BIOLOGY 105 Introductory Biology Lab I Fall 2009

Dr. Steven Spilatro
Meeting Time: Wednesday, 2:00 - 5:00, in Bartlett 274
Texts: *Introductory Biology Lab I Manual*

SCHEDULE OF LABORATORY EXERCISES

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

Lab Day	**Lab Manual Chapter**	**Quizzes and assignments for that day** (►assignments are due at 2:00 pm)	**~ Points**
August 26	The Great Walnut Chase		
September 2	Scientific methodology Open-space Behavior	Scientific methodology quiz	15
September 9	Excel techniques	Open-space quiz	15
September 16	Microscopy & Microorganisms	Microscopy quiz	15
September 23	Leaves & Pigments	Open-space lab report	25
September 30	BioFuel Production – I	Leaf & Pigment quiz	15
October 7	BioFuel Production – II	Biofuel quiz Leaf Pigment lab report	15 50
October 14	**Break**		
October 21	BioFuel Production – III	Biofuel experimental plan Biofuel lab report Intro section	10 25
October 28	BioFuel Production – IV	Biofuel Graphs due	10
November 4	Vertebrate Diversity		
November11	Onion root tip mitosis	Vertebrate Diversity quiz	15
November 18	Plant Diversity	Biofuel lab report Mitosis Quiz	75 15
November 25	**Thanksgiving break**		
December 2	Flowering Plants	Plant diversity quiz Turn in lab results	15 10

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%	

Congratulations on enrolling in a learning community!

In case you are not clear about what that means, here is quick definition. *Learning communities are classes that are linked during an academic term, often around a theme, enroll a common group of students, and where there is a conscious effort by the participants at linking the content and processes of the classes.*

BENEFITS of a Learning Community:

Students will experience:

- A greater sense of community among students and between students and their instructors
- Higher student academic achievement
- Supportive study groups
- More coordination of coursework
- The ability to see how content learned in a skills course such as COMM 101 or WRIT 101 can transfer over into other courses
- Increased student involvement and motivation
- Opportunity to make friends!

LEARNING OBJECTIVES for a Learning Community:

Students will learn how to:

- Share responsibility for discovery and learning within the classroom environment.
- Interact with each other and instructors in meaningful, functional and necessary ways within the course to accomplish learning in community rather than in isolation.
- Make connections to other related learning and life experiences beyond the course in order to decrease one's sense of curricular and personal isolation.
- Work to create an inclusive learning environment where the diverse backgrounds and experiences of learners are welcomed in such a way that they help inform the group's collective learning.

ASSIGNMENTS: Written assignments including lab reports must be turned in as a paper copy (digital copies are not acceptable) by 2:00 pm. Late assignments will be penalized 10% per day, and failure to turn in an assignment may result in a failing grade for the semester. I reserve the right to reject any paper that I feel egregiously fails to meet the guidelines. Lab reports must be submitted to TurnItIn.com before being turned in to the instructor.

Turnitin.com Information: Class ID: 2795632 Password: biol10505

Late submission to TurnItIn.com will cause a penalty of 5% per day, and failure to submit an assignment may result in a '0' for that assignment. Instructions for submitting material to TurnItIn.com are provided at the end of the lab manual and on WebCT. For example; if a lab report is handed in 2 days late (-20%) and then submitted to turnitin.com after another 2 days (-10%), a total penalty of -30% will result.

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.

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, and Tuesday and Thursday from 1:00 – 4:00 PM in the same room.

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 (4748) or e-mail (spilatrs@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*.

Academic Dishonesty: Unless specifically indicated otherwise, written assignments are expected to be the exclusive work of individual students. "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).

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.

Campus email: I will be communication to the class on a regular basis through campus e-mail addresses, and you are expected to check your campus email address on a daily basis.

EXTRA CREDIT

Certain presentations of a biological nature can be attended for a possible 5 points bonus credit. To receive the bonus points you must **submit to TurnItIn.com** a 1 page essay that summarizes the information presented and your reactions to the presentation **within one week** of the presentation. 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!

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. 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 173, RICKEY SCIENCE CENTER, ext 4748, e-mail: spilatrs@marietta.edu**. Although I schedule "official" office hours (**Monday 9-10 AM and Thursday 3-4 PM**), in general I maintain an **"open door" policy** toward, so 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.