excused absences?

Submission of assignments policy should be revised to allow for late submissions with an excused absence (add make-up policy for missed work with an excused absence)

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**

Committee Review ()

Comments

Courses **Request Tracking**

New Course Form

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

Generate R

Open in full window to print or save

Attachments:

Upload File

	ID	Attachment
Delete	4419	BIO 309 UGC Review Checklist.docx
Delete	4743	BIO 309 syllabus revised.docx

1

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 ¹

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 ⁴ No

b. * Prefix and Number:

c. * Full Title:

d. Transcript Title (if full title is more than 40 characters):

e. To be Cross-Listed ² with (Prefix and Number):

f. * Courses must be described by at least one of the meeting patterns below. Include number of actual contact hours³ for each meeting pattern type.

<input type="checkbox"/> Lecture	<input type="text" value="4"/> Laboratory ¹	<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:

This course includes laboratory exercises that are designed to illustrate processes central to microbiology and to familiarize students with basic skills required for working with microorganisms in a safe environment. Students will become familiar with isolating, culturing, and identifying microorganisms, and with molecular techniques used to study and manipulate microbes.

k. Prerequisites, if any:

Prereq: BIO 148, BIO 152 and BIO 155 (or equivalent courses); CHE 230; and BIO 315 or BIO 304 and previous or concurrent enrollment in Bio 308.
Or consent of Instructor.

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? 90 - 120

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:

Students in the Colleges of Agriculture, Food and Environment, Health Sciences, and Public Health may be interested in taking this course.

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 - the paperwork for this minor is in final preparation and will be submitted by 1/19/2015

b. * Will this course be a new requirement ² for ANY program? Yes No

If YES ², list affected programs:

Microbiology Minor

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.

¹ Courses are typically made effective for the semester following approval. No course will be made effective until all approvals are received.
² 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, is 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](#)