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 2017

Syllabus subject to change during semester. Changes will be posted on the course webpage and announced in class.
Most recent update for syllabus: **15 August 2017**

Lab Room: **Albertson Hall (AH) 245**
Lab Coordinator: **Mark Eberle, AH 424 —** Instructor: **Wendy Martin, AH 118**
Graduate Teaching Assistants (GTAs): **AH 425**

Time	TUESDAY	WEDNESDAY	THURSDAY	Time
8:30–10:20		*Section B* **Mark Eberle** meberle@fhsu.edu	*Section F* **Rebekah Spainhour** r_spainhour@mail.fhsu.edu	**8:30–10:20**
10:30–12:20		*Section C* **Holly Anderson** haanderson3@mail.fhsu.edu	*Section G* **Kolin Klozenbucher** kbklozenbucher@mail.fhsu.edu	**10:30–12:20**
12:30–2:20		*Section D* **Kolin Klozenbucher** kbklozenbucher@mail.fhsu.edu	*Section H* **Rebekah Spainhour** r_spainhour@mail.fhsu.edu	**12:30–2:20**
2:30–4:20		*Section E* **Holly Anderson** haanderson3@mail.fhsu.edu	*Section I* **Oaklee Abernathy** olabernathy@mail.fhsu.edu	**2:30–4:20**
6:00–7:50	*Section A* **Mark Eberle** meberle@fhsu.edu			**6:00–7:50**

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 microscopes, enzyme function, photosynthesis, cellular respiration, mitosis and meiosis, heredity, gene expression, evolution, classification and identification, the diversity of life, basic botany, human anatomy and physiology, 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 in most lab sections. If you have a GTA, you must contact them, **NOT** the Lab Coordinator, about questions related to these topics. The graduate assistant e-mail addresses are given in the table above or you may visit with your GTA the week before you miss class because of an excused absence (school field trip, etc.). You must contact them as soon as possible, as you would if you miss time at work. Additional information about missed classes is explained below under EXAMINATIONS and ATTENDANCE.

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 courses, 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*), this biology lab will expose you to basic lab skills, such as use of a microscope, that will help in the 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 professional 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 at the two campus bookstores. 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 statements 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 in person) **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 above) or make 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 2017 [subject to change during semester]

(Chapter numbers 1–11 from the lab manual are in parentheses)

DATE	LAB ACTIVITIES
August 22–24	Scientific Method, Microscopes, and Enzymes (1)
August 29–31	Quiz 1 (15 pts) + Photosynthesis and Respiration (2)
September 5–7	Quiz 2 (10 pts) + Division of the Cell Nucleus and Heredity (3)
September 12–14	Quiz 3 (15 pts) + Gene Expression: Transcription and Translation (4)
September 19–21	Quiz 4 (10 pts) + Evolution and Population Genetics (5)
September 26–28	Quiz 5 (10 pts) + Classification and Identification of Organisms (6)
October 3–5	Quiz 6 (10 pts) + Diversity of Life (7)
October 10–12	Quiz 7 (10 pts) + Plant Anatomy (8)
October 17–19	Quiz 8 (10 pts) + Human Anatomy and Physiology (9)
October 24–26	Quiz 9 (15 pts) + Ecology Introduction (10)
October 31–November 2	Quiz 10 (10 pts) + Ecology Paper Data Collection (10 continued)
November 7–9	Ecology Paper Due + Forensics (11): Analysis and Results (15 pts)
November 14–16	Ecology Paper Returned (20 pts) + Review for Final
November 21–23	**NO LAB – Thanksgiving Break**
November 28–30	Comprehensive Semester Exam (50 pts)
December 5–7	**NO LAB – Inclement Weather Day**
December 12–14	**Finals Week – NO LAB**

Mark Eberle Homepage / **FHSU Biology Homepage**