Tentative Syllabus

BIO 410: Laboratory in Genetics & Cell Biology

Fall 2004
(3 credits)

Meets: Tuesday, 1-4:50 P.M. in Room 224 Morgan for lab
Wednesday, 1-1:50 P.M. in Room 109 Morgan for lecture

** Additional, brief visits to the lab during off-days will be required **

Objectives: This is a mid-level laboratory course to accompany the core genetics and cell biology courses for undergraduate majors in biological sciences disciplines (see prerequisites). There are two overall objectives for this course: 1) provide practical experience with selected, but broad-ranging methods in cell-level research; 2) demonstrate the application of those methods to contemporary problems in genetics and cell biology. Experiments will include a variety of organisms (bacteria, plants, animals) and a variety of techniques (spectrophotometry, genetic complementation, genetic transposition, histochemical staining, electrophoresis, cloning, restriction analysis, molecular hybridization). Work will be collaborative in groups of two-three students; responsibilities for lab procedures and for preparation of reports will be shared within each group.

Prerequisites: BIO 150-153 series, BIO 315 (may be taken concurrently), BIO 304 (may be taken concurrently), or equivalent.

Instructors: John Rawls, 316 Morgan, 257-4647, e-mail jrawls@pop.uky.edu
Doug Harrison, 300 Morgan, 257-6275, e-mail dough@uky.edu
Graduate Assistant: To be named

Administration: Grades will be based upon points received on lab reports and quizzes; for overall course grade assignment, the following scale will be used: A (90-100 pts.), B (80-89 pts.), C (70-79 pts.), D (60-69 pts.), E (below 60 pts.).

Lab reports (50%): Because students work in groups, one-half of the course grade will be based upon group performance in the lab and in preparing reports on the work accomplished. Written reports will be prepared for each of the four exercise series; a verbal report will be presented by each group to the entire class during the last week of the semester. These reports will be prepared by the working group; each group will submit a single report. (10 pts. each report)

Quizzes (50%): Beginning with the second week of the semester (January 23) and continuing through the eleventh week (April 3), a short written quiz will be administered each week, during lab. Each of these ten quizzes will consist of 3-5 short-answer questions based upon the previous week's laboratory. (5 pts. each quiz)

Attendance policy: Regular attendance and full participation are mandatory for this course. Excused absences will require advanced approval or appropriate medical/legal documentation, according to the University student handbook. Each unexcused absence will result in loss of 5 pts. from the overall grade of the student.

TENTATIVE SCHEDULE
Fall 2004

Week of		Series A (LRB)	Series B (DET)	Series C (BFC)	Series D (NRI)
Aug..	31	Orientation & Preparations	DET Lab #1 (1 h)		
Sept.	7	LRB Lab #1 (4 h)			
	14	LRB Lab #2 (2 h)	DET Lab #2 (1 h)		
	21			BFC Lab #1 (4 h)	
	28	LRB Lab #3 (3h)		BFC Lab #2 (1 h)	
Oct.	5		DET Lab #3 (2 h)	BFC Lab #3 (2 h)	
	12	LRB Lab #4 (3h)		BFC Lab #4 (1h)	NRI Lab #1 (1 h)
	19	LRB Lab#5 (2 h)			NRI Lab #2 (4 h)
	26		DET Lab #4 (2 h)		NRI Lab #3 (3 h)
Nov.	2****	LRB Lab #6 (1h)	DET Lab #5 (3 h)		
	9	INDEPENDENT PROJECTS (and examine DET results)			
	16	INDEPENDENT PROJECTS			
	23	INDEPENDENT PROJECTS			
	30	INDEPENDENT PROJECTS			
Dec.	7	ORAL REPORTS ON INDEPENDENT PROJECTS			

****** Written proposals due for November Independent Projects**

LRB: Lambda Restriction & Southern Blot Analysis (Experimental Series A)
DET: *Drosophila* Enhancer Trap (Experimental Series B)
BFC: Biochemical Fractionation of Chloroplasts (Experimental Series C)
NRI: Nitrate Reductase Induction (Experimental Series D)