

**BIOL 105****Introductory Biology Lab I****Fall 2006**

Dr. Peter Hogan, Dr. Almuth Tschunko, Dr. David Brown and Mrs. Tanya Jarrell  
 Meeting Time: Mondays 2:00 – 5:00; Tuesdays 1:00 – 4:00; Wednesdays 2:00 – 5:00  
 and Thursdays, 1:00 - 4:00 in Bartlett 265

**Texts:** *Introductory Biology Lab I Manual*  
*Life, 6<sup>th</sup> Edition by Lewis, Parker, Gaffin and Hoefnagels*

**SCHEDULE OF LABORATORY EXERCISES**

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

<u>Lab Week</u>	<u>Lab Manual Chapter</u>	<u>Assignments due for that day*</u> (▶ all but the in-lab assignments due at 1:00pm)
August 21	The Great Peanut Chase	
August 28	Observation, Ethograms and Wall Seeking Behavior Lab Report Guidelines	Behavior pre-lab assignment due Read pp. 127-130 of the “Guidelines for Writing Lab Reports” and complete page 137
September 4	Graphing and Description of Data exercise Lab Report Guidelines (cont.)	Read “The Scientific Approach to Problem Solving” and turn in pages 163 & 164 Finish reading the “Guidelines for Writing Lab Reports”
September 11	Schooling Behavior	<b>Procedures and figures from wall seeking behavior experiment due</b>
September 18	Campus Field Trip: Plants Introduction to Microscopes	Read pp. 97-100 of the “Microscopy & Diversity of Organisms” Lab and complete page 107; Complete page 108 in lab Turn in Field Trip in-lab assignment
September 25	Diversity in the Plant Kingdom	Turn in Field Trip post-lab assignment <b>Schooling behavior hypothesis, results, discussion and literature cited due</b> Turn in plant diversity in-lab assignment
October 2	Leaves and Pigments	Turn in leaves & pigments in-lab assignment
October 9	Four-Day Break	
October 16	BioFuel Production through Yeast Fermentation - I	
October 23	BioFuel Production - II	<b>Quiz on plant material</b>
October 30	BioFuel Production - III	
November 6	BioFuel Production through Yeast Fermentation - IV	BioFuel graphs due Group presentations during lab
November 13	Microscopy & Diversity of Microorganisms / Microbial Culturing - I	Turn in Microbial Culturing in-lab (part I) Turn in Microscopy in-lab assignment <b>BioFuel lab report due</b>
November 20	No Class - Thanksgiving Break	
November 27	Microbial Culturing - II / Fungi	Fungi pre-lab due Turn in Fungi in-lab assignment Turn in Microbial Culturing in-lab (part II)

\* NOTE: Other pre-lab and post-lab assignments may be due throughout the semester. See the individual labs for details.

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

Lab Reports (3)	170 Points
Lab Assignments	~200 Points
Quiz	<u>~25 Points</u>
Total = ~395 Points (see page 6)	

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 all 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 3 lab reports must be turned in to me as a paper copy by 1:00 pm on the due date and must also be submitted to [www.turnitin.com](http://www.turnitin.com) 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 the penalty mentioned above for late assignments. [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 (-20%), a total penalty of -40% will result.]**

Academic Dishonesty: Unless specifically indicated otherwise, written assignments are expected to be the exclusive work of individual students. As stated in the 2006-2007 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, 2006-2007 Catalog*, p. 138). Plagiarism includes copying someone else's paper, copying words from a print or electronic source without putting quotation marks around them and citing them as a source, or allowing someone else to write 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, 2006-2007 Catalog*, p. 138).

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

## ATTENDANCE POLICY

Attendance is **mandatory**. Since this course meets only once weekly, unexcused absences 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. **Not all such requests may be approved, and any approval will require that you attend a different lab section for that week.**

Acceptable reasons for missing a lab include the following situations:

1. Illness. If you are seriously ill, CALL YOUR INSTRUCTOR ON THE PHONE BEFORE LAB. If I'm not available, leave a message on my voice mail or e-mail. 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 of the Marietta College Undergraduate Programs, 2006-2007 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."

## EARLY ALERT PROGRAM

In the Fall 2003 semester, an early 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. We are always willing to devote time to helping students having difficulties with the course material. In general we maintain an "**open door**" policy toward consultations. Feel free to see your instructor after lab or just drop by his/her office. Your instructor can almost always spare some time, but if not, we will find a time when we can meet. If your instructor is not available, please leave me a message on the door or send an e-mail.

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>

Hours begin Monday, September 4<sup>TH</sup>: MTWTh 1-10pm; Sunday hours TBA

6. **A student tutor.** Many departments, including Biology and Chemistry, can arrange for an upperclass major to help students having difficulty with a particular course.

7. **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>

Regular hours begin Sunday, August 27<sup>th</sup>: MTWTh 8:30 am – 10:00 pm;

Fridays 8:30 am – 5:00 pm

Closed on Saturdays; Sun 3:00 – 10:00 pm

8. **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 BIOL 105

- 1) Come to class prepared: Read the lab exercise and understand the *objectives, what you will do and how you will be doing it*, before you come to lab.
- 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 with 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 Biol. 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 Peanut 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.

**Biology 105 Assignment Values:**

<b>Lab Assignment</b>	<b>Points</b>	Your score:
Animal Behavior Pre-Lab (p. 17)	10	
Scientific Method (pp. 163-164)	10	
Microscopy Pre-Lab (pp. 107-108)	10	
Graphs of wall seeking behavior experiments	10	
<b>Wall Seeking Behavior Procedures</b>	<b>25</b>	
Plant Diversity In-Lab	20	
<b>Schooling Lab Report (Partial)</b>	<b>45</b>	
Field Trip In-Lab	20	
Field Trip Post-Lab (pp. 49-50)	20	
Leaves & Pigments In-Lab	20	
<b>Plant Quiz</b>	<b>25</b>	
BioFuel Graphs	10	
BioFuel Group Presentations	20	
Microscopy In-Lab	20	
Microbial Culturing In-Lab (parts I & II)	20	
Fungi In-Lab	10	
<b>BioFuel Lab Report (Full)</b>	<b>100</b>	
Extra Credit	Up to 20	
<b>Total Class Points</b>	<b>395</b>	

Note: If the point value for a particular assignment changes, you will be notified by your instructor.