BIOLOGY 324 METHODS IN MOLECULAR BIOLOGY Winter 2000

Instructors: Craig Moyer, David Leaf
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Office Hours: Moyer: M W F, 11-Noon; and by appt., BI 409
Leaf: W, 10-11:30; F, 11:30-12:30; and by appt., BI 410

Class Meetings: Lecture – TR, 9:00am-10:00am, BI 454
Laboratory (Leaf) – W, 1:00-5:00, BI 461
(Moyer) – F, 1:00-5:00, BI 461

Mandatory Texts & Information:
At the Bench: Laboratory Navigator, Baker, 1999
Photocopied Laboratory Manual
Note: Updated information & reading assignments to be posted on the class web site:
http://fire.biol.wwu.edu/cmoyer/biol324.html

Tentative Class Schedule: Revised 01/05/00

Week 1	Jan	04T	Overview and Organizational
		06R	
		Lab	No lab this week
Week 2		11T	
		13R	
		Lab	Restriction Digestion of λ DNA
Week 3		18T	
		20R	
		Lab	Transformation and Screening of Clones
Week 4		25T	Quiz #1
		27R	
		Lab	Alkaline Lysis Plasmid Miniprep
Week 5	Feb	01T	
		03R	
		Lab	Standard PCR Amplification & Theory

Week 6	Feb	08T	Quiz #2
		10R	
		Lab	Genomic DNA Isolation and PCR of Specific Gene Fragments
Week 7		15T	
		17R	
		Lab	Clone Gene Fragment via Ligation, Transformation
Week 8		22T	Quiz #3
		24R	
		Lab	Clone Screening and Preparation for Sequencing Reactions
Week 9		29T	
	Mar	02R	
		Lab	DNA Sequence Analysis with GenBank and RDP Databases Exercises in Searching with BLAST, etc.
Week 10		07T	
		09R	
		Lab	PCR Primer Design Workshop

Course Expectations:

You will be expected to keep a well organized and clearly written laboratory notebook. This primary concept you should concern yourself with is that with your notebook you or another equally competent scientist could come back and replicate your experiment at a later date. This will be especially important when (not if, but when) your experiment does not work out right as trouble-shooting is made much easier. See class introduction for further details regarding notebook and grading.

Course Objectives:

The primary goal of this course is the exposure to modern molecular biological techniques as tools for inquiry-based experimentation in a working laboratory setting. You will have to think-on-your-feet as well as effectively prepare ahead of time to undertake several different experiments. The outcome will be to provide you with the tools necessary to perform your own independent research projects using molecular biological methods in any laboratory setting and to have gained the confidence and experience to succeed.