

BIOLOGY 105

Introductory Biology Lab I

Fall 2009

Jennifer Hancock

Office: Bartlett 369 Phone: 740-376-4982 Email: jah006@marietta.edu

Office hours: Monday 3-4 PM and Friday 1-2 PM

Meeting Time: Thursday, 1:00 - 4:00

Text: *Introductory Biology Lab I Manual*

SCHEDULE OF LABORATORY EXERCISES

*** Read assigned chapters in the lab manual prior to class meeting ***

<u>Lab Day</u>	<u>Lab Manual Chapter</u>	<u>Assignments for that day*</u> (assignments are due at 1:00pm)	<u>Points</u>
August 27	The Great Walnut Chase		
September 3	Microscopy & Microorganisms	• Scientific methodology quiz	15
September 10	Open-space Behavior	• Microscopy quiz	15
September 17	Excel techniques	• Open-space quiz	15
September 24	Leaves & Pigments	• Open-space lab report	25
October 1	Vertebrate Diversity	• Leaf & Pigment quiz	15
October 8	BioFuel Production – I	• Vertebrate Diversity quiz • Leaf Pigment lab report	15 50
October 15	Break		
October 22	BioFuel Production – II	• Biofuel quiz	15
October 29	BioFuel Production – III	• Biofuel experimental plan • Biofuel lab report Intro section	10 25
November 5	BioFuel Production – IV	• Biofuel Graphs due	10
November 12	Plant Diversity		
November 19	Flowering Plants	• Biofuel lab report • Plant diversity quiz	75 15
November 26	Thanksgiving break		
December 3	Onion root tip mitosis	• Flowering plant quiz • Turn in lab results	15 10

YOUR CAMPUS E-MAIL: You are required to check your campus e-mail daily.

GRADING POLICY: Your grade will be determined on the following basis:

Lab Reports (3) 125 Points
Other grades ~150 Points
Total = ~275 Points

Your final grade will be determined as follows:

A+	97%	B+	87%	C+	77%	D+	67%	F	< 60%
A	93%	B	83%	C	73%	D	63%		
A-	90%	B-	80%	C-	70%	D-	60%		

Assignments: Failure to turn in assignments may result in a failing grade for the semester. Late assignments will be penalized 10% per day. For example, the first day starts the minute after an assignment is due and ends 24 hours later. Unless specifically indicated otherwise, written assignments are expected to be the exclusive work of individual students. Further guidelines for writing assignments will be provided during the semester and in the lab manual. I reserve the right to reject any paper that I feel egregiously fails to meet the guidelines.

All work produced in this course is considered “public” and is used for the purposes of teaching and evaluation. This likely includes the use of your work as a model for future students/courses and the submission of your work to an online plagiarism detection service.

IMPORTANT: SAVE YOUR WORK REPEATEDLY during your work sessions and also in several different places—not just on one disk or one jump drive!! Also, at the end of each work session, print out a paper copy, so that you can just retype it if all your electronic copies fail!!

All 3 lab reports must be turned in to me as a paper copy (stapled and with page numbers) by 2:00 pm on the due date and must also be submitted to www.turnitin.com by midnight on the due date. Failing to submit a lab report to [turnitin.com](http://www.turnitin.com) by the end of the due date in the syllabus will result in a 5% penalty per day. [Example: if a lab report is handed in 2 days late (-20%) and then submitted to [turnitin.com](http://www.turnitin.com) after another 2 days (-10%), a total penalty of -30% will result.]

Turnitin.com Information: Class ID: 2811619 Password: puffin

- ▶ **Failure to submit work to [turnitin.com](http://www.turnitin.com) as required results in a failing grade in the course**
- ▶ **After submitting a file, check yourself: log off and then go back in to make sure that your file is now listed as having been submitted. If not, then try again and follow the instructions *precisely*.**

Academic Dishonesty: Unless specifically indicated otherwise, written assignments are expected to be the exclusive work of individual students. As stated in the 2008-2009 MC undergraduate catalog (138), “academic dishonesty within the academic community is a very serious matter, because dishonesty destroys the basic trust necessary for a healthy education environment.” “Academic dishonesty is any treatment or representation of work as if one were fully responsible for it, when it is in fact the work of another person” and “includes cheating, plagiarism, theft, or improper manipulation of laboratory or research data or theft of services” (*Marietta College Undergraduate Programs, 2009-2010 Catalog*, p. 119).

Plagiarism includes:

- copying part or all of someone else’s paper;
- copying words from a print or electronic source without putting quotation marks around them followed by a citation of the source; direct quotes must have *both* citation *and* quotation marks; [in Biology 105, you must *paraphrase* information; never directly copy or quote sentences from sources];
- paraphrasing information without following it with a citation of the source; or
- allowing someone else to write part or all of your paper.

“A substantiated case of academic dishonesty may result in disciplinary action, including a failing grade on the project, a failing grade in the course, or expulsion from the College” (*Marietta College Undergraduate Programs, 2009-2010 Catalog*, p. 119).

ATTENDANCE POLICY: Attendance is **mandatory**. Since this course meets only once weekly, each unexcused absence will result in a 5% deduction from the final semester grade. You must *personally* notify me AT LEAST ONE WEEK in advance if you expect to miss a lab due to a field trip, athletic activity, etc. ***If your event qualifies as an approved absence, you will still be required to attend a different lab section for that week.*** The other lab sections are Monday from 2:00 – 5:00 PM, Tuesday from 1:00 – 4:00 PM, Wednesday from 2:00 – 5:00 in the same room, and Wednesday from 2:00 – 5:00 PM in Bartlett 274.

Acceptable reasons for missing a lab include the following situations:

1. **Illness.** If you are seriously ill, CALL ME ON THE PHONE BEFORE LAB. If I'm not available, leave a message on my voice mail (4982) or e-mail (jah006@marietta.edu). It is YOUR RESPONSIBILITY to notify me unless you are deathly ill, hospitalized, or otherwise seriously incapacitated. The seriousness of the illness must be confirmed by the health center.
2. **Death in the immediate family.** As above, I should be notified before class if you must leave town in such a situation.
3. **Extraordinary circumstances** not covered in 1 & 2 will be dealt with on an individual basis. You must notify me *as soon*

as the circumstances permit.

CO-CURRICULAR PROBATION

At the end of the fall semester, any student (with the exception of first year students) on academic probation will also be placed on co-curricular probation effective for the spring semester. At the end of spring semester first year students can be placed on co-curricular probation effective for the fall semester. You should refer to p. 144-145 of the Marietta College Undergraduate Programs, 2008-2009 Catalog where it says: "A student on academic probation may enroll in no more than 14 credit hours each semester. The following co-curricular restrictions will apply to a student on academic probation:

- a) They are ineligible to participate in any college athletic team or club sport;
- b) They may not hold office in any campus organization or social fraternity or sorority.
- c) They may not travel off campus to a meeting or trip with any college organization or club unless required to do so for an academic program.
- d) They may not represent the college in any on campus or off campus public events or other co-curricular activities (e.g. plays, musical performances, student newspaper) unless required to do so for an academic course.
- e) They may not register for courses that require co-curricular participation unless required by their major."

"The restrictions continue in force until the student has returned to 'good academic standing', with the exception that when a student on academic probation earns a semester grade point average of 2.0, or better, co-curricular restrictions will be removed for the following semester (MC Undergraduate Programs, 2008-2009 Catalog, 145).

ACADEMIC ALERT AND INTERVENTION PROGRAM

In the fall 2003 semester, an academic alert program was implemented and involves faculty indicating in the first two weeks any student who is not attending class or is showing early signs of academic failure to the early alert team. The goal is to identify students who are having trouble and to provide them with the necessary support and referral.

Because academic success is directly linked to establishing a pattern of attendance early in your academic career, **attendance is required in this class**. Several assignments are due early in the semester to provide early evidence of any difficulty you may be likely to have in your academic career.

WHERE DO YOU GO FOR HELP?

You are asked to make many adjustments in your transition to life at college, and the adjustment to the educational and social environment of college can be very stressful. You may at some time during this lab, or in other courses, feel overwhelmed or distraught. It is of great importance that you learn to recognize and use the support system that is available at Marietta College. Foremost is remembering that you are not alone in your anxiety; many of your classmates also are feeling the same way. The secret is not to merely commiserate about the situation, but rather to seek out those resources that can help you. I believe that you will find all of the following resources helpful.

1. **Your professor** for Biol 105. I am always willing to devote time to helping students having difficulties with the course material. Come in and see me in my office, **ROOM 369, RICKEY SCIENCE CENTER, ext 4982, email: jah006@marietta.edu**. Although I schedule "official" office hours (**Monday 3-4 PM and Friday 1-2 PM**), in general I maintain an **"open door" policy** toward consultations. Feel free to see me after lab or just drop by my office; I can almost always spare some time, but if not, we will find a time when we can meet.
2. **Help sessions**. If requested I will offer help sessions during the semester. These are excellent opportunities to obtain a new explanation, or just to review material covered previously during the semester.
3. **Your advisor**. Advisors are provided to assist you and are excellent resources for solving all sorts of problems.
4. The **Student Counseling Center** is in Andrews Hall, Room 102 (ext. 4477). The college counselors have great experience in helping students that are feeling overwhelmed with their course load or other activities. The Counselors have hours posted for Monday through Friday. You can also get help after hours by contacting a Resident Assistant or Resident Director; all RAs and RDs have various phone numbers that you can call, such as a 24-hour community crisis line (373-

8240), etc.

5. **The Campus Writing Center** is located in 217 Thomas Hall (ext. 4658). The Center is open to all students who desire to improve their writing confidence and solve writing difficulties. Any writer seeking help with the conception, research, drafting, or revising stages is welcome. On some occasions a professor may request that you seek help here. <http://www.marietta.edu/~mcwrite>
6. **The Academic Resource Center** is located in Andrews Hall, room 306 (ext. 4700). ARC offers services to help students achieve their academic potential. These services include **study skills assistance** and **tutoring** services as well as individualized support. <http://www.marietta.edu/~arc>
7. **Students with disabilities.** Students who believe they need accommodations due to a documented disability must contact me AND the academic resource center as soon as possible to discuss possible accommodations. Any eligibility for accommodations must be verified by the ARC staff.

ASSORTED KEYS TO SUCCESS IN BIOLOGY 105

- 1) **Come to class prepared: Read the lab exercise fully and highlight or underline the key points; before you come to lab, you should understand:**
 - the background and objectives,*
 - what you will do, and*
 - how you will be doing it.*
- 2) Ask lots of questions. If you have a question, most likely many other students in the class are wondering about the very same thing.
- 3) Study with a classmate; quiz yourself and each other. "Self-examination" is one of the most effective learning skills.
- 4) Seek assistance at the Writing Center if you have difficulties writing.

SKILLS OBJECTIVES

We believe that "understanding" science is essential to a person's ability to succeed in today's society. By "understanding" we mean more than just possessing knowledge about the physical and natural world. "Understanding" also implies comprehending how science is practiced, and how scientists employ certain intellectual skills in their pursuit of knowledge. Below are listed some of the skills that we feel you will need to truly understand science, and that we will be endeavoring to teach to you during this laboratory.

1. To learn how scientists think about things. The practice of science requires curiosity, intellectual honesty, skepticism, tolerance of ambiguity, and openness to new ideas.

2. To learn application of the scientific method as a tool through which observations can yield a meaningful understanding of nature, and as a tool by which problems in various spheres of human activity can be solved.

Of particular importance will be learning how to develop a testable hypothesis, make predictions based upon sound experimental technique, and draw valid conclusions from experimental results.

3. To understand the importance of critical observation, and reproducible measurements. During Biology 105 you will learn how to apply such observations to:

- a. distinguishing characteristics of a biological organism or system; eg. an examination of the structure of an organism, such as a plant, or the behaviors of animals, can reveal a great deal about the biology of those organisms.
- b. understanding hypotheses and experimental tests of those hypotheses; eg. the skill of observation will be put to use in many of your labs, including the "Great Walnut Chase" and "BioFuel Production through Yeast Fermentation" labs.
- c. drawing comparisons between different biological systems or organisms. e.g. observations of various plants will lead to an understanding of what differences are being used to classify

various organisms.

4. To integrate learning through experimentation and reading. Throughout this semester you will be called upon to build knowledge and understanding through readings, direct observation and experimentation.

5. To learn the importance of the precise vocabulary and expression in the conveyance of science information. Because scientists need to communicate information precisely and unambiguously, they often use 'technical' terms, or attach specialized meanings to everyday words. The goal of this course is not that you memorize the jargon used in technical scientific writing, but that you can understand scientific information communicated in textbooks, popular scientific magazines, and the media.

6. To develop written communication skills. Part of learning the "language" of science includes being able to communicate ideas in a concise and accurate written form. We have this objective specifically in mind when making writing assignments during the semester.

7. To understand how mathematics contributes to the understanding of the natural world. Mathematics is an essential component of scientific learning. Scientists use mathematics to manage and interpret data, to express formal relationships between ideas, and to devise mathematical models of natural systems.

8. To appreciate the role of computers in the process of science. In this course, you will apply computers to the acquisition, analysis and presentation of scientific information.

Extra credit:

Attend a presentation of a biological nature, such as the presentations of the Marietta Natural History Society (second Thursday of the month), and type a 1 1/2 to 2 page essay that summarizes the information presented *and* concludes with your reaction to the presentation. Hand in a paper **within one week of the presentation**, for a possible 5 points. Maximum of 15 total points of extra credit for the course.

Note that your extra credit essay can be handed in to only one course for credit!