SYLLABUS –Fall 2014—MIBO4600L Experimental Microbiology Lab

Times & Locations: Tuesday & Thursday 2:00-5:00 pm in Rm 206 BioSci; (some class periods will be held in rm 217, the Microbiology Computer Lab, or rm 201, conference rm)

Instructors:
Dr. Neidle (eneidle@uga.edu), rm 529 BioSci, 542-2852
Dr. Karls (akarls@uga.edu), rm 253 BioSci, 583-0822
TAs:
Nicole Laniohan (nlanio@uga.edu), rm 529 BioSci, 542-3411
Julie Stoudenmire (jstouden@uga.edu), rm 258 BioSci, 542-2614

Course Objectives:
The objectives of the course are: (i) introduce students to modern genetic and molecular tools used to analyze microorganisms; (ii) acquaint students with aspects of experimental design; (iii) train students in the proper method for recording scientific data; and (iv) help students develop skills in the critical analysis of data and research literature.

Course Design:
Original research will be conducted to characterize predicted LysR-type transcriptional regulators (LTTRs) in *Acinetobacter baylyi* ADP1. Students will work in groups of three or four and each group will have a different research focus. We will start the course with all groups working on the regulon of MdcR, a LTTR that controls expression of genes involved in malonate metabolism; but each group will work on the regulation of different predicted target genes for MdcR. The groups will participate in the experimental design for defining regulation of their genes; the experimental approaches may include bioinformatics, electrophoresis mobility shift assays for protein-DNA interactions, qRT-PCR to assay gene expression, 5' RACE to define transcription start sites, etc.

Preparation for this course:
Students must be familiar with microbial genetics and metabolism. It will be very useful to review bacterial replication, gene structure, transcription, translation, and regulation of transcription and metabolism. Your textbook from MIBO3500 is a good resource. There will be a couple of Introductory Microbiology textbooks on reserve at the science library under this course title, if you did not keep your textbook.

Class Schedule: Check eLC site *daily* for details of the schedule and for assignments.
Follow the normal Tuesday, Thursday schedule for lecture or lab, **except** Thanksgiving break (Nov 24-28), ***or otherwise noted on eLC*.**

Dates for Exams are: Exam 1, Tues, Sept 23, 2014; Exam 2, Tues, Oct 28, 2014; Final Exam, Tues, Dec 16, 2014, 3:30-6:30 pm.

Assignments: Check eLC site to find your assignments & deadlines
Protocols, reading assignments (journal articles, reviews, supplemental information for protocols), and worksheets will be posted on the eLC course page. *You are required to read and complete any assigned material BEFORE class; discussions will be held at the start of lab and each student must be prepared to perform the experimental protocols.*

Lab notebooks: Lab notebooks *must be up to date, including the protocols to be performed on the same day!!* Protocols must be *hand written* and reflect that you understand them or include questions to ask during the pre-lab discussion. If the protocol includes questions, answer them in the notebook BEFORE class!! See the instructions and rubric for the lab notebook on eLC.

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Group work: You will be assigned to a research group. As a research team you will work together to plan, perform, and interpret the experiments. You will provide an evaluation of your group partners at the time of each exam (3 times total). A rubric for evaluating group partners will be provided on eLC site. Each research team will provide periodic ***lab reports*** and give a ***final research presentation*** to the class (rubrics will be posted for how these assignments will be graded). The grade that is given to an individual student for a group project will be the average of the grade assigned to the project by the instructors and the evaluation grades from their team members. It is recommended that the groups study together for exams and collaborate in all aspects of their research.

Individual work: Each student is responsible for maintaining his or her own ***laboratory notebook***. Instructions for keeping a good lab notebook will be given at the beginning of the course and are on eLC. Your lab notebook is **individual work**; do not copy classmates' interpretation of results, data, etc. You should discuss results as a group but your interpretation must be in your own words. ***Worksheets*** will be assigned periodically and these are to be worked on without consulting anyone in or outside of the class, i.e. they should reflect the individual's work and knowledge base.
For all write-ups, presentations, and lab notebook, DO NOT plagiarize any material from the web, research literature, etc. You must indicate when you are quoting or paraphrasing another source and appropriately reference the source.

Grades: The total number of points that you can earn in the class is 100 points. There will be 2 in-class exams, each worth 15 points, and a cumulative final exam, worth 20 points. The laboratory notebook is worth 25 points, lab reports & final presentation are 10 points total, discussion & participation in class is 5 points, and quizzes/worksheets are 10 points. A pre-course learning assessment will be worth up to 2 bonus points, depending on the number of correct answers; 1 bonus pt for over 75% correct, and 2 bonus points for over 85% correct (*note:* at the end of the semester the bonus points are added to the final total number of points that you earned in the class).
Grade Scale: A 100-93, A- 92-90, B+ 89-87, B 86-83, B- 82-80, C+ 79-77, C 76-73, C- 72-70, D 69-60, F <60. Note: grades ending in >.5 round up to the next whole number, e.g. 92.6 rounds to 93, but 92.5 counts as 92.

Course Policy: You are allowed no unexcused absences; 10 points will be deducted from your final grade for every unexcused absence. Excused absences are only absences for which you have a University-approved excuse to miss a class (i.e. doctor's excuse that says you were too sick to attend class on the day that you missed or a University-approved activity such as competition in a UGA-sponsored event.) If you have professional school interviews, you must arrange in advance with Dr. Neidle or Dr. Karls to miss any lab classes. There are NO make-up exams/quizzes...NO exceptions. If you miss an exam/quiz due to an excused absence you will need to meet with Dr. Neidle or Dr. Karls to arrange how your missing exam/quiz grade will be handled. If you miss an exam without an approved excuse, then you will receive a grade of zero for the exam/quiz. You must use a pen to take the exams/quizzes or you cannot request a re-grade. Re-grading must be requested in writing with an explanation of the reason that re-grading is needed. You have 7 days after the exam is returned to the class to request a re-grade (turn in your request to one of the TAs).

There are no designated office hours for the Instructors or TA; you may set up appointments with the Faculty or TA by e-mail (Please do not just drop by our offices or labs!)

All academic work must meet the standards contained in "A Culture of Honesty." Students are responsible for informing themselves about those standards before performing any academic work. http://www.uga.edu/ovpi/academic_honesty/academic_honesty.htm

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.