

BIOLOGY LABORATORY FOR HEALTH OCCUPATIONS MAJORS
BIOLOGY 124L (1 credit)
Spring, 2005

Sec. 303: Tuesdays 11 AM - 1:59 PM, WS 218

Sec. 190: Fridays, 7:30 – 10:29 AM, L113

Sec. 191: Fridays, 11 AM – 1:59 PM, L113

Instructor:

J. Mark Danley, M.S.

Main: L-Building 109; WS: Room 201, Cubicle C-21

E-mail: mdanley@tvi.edu

Main: (505) 224-3562; WS: 224-5363 (leave voice mail at 3562)

Office Hours: **Main: Monday, Wednesday 10:30 – 12:00**

WS: Tuesday, Thursday 2 - 3:30 PM

Instructor Website: <http://w3.tvi.edu/~mdanley/>

Biology Home Page: <http://planet.tvi.edu/artsci/biology/index.htm>

*It is best to contact me (1) immediately **after** class, (2) through my e-mail address or (3) by phone. Remember, I am also available by appointment--just ask me; I don't bite.*

Course Description.

This three-hour lab course introduces technique and critical thinking skills to students preparing to enter the fields of nursing, respiratory therapy, pharmacy or physician's assistance. Lab exercises cover metrics, scientific method, cell biology and genetics.

Textbooks/Materials/Resources:

- **Lab manual:** Flies, K.C. and McNamara, M.C. 2005. Biology for Health Occupation Students, Laboratory manual, 3d ed., Hayden-McNeil Publishing, Inc.
- **Materials:** ring binder with notebook paper, colored pencils and a computer disk.
- **Web sites:** <http://w3.tvi.edu/~mdanley/>; <http://w3.tvi.edu/~kflies/kat-homepage.htm>, <http://passport.tvi.edu/>

Please, bring all of the above materials to lab each week. If you attend lecture (BIO123), it will be very helpful for you to bring your lecture book as well.

Course Objectives:

Upon completion of this course, you will be able to:

- Use a microscope
- Use the internet
- Perform calculations using the metric system
- Demonstrate knowledge of cell structure by identifying parts of a cell viewed under a microscope
- Perform biochemical tests to identify major biological molecules
- Apply theory of biophysical and membrane transport to cellular functions
- Perform enzyme assays and determine optimal conditions for activity
- Design experiments and interpret the results of cellular respiration (if time allows)
- Contrast and compare mitosis and meiosis
- Set up and solve monohybrid and dihybrid crosses
- Construct and interpret a pedigree chart
- Determine modes of inheritance, e.g. Sex linked, epistasis, etc...
- Determine the structure of DNA
- Perform simple molecular biology techniques.

Course Requirements:

Attendance: According to TVI regulations, students enrolled for credit or audit are expected to attend all class sessions. Students who miss the equivalent of six hours of class time may be dropped by the instructor. Students must keep in mind, however, that it is ultimately their responsibility to withdraw from the course. The last day to drop or change the grade option for this course is **Friday, April 1, 2005**. Absences from lecture do not relieve students of the responsibility for missed assignments and materials covered in class.

Final Evaluation: It is an Arts and Sciences' policy that all courses require final evaluations. Every student must take the final exam as scheduled.

Grading: Grading will be based on:

1. In-class assignments:

- **Quizzes:** You will have 3 quizzes that total 50 points. They will consist of problem-solving, calculations and recall of information.
- **Examinations:** You will have two exams worth 50 points each. The first exam will be given at midterm and will cover materials discussed in class up through the week before the exam. The final exam will be given during the final week of classes. It will mostly encompass the material covered since the midterm, but will also have a comprehensive component. Both exams will have practical applications involving instrumentation as well as data interpretation, calculation and critical thinking.

2. Out-of-class assignments

- **Homework:** You will have homework assignments consisting of completion of pre-lab and post-lab questions in your laboratory manual.

3. Other Requirements:

- Students are responsible for all materials covered in class and in the reading assignments. Some book material that is not covered in class may still appear on examinations.
- Students are expected to do their readings before class.
- Students may be expected to seek out information on web sites or other books to further their understanding of the material covered in class.
- Students themselves are responsible for seeking information on any assignments that may have been given out during their absence. Any handouts given in class will be available from the Passport website.
- Students will need to access e-mail and computer web sites on occasion. Computers with access to the internet and e-mail, as well as printers are available to TVI students on all campuses.

• Lab Policies:

1. Lab Safety:

According to TVI regulations, all students attending a science laboratory course must fill out and sign off on a Laboratory Safety Contract at the first class meeting. Students must agree to follow Federal Regulations of Waste Disposal, safe laboratory conduct and students are asked to submit emergency contact information as well as local hospital and physician preference. Failure to fill out, sign and return the Laboratory Safety Contract to the instructor will prohibit the student from attending lab.

Students will be penalized for lab safety violations by having one point deducted from their final point total for each violation found by the instructor.

2. Policy for attending other labs:

If a student misses a lab and wishes to attend another section's meeting time, that student must first receive permission from both instructors before doing so. Not only is it up to the students to acquaint themselves with what the policy is of their own instructor, but also of the instructor whose lab they wish to attend. This may be done via e-mail, telephone, approaching the instructor in person during office hours or by showing up a few minutes prior to the start time of the lab. **Under no circumstances should students ever assume that they may attend another instructor's lab without getting permission from that instructor. Students should be aware that all instructors have the right to deny students who are not enrolled for the lab they wish to attend.**

Grading:

	Points per assignment:	Total Points:	Percentage of overall grade:
Quizzes (3)	10, 20 and 20 pts	50 pts	25 %
Midterm Examination (1)	50 pts	50 pts	25 %
Homework (10)	5 pts each	50 pts	25 %
Final Examination	50 pts	50pts	25%
TOTAL		200 pts	100 %

Please, allow at least one week for grading your tests.

For this grade:	You need this %:	And you need at least this many points out of 200 total points:
A	90 - 100%	180-200
B	80 - 89%	160-179
C	70 - 79%	140-159
D	60 - 69%	120-139
F	< 60%	< 120

THERE WILL BE NO DEVIATION FROM THIS SCALE. THERE WILL BE NO EXTRA CREDIT WORK – PLEASE DO NOT ASK.

Academic Dishonesty:

Students should consult the TVI Student Handbook (<http://planet.tvi.cc.nm.us/handbook/> p. 49-51) for a complete explanation on Academic Dishonesty. Students who commit any form of academic dishonesty on an assignment may be assigned a grade as severe as a “0” or “F” for this assignment by the instructor, or will be informed by the instructor that the Dean of Students will be contacted to coordinate a more severe penalty for the offense (e.g. an “F” for the course, or removal from a program - in the case of limited entry programs such as exist in Health Occupations). In the latter case, a centralized record of the student’s academic dishonesty incident will be maintained within the Dean of Students Office so that, if future incidents are reported, patterns of behavior can be identified and sanctioned more severely. Sanctions that may be imposed include disenrollment from the course, suspension from campus, expulsion from the institute, and other administrative actions.

The following are some forms of cheating:

- Copying a fellow student’s work or copying a previous student’s work.
- Notes written on body parts, clothing, cheat sheets, etc... at the time of a test.
- Any form of communication with your neighbor during a test.
- Talking to anyone but the instructor or proctor during a quiz or examination.
- Communicating via cell phones with other people during a test.
- Notes or books open during in-class exams and quizzes.
- Disclosing or soliciting examination questions to those who may have been absent from an exam.
- Plagiarism (copying entirely or whole phrases from books or websites).
- Any two students handing in assignments with identical or nearly word-for-word responses.

Most of you have chosen to attend this course because you have a sincere interest in the medical and health care field. Many of you will take care of very sick or injured patients, prescribe and/or administer medications,

counsel young and old, and fill out vast quantities of paper work that requires accuracy and honesty. You will be expected to have high ethical and moral values and may have to make decisions about life and death. Because of the field that you have chosen to study, I am very strict about any form of cheating. Please, preserve your integrity and do not cheat, and also prevent any temptation of cheating. If you are caught, I will ask you to hand me your assignment, you must leave the room, and you will be assigned an F for the assignment.

Other Information:

- **Policy for Cancellation of Classes:** If there should be a cancellation of class due to inclement weather or disaster, check the local television news or radio stations or call 244-4SNO. Most cancellation information is posted by 6AM. DO NOT CONTACT THE INSTRUCTOR REGARDING CANCELLATIONS.

In the event TVI closes at the time of the final exam, final grades for students will be calculated based on all work assessed up to that point in the course.

- **Cell phones and other electronic devices:** It is a TVI Policy that “In TVI classrooms and laboratories, all cellular telephones, pagers and beepers must be turned off or switched to silent or vibrator mode. Electronic entertainment devices are to be turned off and head phones removed (APC-01-2; Effective July 1, 2001).”
- **Student Conduct:** As a member of the classroom, it is a student’s responsibility to understand, and adhere to, the TVI codes and policies that govern and prescribe acceptable student behavior. The **Student Code of Conduct** as well as other policy statements can be found in the TVI catalog in the “Student Policies and Codes” (<http://planet.tvi.cc.nm.us/catalog/0203/pdfs/TVICC02b.pdf>, pp. 21-22, and <http://planet.tvi.cc.nm.us/handbook/pdfs/TVIHbkandPlan0304.pdf>, pp. 38-51). As indicated in the Code of Conduct, if a student behaves in a manner that is disruptive to the educational process or violates any other provisions of the Code of Conduct, this behavior will (generally) first be addressed by the instructor. If the behavior continues, or escalates, it will be reported to the Dean of Students Office for appropriate disciplinary action. If a student demonstrates behavior that is in violation of the Code of Conduct, according to TVI Policy, the instructor reserves the right to require the student to leave the classroom for the remainder of that class period. Should this occur, the incident will immediately be reported to the Dean of Students Office for further disciplinary action.
- **Need Help?** Additional assistance is available from tutors at the Tutoring Center on the first floor of Jeanette Stromberg Building (Main) and on the first floor of the Westside campus (across from registration). Please see or contact them for schedules.

Course Schedule:**B124L: Introductory Biology for Health Occupations Students
SPRING, 2005**

WEEK	DATE	TOPICS	MATERIALS (Units)	ASSIGNMENTS AND TESTS*
1	Jan. 11-14	Introduction	Appendix A	
		Lab Safety	Appendix A	
		Scientific Notation	Appendix C	
		Hands on Approach to Lab Eq and Tech	1, Appendix D	
2	Jan. 18-21	Hands on Approach to Lab Eq and Tech	1, Appendix D	
3	Jan. 25-28	Hands on Approach to Lab Eq and Tech	1, Appendix D	Quiz 1 (10 points)
4	Feb. 1-4	The Compound and Dissecting Microscope	2, Appendix B	
5	Feb. 8-11	Cell Diversity	3	
6	Feb. 15-18	Transport Mechanisms Used by Cells	4: (activities #3, #4); 5: Addendum	Quiz 2 (20 points)
7	Feb. 22-25	Enzymes	5	
8	Mar. 1-4	MIDTERM	Midterm: Safety; 1, 2, 3, 4, 5; App. A, B, C, D	
9	Mar. 8-11	Review midterm		
		DNA	6	
10	Mar. 15-18	Making More Cells	7, Appendix E	
11	Mar. 22-25	Making Gametes for Reproduction	8, Appendix E	
12	Mar. 29- Apr. 1	Introductory Genetics	9	
13	Apr. 5-8	Non-Mendelian and Human Genetics, and Pedigrees	10	Quiz 3 (20 points)
14	Apr. 12-15	Non-Mendelian and Human Genetics, and Pedigrees	10	
15	Apr. 19-22		FINAL EXAM: Safety; 1, 2, 3, 6, 7, 8, 9, 10; App. A, B, C, D, E	
16		Lecture Finals; Labs do not meet this week		

Please note that the schedule **MAY** change, however, I will do my best to stay with this as it is.