

Syllabus - CELL 101-01 General Biology Spring 2008 – Tulane University

Time/Place: TR 9:30 - 10:45AM
Jones 102
On certain days Service Learning students will be asked to meet for additional sessions.

Instructor: Meenakshi Vijayaraghavan (Percival Stern Hall Room # 4006)
504-862-3154; mviji@tulane.edu
Assisted by Ms. Emily Maska and Ms. Sara Van Dam

Office hours: Wednesdays and Fridays – 9.30 – 11AM or by appointment
Wednesdays – TAs/ Percival Stern 3004
Fridays – Dr.V/ Percival Stern 4006

Course Description: This course aims to impart knowledge of the general principles of biology, chemical basis of life, general features, structures, functions and physiology of the cell, cytogenetics, and microbial genetics. It meets the science requirement for a major in cell and molecular biology.

Textbook: *Biology - Customized for Tulane University* (1st ed.) by Robert J. Brooker, Eric P. Widmaier, Linda E. Graham, and Peter D. Stiling; Published by McGraw Hill, 2007.

Course Learning Outcomes: At the completion of the semester, students are expected to have a firm foundation which enhances their understanding of the core biological theories, processes, and experimentation. They can apply this knowledge of the science to enhance their critical thinking ability to further their knowledge in the biological courses that follow.

Grading:	Home work	10%
	Three midterm exams at 15% each	45%
	Comprehensive final examination	45%
	Final grade	<hr/> 100%

Final Grade: Class attendance, participation and homework performance will be used to determine the borderline grades. **Extra credit work will not be assigned.**

Service Learning: Optional and within the 3 credits offered for the course.

Attendance, Reading and Homework:

Lectures will be delivered in PowerPoint presentation format. These slides will be available through Blackboard before class. Attendance will be taken; if you miss too many classes (>3) your grade will be reduced one level (E.g. A to A-) as will be the case when you use cell phones to receive or send voice or text messages. **Disturbing the class**

by being tardy, carrying on personal conversations once lecture has started will not be tolerated. If you must leave early please avail permission and seat yourself at the back of class, so you can leave without disturbing the class. Suggested readings from Brooker are given in the class schedule. At the discretion of the instructor, homework sheets will be posted on the Blackboard for a scheduled time and the number of homework assignments completed as well as the performance in these assignments will be taken into consideration while giving the final grades. Syllabus and class schedule are posted on the Blackboard website – <http://mytulane.blackboard.com>. The tentative lecture topics and assigned textbook readings are given below.

Tentative Class Schedule – TR (9.30 - 10:45 AM)

Date	Topic	Reading
January		
15	CPS personnel, An Introduction to Biology	Chapter 1
17	Chapter 1, The Chemical Basis of Life I	Chapters 1, 2
22	Dr. Kastler, The Chemical Basis of Life I	Chapter 2
24	The Chemical Basis of Life II	Chapter 3
29	The Chemical Basis of Life II	Chapter 3
31	General Features of Cells	Chapter 4
February		
5	<i>Carnival Break</i>	
7	General Features of Cells	Chapter 4
12	EXAM - I	
14	Membrane Structure and Transport	Chapter 5
19	Membrane Structure and Transport	Chapter 5
21	Membrane Structure and Transport	Chapter 5
26	Enzymes, Metabolism and Cellular Respiration	Chapter 7
28	Enzymes, Metabolism and Cellular Respiration	Chapter 7
March		
4	Enzymes, Metabolism and Cellular Respiration	Chapter 7
6	Photosynthesis	Chapter 8
11	EXAM - II	
13	Photosynthesis, Chapter - 9	Chapters 8,9
18, 20	<i>Spring Break</i>	
25	Cell Communication and Regulation of the Cell Cycle	Chapter 9
27	Multicellularity	Chapter 10
April		
1	Eukaryotic Chromosomes, Mitosis and Meiosis	Chapter 15
3	Eukaryotic Chromosomes, Mitosis and Meiosis	Chapter 15
8	Simple Patterns of Inheritance	Chapter 16
10	Exam - III	

15	Complex Patterns of Inheritance	Chapter 17
17	Nucleic Acid Structure and DNA Replication	Chapter 11
22	Nucleic Acid Structure and DNA Replication	Chapter 11
24	Genetics of Bacteria and Viruses	Chapter 18
29	<i>Review</i>	
May		
7	Final Exam – 1- 5PM	

Missed Exam:

All exams are expected to be taken at the scheduled date and time. Score in a **missed exam** will be recorded as **zero**. **No make-up exam will be given.** The final exam must be taken at the assigned time (**7th May, 2008**). Any make up of the final exam requires a written excuse to be submitted to and approved by the **Dean**.

Tulane Honor Code:

Students are expected to adhere to the principles of the Tulane Honor Code at all times. Any violations of this code will not be tolerated.

Service Learning:

Students who select the Service Learning option will participate in a project centered on a topic in the aspects of general biology, especially related to marine and/or environmental studies, and will be selected by the student(s) in consultation with the instructor and community partner. Participants in service learning will:

- 1) Complete 20 hours of service on-site excluding travel time. The service learning project will be carried out by the students in groups of two or three. The students can suggest team partners with mutual agreement. At the end of the semester, the instructor will conduct confidential individual surveys to assess the level of qualitative and quantitative participation of the individual team members.
- 2) Students will be required to collectively keep a journal documenting all aspects of their project activities. The journal entries should be dated and describe in detail the service learning activities.
- 3) Students are further encouraged to record their self-reflections on the project goals, activities, and outcomes. The instructor will periodically go through the journal, and give the students feedback, advice, and suggestions for incorporation or modification. On certain days Service Learning students will be asked to meet for additional sessions.

Community Partner:

Lake Pontchartrain Basin Maritime Museum and Research Center, Madisonville, LA (Contact person: Dr. Jay Martin)
Louisiana Universities Marine Consortium (LUMCON) (Ms. Jennifer "Murt" Conover)

Objective of Partnership:

The community partner, Lake Pontchartrain Basin Maritime Museum and Research Center is involved in studies of the Lake Pontchartrain Basin and works with local schools and community. The service learning option will be offered as part of an ongoing Environmental Education Project funded by the U.S. Environmental Protection Agency (EPA). Titled “Playful Learning: Environmental education using underwater robots”, the project aims to educate school children (as well as the general public) on environmental issues using water quality monitoring issues. Underwater robots will be used for environmental and marine archeological monitoring of local aquatic environments such as Lake Pontchartrain and Tchefuncte River. School children will have opportunities to control the robots and collect environmental data in real-time over the Internet by using techniques of Web-based teleoperation of the robots. Further, hands-on operation of the robot and environmental data collection will be demonstrated at schools.

During Fall 2006, Tulane General Biology Students participating in optional service learning received training in Bayouside Classroom water sampling and data entry/manipulation protocols at the Louisiana Universities Marine Consortium (LUMCON; www.lumcon.edu). The current batch of service learning students will work on refining and adapting the techniques developed by the earlier group to now working with school teachers and students, in order to develop environmental education modules for school education.

Commuting to the sites is solely the responsibility of the students.

Service Learning:

Must be conducted during the school day (~7:00-8:30 am – 2:00-3:30 pm – depends on school);

Twenty-hour commitment may include:

- One - 5 hours of training in sampling, use of data, safety concerns, and working with teachers/children - this can be conducted at Tulane.
- 5, 3-hour service learning visits for collection of data and/or working with data.

Dr. Kastler will lecture to General Biology class on January 22nd, 9.30 - 10:45 AM about water sampling and its relevance to the society, to help students learn about the program and decide where they would like to participate. Students wanting to take the service learning option should commit to the service immediately after the lecture.

Grading Policy:

The grading for the service learning component will be based on the contributions of both the individual and team. It will be based on the amount of time spent on the project (20%), the project outcomes attained (35%), documentation in journal form (30%), as well as a final presentation on the project by the team members (15%).

Grading:

Home work	10%
Service Learning	30%
Three midterm examinations at 5% each	15 %
Comprehensive final examination	45%
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Final grade	100%

Service Learning Coordinator:

Ms. Mariah Harrison
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