

Louisiana State University  
Biology 3116- Advanced Microbiology Laboratory  
Service-Learning & Communication Intensive course

**Instructor:** Dr. Karen Sullivan  
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**Office:** 528 Life Sciences Bldg

**Office Hours:** MW 8:00-9:00 & 1:30-2:30, TTh 8:00-9:00 & 10:30-11:30 or by appt

**Class time & location:** Mondays and Wednesdays from 9:40-12:30 in 536 Life Sciences Building

**Course Rationale:** This course integrates the study of microbiology with an emphasis on the important skills of: 1) critical thinking; 2) scientific writing; and 3) public presentation. This course seeks to provide students with an understanding of important scientific concepts, laboratory techniques, an ability to think critically, and an understanding of the importance of microbiology to society in general. This course also seeks to contribute to some of the department of Biological Sciences departmental goals such as support of science education in the community including efforts aimed at K-12 science, prepare students to pursue advanced and professional degrees successfully and/or enter the workforce with the tools to continue life-long advancement, educate voters on scientific policy, and to contribute to our ever-expanding understanding of biological processes.

**Course objectives:**

- Students will demonstrate familiarity with the essential theory and practice of microbiological manipulations such as lab safety, microscopy, aseptic technique, identification methods (staining, culturing) and quantitative techniques (pipetting, population counts)
- Students will be able to demonstrate mastery of a broad range of basic lab skills applicable to microbiology.
- Students will be able to demonstrate knowledge of the diversity of microorganisms and their similarities and differences to one another.
- Students will be able to demonstrate knowledge of various methodologies such as utilization of appropriate culture media and biochemical tests used to isolate, culture, observe and identify microorganisms.
- Students will develop skills in the areas of analytical thinking, communication and citizenry.
- Students will demonstrate the ability to communicate orally and in writing in a clear, concise manner as demonstrated through lab reports, presentations, and discussions
- Students will demonstrate the ability to function effectively on team-oriented projects.
- Students will demonstrate an understanding of the scientific method and experimental design .
- Students will be able to communicate effectively with community partner and peers by working together and resolving conflicts that benefit all involved in the process.
- Students will demonstrate professional behavior in all interactions with community partner and the community.

**Community partner:**

University Terrace Elementary School;  
<http://universityterrace.ebrschools.org/>  
Contact: Lisa Frost- [lisajfrost@gmail.com](mailto:lisajfrost@gmail.com)  
575 W. Roosevelt St.  
Baton Rouge, LA 70802  
PH 225-387-2328  
Directions to the school <http://www.mapquest.com/mq/10-dORz>

**Required**

**Materials:**

- gloves
- Lab coat (must be worn in the lab & be kept in your lab storage drawer)

**Recommended**

**Materials:**

- any general microbiology textbook
- your lab manual from Biol 2051
- Service-Learning Student Partner Handbook (CCELL) posted on Moodle

**Exams:**

There will be three 125 point exams in this course. Exam questions will mostly consist of short answer and essay type questions. Be on time for the exams. No one will be allowed to start an exam after the first person has left the classroom. Exam scores will be posted on Moodle.

**Makeup Exams:**

Makeup exams will be given only for university-approved absences and must be documented. See LSU Policy Statement 22 (<http://appl003.ocs.lsu.edu/ups.nsf/0/d45654a11f8ac79686256c250062ae4d?OpenDocument>) for details on what constitutes an approved absence. Without an excused absence, your score for that exam will be 0. You must contact me to make arrangements for a makeup exam either before the exam or within 24 hours after the exam. Makeup exams will not be the same as the regular exams. Makeup exams must be taken within 7 days of the regularly scheduled exam.

**Attendance**

**Policy:**

Students are expected to attend class on time and for the duration of the class. Attendance in lab is mandatory. You will not receive credit for lab reports if you have been tardy or absent. It is not possible to make up a missed experiment. Your final grade in the course will be lowered by one letter grade if you have more than two unexcused absences during the semester. It will be lowered by two letter grades if you have more than four unexcused absences and three letter grades if you have more than six unexcused absences. If you miss the lecture at the beginning of class, you are considered to be absent.

**There will be times when you are required to perform lab work outside of the scheduled laboratory period.**

**Exam Schedule:**

Exam 1	Sept 23 <sup>rd</sup>
Exam 2	Oct 28 <sup>th</sup>
Exam 3	Dec 2 <sup>nd</sup>

<b>Grading:</b>	3 exams worth 125 pts each	375 pts
	3 Powerpoint presentations/40 pts each	120 pts (9/21, 10/26, 11/30)
	Lab reports	130 pts (9/21, 10/26, 11/30)
	Service-learning project reports	100 pts (9/23, 10/7, 10/21, 11/4, 11/18, 12/2)
	Other (quizzes, lab notebook checks, etc)	50 pts (TBA)

You may be working in pairs for the Powerpoint presentations. You must be present in lab to contribute to the project. You will evaluate each other based on relative contributions and this can affect your grade. For example, if you didn't do your fair share you will only receive a portion of the points that your partner receives. Each student will turn in a lab report for each experiment. These will be written independently, not with a partner. Since the Powerpoints are created with a partner, you will each be required to present half of the information to the class. I will decide who presents which information so you should be prepared to discuss all of the material. See attached pages for additional information regarding the laboratory reports and presentations. You will be penalized 10% per day for late assignments.

<b>Course grading scale:</b>	A-	89.5-100%
	B-	79.5-89.4%
	C-	69.5-79.4%
	D-	59.5-69.4%
	F-	below 59.5%

You must be prepared for lab each day which means you are expected to read the experiments before you go to lab and know what you are supposed to do once you get there. If you are unprepared or disruptive, you will be asked to leave the lab.

You are required to keep a laboratory notebook which will be graded at various times during the semester. These notebook checks will be unannounced and can't be made up if you are absent. Each day that you perform lab work, your lab notebook should include the date, title of the exercise you are working on, any procedures that you perform, and any results that are obtained. This can be a spiral notebook. It is not necessary to purchase an "official" laboratory notebook.

**Academic Honesty:** You are expected to be familiar with the University's policy and procedures on academic honesty. You can find these on the Dean of Students website under "Code of Student Conduct" in section 5.1, "Academic Misconduct." Examples of academic dishonesty include, but are not limited to cheating on exams or quizzes, plagiarizing written work from any source, selling or buying academic assignments, collaborating on an assignment without the instructor's permission, and helping another student do any of these things. Students who commit violations of the academic code of conduct will be reported to the Dean of Students.

**Communication-Intensive Course:** This course is certified as a "Communication-Intensive Course" and meets all of the requirements explained on the Communication-across-the-Curriculum (CxC) Web site (<http://cxc.lsu.edu>), including the following: emphases on formal and informal assignments in written and oral communication, class time spent on communication, 40% of the final grade based

on communication projects, revisions after faculty feedback on 2 formal projects (one for each emphasis), and a student/faculty ratio of 35:1. Because it meets these requirements, students may count it toward "Distinguished Communicator" certification on LSU transcripts.

**Service-learning:** This is a service-learning course. Service-learning is defined as "a credit-bearing, educational experience in which students participate in an organized service activity that meets identified community needs and reflect on that service in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility."

The service-learning project that you will participate in this semester involves working with science students at University Terrace School on their science fair projects. You will be required to meet with your partner bi-weekly to help them develop their project idea, do the actual project, write their report, and prepare their display. You are not to do the work for your partner; you will be a consultant to help guide them through the process. Every other week, you will turn in a report discussing your consulting activities. These reports will include the progress made, problems encountered, suggesting for solving those problems, evaluation of your contributions, evaluation of your partner's contributions, and lessons you have learned. These reports should be approximately 1 page, typed and double spaced. You may include a sample of the student work when appropriate. There will be 5 reports required worth 10 points each. Once the project is complete, you will also write an overview of your service learning experience. This will be at least 3 pages, typed and double spaced worth 50 points. This overview will include information about the growth of your partner socially and academically, what you learned from the experience and how you benefitted, what your partner learned from the experience and how they benefitted, your suggestions on science education and how it should be taught as well as what you would do differently if you could start over.