

Instructor- Dr. James Youngblom (Ph. D. - University of Minnesota- Dept. of Genetics and Cell Biology)

Contact Information:

Email- jyoungblom@csustan.edu

Office- N264, N161, phone: 667-3950

Office Hours- Tuesday and Wednesday 9-10 am in N124, or by appt.

Required text- *DNA Science* by Micklos and Freyer, 2nd Edition

This is predominantly a hands-on laboratory class. To succeed, you must understand each lab exercise. Read each day's lab exercise before coming to class. Read the protocol and the supplementary material before and after each lab exercise. Understand why you are performing each step in a protocol. It is critical that you know and understand the expected result for each exercise. When performing the lab exercises, split the duties evenly. Do not let one person do all of the lab work. Rotate duties so that both of you know how to perform all of the laboratory tasks. Strive for excellent results. All of these labs will generate appropriate results, if the experimental procedures are done properly.

Pay attention and ask questions during the lectures and films. Take good notes during the lectures. All films, lectures, handouts, and lab exercises can be a source for an exam question.

Attendance is expected for all labs. If you know in advance that you cannot attend all labs, please see me about taking this class another time. **Attendance is required.** (-1= late arrival; -15 for unexcused absence).

Dates to Remember-

Monday, Sept. 3- No classes, Labor Day

Wednesday Sept. 5- Last day to add a course

Wednesday Sept. 12- Enrollment Cancellation for non-payment of tuition & fees

Wednesday Sept. 19- Last day to drop a course/Census Day

Wednesday, Oct. 10- No classes, Columbus Day

Monday, Nov. 12- No classes, Veteran's Day

Thursday and Friday- Nov. 22 and 23 - No classes, Thanksgiving break

Monday Dec. 10- (last day of classes)

Tuesday, Dec, 11- No classes, Reading Day

Grading: > 90% = A-, > 80% = B-, > 70% = C-, > 60% = D-, < 60% = F

I will use +/- grading system.

Schedule

All labs listed below with a # are from DNA Science; all other labs will be from class handouts.

#1-Aug. 22- Lab #1, #2	lecture- "Lab Safety"
#2-Aug. 29- Lab #3, Electroporation	lecture- "Agarose Gels; Electroporation" <u>Assignment #1 due at beginning of class</u>
#3-Sept. 5- Lab #3	lecture- "Use of Restriction Enzymes"
#4-Sept. 12- start cDNA Analysis	lecture- "Nemertea cDNA sequencing" Lab Report due (20 pts.)
#5-Sept. 19- Plasmid mini-preps, RE digests Samples to Nevada Genomics	lecture- "DNA sequencing Technology"
#6-Sept. 26- Plasmid gels	lecture- "DNA sequencing Technology 2" Lab Report due (20 pts.)
#7-Oct. 3-, cDNA analysis, Primer design	lecture- "Making Solutions"
#8-Oct. 17- Lab #9, cDNA analysis,	MIDTERM EXAM (80 pts)
#9-Oct. 24- Lab #10	lecture- "Transforming E. coli"
#10-Oct. 31 - Lab #11,	lecture- "RNAi"
#11-Nov. 7- Lab #12, cDNA analysis	lecture- "PCR 1"
#12-Nov.14- Finish Lab 12B, PCR, alpha-actinin	lecture- "PCR 2" Lab Report due (20 pts.)
#13-Nov. 21- PCR Gel, DNA Subway	
#14-Nov. 28- DNA Subway, PCR Gel 2	lecture- "Plant Genome Annotation" Quiz #1 (20 pts.)
#15-Dec. 5- DNA Subway, clean up	Lecture- "Current Events in Biotechnology"

Final Exam: Wednesday Dec. 12 at 2:00 120 pts

Total pts = 350 pts.:

Two exams = 200 pts.

Three lab reports = 60 pts.

Assignments #1 = 10 pts.

Quiz #1 = 20 pts.

DNA subway results = 15 pts.

cDNA report = 45 pts.

Both **exams** will be a mixture of different types of questions (including solving problems and short essay). The final exam is comprehensive. The exams cover readings, lectures, films, and lab exercises. No leaving the classroom during exams.

The **lab reports** are designed to assist students in reviewing materials and getting the most of out of this class. These lab reports are to be completed individually not as a team or a group.

Assignments #1 - see the document titled rDNA debate on Blackboard. The assignment is clearly spelled out on the last page.

Quiz #1- The quiz is based on a journal article from the June 29, 2012 issue of Science. This is a test of your ability to read and understand a primary journal article related to molecular genetics. A PDF of the article is available on Blackboard. In addition, there is a short analysis of the article on Blackboard (Science Article Supplement) that will provide additional information and help you understand the article. Also on Blackboard are the supplemental materials (extra figures and tables). You should look at both publications and the supplemental materials but are only quizzed on the article (p. 1704-1707) and the four figures in the article.

Lab Book- The lab books are a documentation of all your work related to the *Nemertean* cDNA sequencing project. Documentation should begin on Sept. 12 and continue until the work is completed. Each pair of students submits one lab book together. The members of a pair will receive the same grade on the lab book, unless one member of a pair is absent between Sept. 12 and Nov. 7. For any absence, 3 pts. are subtracted from the absent student, 2 pts. are added to their partner.

Make-up- If you know you can not be in class on the day of an exam, please see me beforehand so we can discuss your situation. In some circumstances, I will allow a make-up exam. If something comes up unexpectedly on the day of an exam, please call me. If you a leave a message, leave a phone number and I will contact you to discuss your situation. Don't 'let it ride' and plan on discussing it with me later. If your situation warrants a make-up exam, then schedule your make-up exam ASAP. If I don't hear from you soon enough, you will get a 0.

Cheating- Students caught cheating are automatically awarded an F. They are no longer allowed in class and a report is filed with the Dean of Student Affairs. All electronic devices (including phones) & headphones must be kept in purses or backpacks during the exams and quizzes. No exceptions. You can use a real calculator and not the calculator function on a cell phone or PDA.

Taping Policy- Audiotaping of classes is permitted only with prior permission of the instructor; videotaping is not permitted under any circumstances. Authorized tapes are for the personal use of the student, and may not be distributed to others without the permission of the instructor.

Guest Policy- Guests are not permitted in this class due to the present of hazardous chemicals.