BIOL 102: LABORATORY EXPERIENCES IN BIOLOGY

General Education Biology Lab for Students Who Are Not Majoring in Biology Department of Biological Sciences / Fort Hays State University

Fall Semester 2013

Syllabus subject to change during semester. Changes will be posted on the course webpage and announced in class.

Most recent update for syllabus: 6 August 2013

Lab Room: Albertson Hall (AH) 245

Lab Coordinator: Mark Eberle, AH 424 — Graduate Teaching Assistants (GTA): AH 425

Time	TUESDAY	WEDNESDAY	THURSDAY	Time
		Section A	Section B	
8:30-10:20		Mark Eberle	Brianna Watkins	8:30-10:20
		meberle@fhsu.edu	brwatkins@mail.fhsu.edu	
10:30-12:20		Section C	Section D	
		Patrice Betz	Elizabeth Bainbridge	10:30-12:20
		pmbetz@mail.fhsu.edu	egbainbridge@mail.fhsu.edu	
12:30-2:20		Section E	Section F	
		Ian Cost	Whitney Taylor	12:30-2:20
		incost@mail.fhsu.edu	wataylor@mail.fhsu.edu	
2:30-4:20		Section G	Section H	
		Elizabeth Bainbridge	Patrice Betz	2:30-4:20
		egbainbridge@mail.fhsu.edu	pmbetz@mail.fhsu.edu	
	Section I			
6:00-7:50	Mark Eberle			6:00-7:50
	meberle@fhsu.edu			

COURSE DESCRIPTION: A laboratory and field course centered on fundamental experiences in the biological sciences.

REQUISITES: pre-requisite or co-requisite: BIOL 100, BIOL 200, or BIOL 300.

OBJECTIVES OF THE COURSE: This course will equip you to 1) think analytically and synthetically about biology; 2) understand the nature of investigatory biology; 3) relate to the diversity of life on this planet; and 4) understand the organization of living organisms and systems.

COURSE CONTENT: Subjects discussed in Laboratory Experiences in Biology include the scientific method, use of microscope, basic botany, human anatomy and physiology, cellular transport systems, enzyme function, photosynthesis, cellular respiration, mitosis and meiosis, heredity, gene expression, evolution, classification and identification, the diversity of life, and ecology.

FORMAT: Student participation in lab activities.

GENERAL ACADEMIC POLICIES: This course will comply with general academic policies regarding adding or dropping courses, grade appeals, academic honesty, class attendance, and intellectual property rights as outlined in the **University Catalog**.

Graduate teaching assistants are responsible for keeping records of grades and attendance. If you have a GTA, you must contact them, **NOT** the Lab Coordinator, about questions related to these topics. To contact the graduate assistant for your lab section, you may either send an e-mail (e-mail addresses in the table above) or call 628-5887. Your call either will be answered by someone in the graduate student office or transferred to voicemail. When leaving a message, <u>first state the name of the lab instructor you are calling</u>, then identify yourself, identify your lab section, and leave your message. The voicemail system will automatically record the time and date of the call.

GENERAL GUIDELINES

This course is a general education elective that fulfills the natural science lab requirement. You must be enrolled in *Human Biology* (BIOL 100), *Humans and the Environment* (BIOL 200), or

Human Heredity (BIOL 300), or you must have taken one of these courses during an earlier semester. Because students in each lab section have different circumstances in their lecture course, the sequence of laboratory topics is independent of any lecture course; however, there will be overlap of general topics covered in the lectures and the lab. Grades for the lab and any biology lecture course you are enrolled in will be assigned separately.

Some of the lab assignments, such as those in genetics, are meant to help you understand important but often confusing subjects that are also covered in the *Human Biology* (BIOL 100) lecture. The better student-teacher ratio and longer class period in labs compared to lectures give you better access to instructors in an environment where you learn by doing. Other lab exercises, such as those covering ecology and the identification and classification of organisms, are intended to supplement the material covered in lecture classes and give you a broader exposure to the broad range of topics included within the subject heading of 'biology'. If you will take additional lab courses in biology (such as *Human Anatomy and Physiology* or *Microbiology for Allied Health*), you will learn basic lab skills, such as use of a microscope, that will help in subsequent biology lab courses. During the semester, you will also develop skills associated with working alone and working together in pairs and in small groups (often with people you did not know before the beginning of the semester), a process germane to a variety of disciplines, including biology.

LABORATORY MANUAL: To help reduce the impact of rising textbook costs, the laboratory manual is produced by the Department of Biological Sciences and University Printing Services. It is periodically modified and updated, and you have forms to complete in the book, so only new copies are available each semester. All other lab materials are provided.

EXAMINATIONS: Quizzes are given at the beginning of the lab period following completion of the lab exercise. They will include definitions, questions that require brief elaboration about a given concept, and identification of materials observed during the lab exercises. Quizzes are worth 10-15 points each. If you miss a quiz due to an excused absence, you must contact your instructor (by e-mail or phone) **before** your next lab period to arrange a make-up quiz. After that, a grade of '0' is entered for the quiz (unless you can provide a legitimate excuse for your extended absence). **It is your responsibility to contact your instructor about any missed work; it is not your instructor's responsibility to contact you.** Results from the Forensics lab are worth 15 points. It is a group project completed entirely within the class period, so it cannot be made up. If you have a legitimate excuse for your absence, your grade will be adjusted to not reflect a '0' for the grade. A written report for the Ecology lab is worth 20 points. Reports that are turned in late may have 5 points deducted.

ATTENDANCE: Mandatory. Our lab is a 'participation course', sometimes involving group activities; thus, some of these lab activities cannot be made up. If you cannot avoid missing a lab (for example, participating in a school fieldtrip or athletic event, or a medical issue), you must contact your lab instructor, preferably in advance, to arrange to attend another lab section (listed in the table on the first page) or making other arrangements. Attending another lab section does not count as an absence. You do not receive points for attending class, but attending and participating in class activities can improve your grade (described below).

GRADING SCALE: 90-100% = A; 80-89% = B; 70-79% = C; 60-69% = D; <60% = U.

A total of 200 points is possible. Attendance and participation will be considered when assigning borderline grades (up to 2% may be added to your grade for good attendance AND active participation in lab activities). For example, a student with a final score of 78% who attended lab and actively participated in lab activities can have 2% added to their score, giving them an 80%, which is a B rather than the C assigned for a final score of 78%.

SCHEDULE - Fall 2013 [subject to change during semester] (Chapter numbers 1–11 from the lab manual are in parentheses)

DATE	LAB ACTIVITIES		
August 20–22	Scientific Method, Microscopes, and Enzymes (1)		
August 27–29	Quiz 1 (15 pts) + Photosynthesis and Respiration (2)		
September 3–5	Quiz 2 (10 pts) + Division of the Cell Nucleus and Heredity (3)		
September 10–12	NO LAB – Biology Meeting		
September 17–19	Quiz 3 (15 pts) + Gene Expression: Transcription and Translation (4)		
September 24–26	Quiz 4 (10 pts) + Evolution and Population Genetics (5)		
October 1–3	Quiz 5 (10 pts) + Classification and Identification of Organisms (6)		
October 8–10	Quiz 6 (10 pts) + Diversity of Life (7)		
October 15–17	Quiz 7 (10 pts) + Plant Anatomy (8)		
October 22–24	Quiz 8 (10 pts) + Human Anatomy and Physiology (9)		
October 28–31	Quiz 9 (15 pts) + Ecology Introduction (10)		
November 5–7	Quiz 10 (10 pts) + Ecology Paper Data Collection (10 continued)		
November 12–14	Ecology Paper Due + Forensics (11): Analysis and Results (15 pts)		
November 19–21	Ecology Paper Returned (20 pts) + Review for Final		
November 26–28	NO LAB – Thanksgiving Break		
December 3-5	Comprehensive Semester Exam (50 pts)		
December 10–12	Finals Week – NO LAB		

Mark Eberle Homepage / FHSU Biology Homepage