Rhode Island College
Biology 109: Fundamental Concepts of Biology LAB
Laboratory Syllabus and Policies Summary

Lecture Component

COURSE MATERIALS

A. Comment: Make sure you put your name and section in the books. Many textbooks seem to "disappear" just before exams, or they are left in the classroom or elsewhere accidentally. It is easier to return them if the owner is known.

B. Textbook (Required):

Campbell, N. A., Reece, J. B., Taylor, M. R., Simon, E. J., and Dickey, J. L. 2009. *Biology: Concepts and connections* (sixth edition). Pearson/Benjamin Cummings Publishing Company.

C. Lecture Outlines (Required): Available on the internet as links from the following URL: http://www.ric.edu/faculty/jmontvilo/109.htm (The outline for the lecture being given must be brought to class so that taking notes in class is easier.)

D. Laboratory Manual (Required):

<> RIC Biology Department. 2010. *Biology 109 Laboratory Manual*, Monarch butterfly edition. (Available in the bookstore. A new, unused copy must be obtained. Additional handouts will be provided as needed.)

E. Calculator (strongly recommended for lab work)

COURSE DESCRIPTION

The course description, as found in the Rhode Island College catalog, is as follows:

Unifying concepts from various levels of biological organization are considered. This course is for students pursuing studies other than the natural sciences. Lecture and laboratory. Not open to biology and clinical laboratory science majors. *(6) 4 semester hours. Gen. Ed. Category LS. Offered fall, spring, summer.*

COURSE OBJECTIVES

A. Overall Objective:

The overall objective of this course is to have you learn enough information about the science of biology to be able to apply it to your everyday lives and to your future careers. This includes being able to understand the basics of the biological workings of your own body as well as being able to evaluate, and appreciate biologically oriented topics (diseases, therapies, biotechnologies, biological and educational controversies, comic strips, and so forth) that appear in newspapers and magazines every day.

B. The specific objectives of the course include the following:

- To help you understand that biology is a human endeavor, practiced by people like you, for a variety of reasons and with a variety of techniques. It is not just an isolated discipline; it has close ties to many other disciplines, including business, literature, history, other sciences, linguistics, and others.

- To help you understand the vast numbers and types of other organisms with which we share this planet, and what we can learn from them.

- To help you understand the complexity of living processes and how life works on chemical, cellular, and organismic levels.

- To help you understand the modern underpinnings of biology, such as evolution theory, cell theory, and genetic theory, which endeavor to explain what we know of biology today and what we can know of biology in the future.

EVALUATION POLICIES AND PROCEDURES

A. Lecture Exams:

There will be three lecture examinations throughout the course. Examinations will consist primarily of short answer questions (such as multiple choice, matching columns, and true-false), but short essays may be included. Except for the first exam, each lecture exam usually will be semi-cumulative. This means that approximately 80% of each exam will cover new material, and about 20% of the exam will cover material from the previous exam.

A lecture examination will not be given to an individual earlier or later than the date scheduled. This is particularly true of final exams. Every attempt should be made to schedule appointments, travel arrangements, and other such things at times other than those during class or examination periods. Having two exams on the same day is a nuisance, but is not a valid reason for requesting a change in the date of an examination. All exam dates are listed on the calendar at the end of this syllabus.

B. Academic Honesty:

Cheating, plagiarism, stealing, or other similar acts will result in disciplinary action, including, but not restricted to, a reduction or loss of the grade. School policy requires that any acts such as these are reported to the administration for possible disciplinary action.

The purpose of testing and evaluation is to determine how much you have learned and “certify” this to others (such as potential employers) by aassigning a final course grade. To help verify the accuracy of the evealuation, and to foster fairness throughout the class, the following policiews will be in effect during all exams: you may not leave to use the restroom during the exam; you may not use cell phones during an exam; you may not wear a hat during an exam; you may not bring drinks or other such materials into the classroom; the use of calculators may be prohibited. Other policies may be put into effect if conditions warrant.

(It should be realized that these policies are in effect because, unfortunately, past experience has indicated that they may be necessary.)

C. Make-Up Examinations:

Make-up examinations will be given only under exceptional circumstances. A request for a makeup examination, stating the reason for missing the original exam, must be made in writing. The written request must be made before the first lecture period following the exam; only then will the giving of a makeup be considered. If such a request is not received within the specified time period (or if a message is not received requesting an extension of this deadline), then no makeup examination will be given. You may be asked to furnish additional proof of the reason for needing a makeup (such as a valid note from a doctor, a note from the Dean’s Office, an obituary, *etc*.).

UNDER NO CIRCUMSTANCES WILL A MAKE-UP EXAMINATION BE GIVEN AFTER GRADED EXAMS HAVE BEEN RETURNED AND STUDENTS HAVE HAD A CHANCE TO LOOK AT THE CORRECT ANSWERS.

If it is decided that a makeup examination is to be given, then that makeup examination will be worth only 85% of the original examination. (For example, if in taking a makeup examination you score a 100 out of 100 your grade will be 85. If you score 80 out of 100 your grade will be 68.) This policy is in place to be fair to those who did take the examination when scheduled by compensating for the extra study time available to the person taking the exam later than scheduled. (This policy may be modified by the instructor, depending on individual circumstances.)

D. Quizzes:

Occasional, unannounced quizzes may be given on material covered in the previous lecture(s) or on the readings. (This is to encourage you to keep up with the work and not wait until the last minute to study for an examination). There are no makeups given for missed quizzes. (This is to encourage you to come to class.)

A grade of zero will be assigned for any missed examination, quiz, or assignment. Do not expect a makeup.

E. Class Cancelation:

If classes are canceled officially by the school, such as for storms or some other emergency, and an exam is scheduled for that day, the exam will be given during the next class meeting.

According to the college: “Official College announcements regarding the cancellation of classes due to inclement weather are available, when possible, by 6 a.m. for day classes and by 2 p.m. for classes beginning at 4 p.m. and after at 456-9500. These announcements are also carried over WPRO (630 AM, 92.4 FM), WHJY (FM 940), WHJJ (920 AM), WSNE (93.3 FM), and WXIN (580 AM). The television stations that will be notified are WLNE Channel 6, WPRI Channel 12, and WJAR Channel 10. The Cancellation of Classes Policy can be found on page 39 of the Student Handbook and on page 65 of the Rhode Island College Telephone Directory.”

F. Grammar and Spelling:

Because communication of information clearly and accurately is a fundamental requirement for the sciences (or any other discipline, for that matter), the misuse of grammar and spelling will be taken into account in the grading process.

G. Course Difficulties and Disabilities:

Don’t put off coming to see me if you seem to be having difficulties with the course. The earlier we identify the problems you may be having the sooner we can correct them. Also, please let me know as early as possible in the semester if you have any physical or learning disabilities that may interfere with your academic activities in this class so that we can take the appropriate steps to deal with them.

According to the college: “Rhode Island College is committed to making reasonable efforts to assist individuals with documented disabilities. If you are seeking reasonable classroom accommodations under the American with Disabilities Act, and/or Section 504 of the Rehabilitation Act of 1973, you are required to register with the Student Life Office. The S.L.O. is located in Rm. 127 in Craig-Lee hall. Phone is 456-8061. To receive academic accommodations for this class, please obtain the proper S.L.O. Forms and meet with [the director] at the beginning of the semester.”

H. Extra Credit:

While there may be a few points of extra credit given on some assignments, in general no extra credit work will be assigned. Many students in theis course require a grade of "C" in this course to continue on in their major. The time to work for that grade is before the end of the semester. This course is not about grades but about learning the material. If you learn the material, you will get a good grade. If you are not able to do the work that is required, how can you expect to do do EXTRA work? Please do not ask for extra credit to bring up your grade, especially after the course is over. There is no extra credit work that will be given.

ATTENDANCE POLICIES

A. General Comment:

Material covered on examinations will be derived from lecture materials as well as the textbook. Attendance at each scheduled lecture is therefore necessary if a good grade is to be obtained.

B. Lecture Attendance:

Attendance at lectures is required during the first two weeks of class. (During the summer, attendance is required during the first week--usually four days--of classes.) If you do not attend all these classes you may be dropped from the course. (This is to make room for students who wish to add the class.) After the first two weeks, attendance is taken at irregular intervals throughout the semester. While attendance is not used in the calculation of the final grade, it does give an indication of the seriousness with which the class was approached.

C. Lab Attendance:

Attendance at all scheduled laboratory session is required. (See Biology Department Laboratory Attendance Policy, below.) In general, laboratory work cannot be made up because equipment is only set up for the labs for that week. (While it may be possible to attend another laboratory session during the week, this should be avoided if possible. Be sure to ask permission of the instructor before doing this.)

D. Biology Department Laboratory Attendance Policy:

“A fundamental goal of any laboratory science course is to help students gain appreciation for and familiarity with the scientific enterprise. The Rhode Island College Biology Department believes that a proper understanding of the process of science is best approached by participation in laboratory activities. Therefore, it is a departmental policy that the grade earned in laboratory will determine a significant portion of the overall course grade and that *any* missed or incomplete laboratory exercises will be reflected in this grade. Students missing more than two scheduled laboratory sessions are subject to failing the course.” (As of December 2006)

GRADING POLICIES

A. Course Grade: The final course grade (100%) will incorporate both the lecture grade (70%) and the laboratory grade (30%).

B. Lecture Grade: The lecture grade will be based on all examinations, quizzes, and any other graded assignments made. The numerical grade, converted to a number out of 70, will be computed by adding up all the points obtained throughout the course, dividing by all the points that could have been obtained, multiplying by 100, rounding the result, and multiplying by 0.70.

C. Laboratory Grade: The laboratory grade (determined by the lab instructor), converted to a number out of 30, will be added to the lecture grade (for a total grade out of 100).

D. Bonus Point and Grade Calculation: One point will be added to the total grade (to avoid the “I just missed a[n] _ by one point!” syndrome).

The numerical grade will then be converted to a letter grade using the information on the following chart:

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93 - 100 --> A
90 -  92 --> A-
87 -  89 --> B+
83 -  86 --> B
80 -  82 --> B-
77 -  79 --> C+
73 -  76 --> C
70 -  72 --> C-
67 -  69 --> D+
63 -  66 --> D
60 -  62 --> D-
 0 -  59 --> F
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E. Grade Scaling and Curving: Please be aware that grades generally are not otherwise “scaled” or “curved” to obtain a letter grade. This allows you to determine your approximate standing in the class at any time during the semester

by converting your known grade to a rounded percentage and referring to the chart above. (NOTE: At the discretion of the instructor the grades may be modified either for the whole class or for individuals.)

F. Final Grades: The final course grade will be posted on RIConnect as soon as possible ater the final examination and you can find it there.

Alternately, you may e-mail me for your grade(s) (please include your name and other identifying information, such as the course) and I will reply with your grade.

Because of privacy concerns grades are not usually given out over the telephone.

OTHER GENERAL POLICIES AND PROCEDURES

A. Study Time:

This course is about learning some biology and learning something about how biologists work. It is not about grades. However, the reality is that a grade will be assigned at the end of the course based on what you have learned.

Simply put, don't worry about the grade, worry about learning the material. If you learn the material well you will get a good grade.

In order to learn the material well you will have to put in a good deal of time. Most educators feel that you need to put in about three hours of study time for each hour of lecture. That means that in this course you should spend a minimum nine hours of time outside of class *per week* to learn the material and do well in the course.

And, this doesn't count lab time.

(Yes, *per week*. You will *learn* the material better if you do it little by little instead of trying to cram it all in for an exam. That's not learning; that's trying to pass the exam.)

If you are not prepared to spend enough time on this course because of other commitments, then you may want to consider taking this course at another time.

B. Withdrawing from the Course:

The general procedures for withdrawing from a course are given at the following URLs:

http://www.ric.edu/recordsoffice/standards.php#faq_381

http://www.ric.edu/studentlife/services.php#faq_224

Quoting from these, and other, sources, the main points are:

"(I)f you have already pre-registered for the following semester, you need to drop those courses using RIConnect. Do not assume that if you do not attend a class the professor will automatically drop you. That is not the case. If you put yourself into a class, it is YOUR responsibility to take yourself out of a class."

"Students may withdraw from a course during the first two weeks of a semester (or during a corresponding time for summer session courses) without having any entry made on the permanent record. After this time students receive a grade of W (Withdrawn)."

"Withdrawal from a course after midterm requires the approval of the instructor. Withdrawal must be based on evidence of extenuating circumstances other than academic difficulty in the course. Students who do not follow the official procedures, but stop attending classes, receive a grade based on the work completed as compared to the total course requirements."

Please let me know if you are withdrawing from the course so that my records can be updated and so there are no misunderstandings at the end of the course. In general, if you do not request, in writing, that I assign a final grade of W to you after the time period in which you can do that yourself using RIConnect then it is probable that you will receive a grade of F for the course.

C. E-Mail Addresses:

All students taking courses at Rhode Island College are assigned an e-mail address. You should be aware of this address and check it regularly. Information about your e-mail account and how to access it can be found at the following URL: http://www.ric.edu/uss/nAccounts_students.php#section01

An e-mail to the faculty received on December 22, 2009, from the Assistant Vice-President for Information Services states the following: "This fall Rhode Island College adopted a policy stating that *'RIC email accounts will be used as an official form of notification to RIC students.'* This policy was endorsed by the Council of Rhode Island College in October. Therefore, when communicating with RIC students, it is asked that faculty, staff, departments, and offices use only those email addresses officially assigned to students by the college." In accordance with this policy, therefore, e-mails sent from addresses other than @ric.edu may not get a response.

D. Biology Department Policies (as of December 2006)

On Student Evaluation of Instruction: The Biology department believes that students are able to provide valuable feedback on some important aspects of teaching performanceand that all students should have the opportunity to evaluate their instructors in every course. The departmental "Lecture Instructor Evaluation Form" is available for lecture evaluation and the "Laboratory Instructor Evaluation Form" is available for laboratory evaluation. In the event that class time is not made available for instructor evaluation, individual students may obtain copies of these forms in the Biology Department Office. Completed forms should be returned to the department office in a sealed envelope labeled with the course and section number within two weeks of the last day of the final examination period for that semester.

On Care and Use of Living Organisms: Whenever living organisms are used to illustrate biological processes in laboratory classrooms, consideration is given to the rationale for their use, including the appropriateness of the species selected and numbers used. Organisms are obtained from approved sources, such as biological supply companies. Their care and use are supervised by qualified faculty and staff who by their example inform students on principles of ethical treatment of animals. After their use, animals
are either returned to appropriate care facilities on campus or are disposed of in a humane and environ-mentally safe manner. In the case of vertebrate animals, college policies comply with the Public Health Service's *Guide for the Care and Use of Laboratory Animals.* The animals are housed in a federally-approved Animal Care Facility. All personnel who work with animals have received appropriate training in procedures of handling. Protocols for all teaching and research activities must be approved by the college's Institutional Animal Care and Use Committee (IACUC), which requires that the instructor/investigator provide a complete description of procedures used. Documents, including animal care guidelines, college policies, and protocols for teaching and research activities are available in the Biology Department Office. All inquiries or concerns regarding the care and use of living organisms in the Rhode Island College Biology Department should be directed to the department chairperson.

On Repetition of Courses: Lecture and laboratory experiences are integrated components of biology courses offered at Rhode Island College. Therefore, if a student repeats a course, he/she must repeat both components. Grades previously assigned in either lecture or laboratory will not be carried forward to a new semester.

On Laboratory Attendance: A fundamental goal of any laboratory science course is to help students gain appreciation for and familiarity with the scientific enterprise. The Rhode Island College Biology Department believes that a proper understanding of the process of science is best approached by participation in laboratory activities. Therefore, it is a departmental policy that the grade earned in laboratory will determine a significant portion of the overall course grade and that *any* missed or incomplete laboratory exercises will be reflected in this grade. Students missing more than two scheduled laboratory sessions are subject to failing the course.

On Reasonable Accommodation of Disabilities: The Rhode Island College Biology Department is committed to making reasonable efforts to assist individuals with documented disabilities. If you are seeking reasonable classroom accommodations under the Americans with Disabilities Act and /or Section 504 of the Rehabilitation Act of 1973, you are required to register with the Student Life Office. This office is located in Craig-Lee Hall, Room 127. The phone

number is 456-8061. To receive academic accommodations in a biology class, students must first complete proper paperwork with the Student Life Office and then discuss appropriate accommodations with instructors at the beginning of each semester.

E. Reminders: This is a course in college biology. As such, it is expected that a student attending a lecture in this course will exhibit appropriate behavior. Although this should go without saying, past experience has shown that this is not the case. Please keep in mind the following reminders:

- Food is generally not allowed in classroom areas (and is NEVER allowed in the laboratories). Please do not eat in class. This is not a meal or snack period. A drink or a snack (something like quiet candy) may be permissible.

- Coming in late disrupts the class. Please be on time. If this problem occurs then steps will be taken to deal with it.

- Once in class, please try to remain there. Leaving and re-entering a classroom during a lecture is disruptive. As far as possible, please take care of personal business before or after class.

- Please try to remember to turn off cell phones and other such electronic devices. The use of these devices in class, even if it is done quietly as in texting, can be distracting and disruptive; if you are discovered using such a device in class you my be asked to leave. (If there is a genuine need to use such a device, as for a family emergency, please see me before class.)

- Attendance and/or participation is not part of the grading process. If you do not really want to be in lecture, please do not come. If you do choose to attend the lecture try to pay attention and avoid rude, distracting, or disruptive behavior (such as coming late, leaving early, reading a newspaper, talking, passing notes, *etc*.). If your actions interfere with the learning process, you may be asked to leave.

- Maintain a sense of humor. We're all in this together, so we might as well enjoy ourselves. Have fun.

COURSE TOPICS

A. General Comments: The topics to be covered in this course are listed below. They are given in the order in which they will be covered, and are followed by the required readings (chapters or chapter sections) in the textbook concerning these topics. Wherever possible, the required readings should be done before the topic is covered in class.

In order for the lecture to run more smoothly, the text material presented for each topic is available on the World Wide Web at http://www.ric.edu/faculty/jmontvilo/109.htm and should be brought to class with you to help in taking notes.

You are responsible for the materials assigned in the textbook and you will be tested on them, even though that specific material is not covered in lecture. Any sidebars in the book may also contain important information and should be read as well.

N. B. The topics and readings marked with a ¶ symbol and shown in green will not be covered in lecture. You are responsible for doing these readings on your own, and they will be covered on the examinations.

(Please note: The field of biology is a large one, and not all topics in this field can be covered here. If you are in a major that requires a standardized exam, such as the PRAXIS exam, you may need to spend some additional time studying those topics not covered here on your own.)

B. The Topics:

Q. What is biology?
A. The study of life and living things.
[Chapter 1]

Topic 01. Introduction
{Sections 1.9-1.10}

Q. What is life?
A. We don't know for sure, but…
[Chapter 1]

Topic 02. Unifying Principles of Biology
{Sections 1.1-1.6}

Q. How have we learned these unifying principles—how is biology studied?
A. Using scientific methodology.
[Chapter 1]

Topic 03. Biological Methodology
{Sections 1.7-1.8}

Topic 04. Biological Vocabulary
[Glossary (for reference)]

Q. What are living things made from?
A. Chemicals and Cells.
[Chapters 2, 3, 5, 6, 7, 10 (Overview; just skim for now)]

Topic 05. Molecular Genetics: DNA and RNA
{Sections 10.1-10.5}

Topic 06. Cells (Introduction)
{Sections 4.1-4.5}

Topic 07. Cells (Membranes)
{Sections 5.1-5.2}

Topic 08. Cells (Organelles)
{Sections 4.6-4.23}

[¶ Animal Form and Function: Chapter 20]

APPROXIMATELY TO HERE FOR EXAM 1
Scheduled for Tuesday, September 28
(subject to change)

Topic 09. Cells (Transport)
{Sections 5.3-5.9}

Topic 10. Cell Reproduction: Mitosis
{Sections 8.1-8.11}

Topic 11. Cell Reproduction: Meiosis
{Sections 8.12-8.18}

Q. How many living things are there and what are some examples?
A. There are up to 30 million species arranged into three domains and six kingdoms.
[Chapters 16, 17, 18]

Topic 12. Taxonomy and Classification

Topic 13. Nomenclature

Topic 14. Survey of Domains
{Section 1.5}

Topic 15. Animalia
[Chapter 18]

Topic 16. Plantae
{Sections 17.1-17.13; 31.2-31.6}

Topic 17. Protista
{Sections 16.11-16.21}

Topic 18. Fungi
{Sections 17.14-17.21}

Topic 19. Eubacteria
{Sections 16.1-16.5; 16.6-16.10}

Topic 20. Archaebacteria
{Section 16.6}

Topic 21. Viruses
{Sections 10.17-10.21}

[¶ Biosphere: Chapter 34]

APPROXIMATELY TO HERE FOR EXAM 2
Scheduled for Thursday, November 4
(subject to change)

Q. How did there get to be so many organisms?
A. Through evolution.
[Chapters 13, 14, 15]

Topic 22. Evolution (Introduction)
{Sections 1.4-1.6; 13.1-13.6}

Topic 23. Evolution (Evidence)
[Chapter 13]

Q. How does evolution work?
A. Through genetics.
[Chapters 9, 14]

Topic 24. Classical Genetics
[Chapter 9]

Topic 25. Evolution (Process)
<> Chapters 13, 14, 15

Q. How does genetics work?
A. Through DNA, RNA, proteins, and biochemical reactions.
[Chapters 10, (11, 12)]

Topic 26. Gene Expression
{Sections 10.6-10.15}

Topic 27. Gene Expression Problems
{Sections 10.16; 8.19-8.24}

Q. What are some practical uses of biology?
A. Although there are many, those of common interest are often medically or economically related.
[Chapter 12]

Topic 28. Stem Cells

Topic 29. Biotechnology
{Chapter 12}

[¶ Conservation Biology: Chapter 38]

APPROXIMATELY TO HERE FOR EXAM 3 (FINAL)
Date to be determined by the Records Office

If time allows, further material will be drawn from the following topics:

Q. What are the raw materials of biochemical reactions?
A. Chemicals.
[Chapters 2, 3]

Topic 30. Inorganic Chemicals
[Chapter 2]

Topic 31. Organic Chemicals
[Chapter 3]

Topic 32. Chemical Reactions
{Sections 2.7-2.10; 2.17}

Q. What allows the chemicals to react?
A. Energy.
[Chapters 6, 7]

Topic 33. Energy

Topic 34. Photosynthesis
[Chapter 7]

Topic 35. Cellular Respiration
[Chapter 6]

Q. Where do the chemicals and energy come from?
A. Through interaction with the environment.

Topic 36. Ecology
[Chapters 34. 35. 36, 37, 38]

Q. How did life originate?
A. We don't know for sure, but…

Topic 37. The Origin of Life
{Sections 16.1-16.6}

Laboratory Component

LAB MEETING TIMES
Section 01: Monday, 10:00 AM to 12:50 PM, FLS 057 (Fogarty Life Sciences Building)
Section 02: Monday, 2:00 PM to 5:00 PM, FLS 057 (Fogarty Life Sciences Building)

COURSE MATERIALS
Textbook (Required): Campbell, N. A., Reece, J. B., Taylor, M. R., Simon, E. J., and Dickey, J. L. 2009. *Biology: Concepts and Connections* (sixth edition). Pearson/Benjamin Cummings Publishing Company. (It is strongly suggested that you bring the textbook to the laboratory with you for reference.)
Laboratory Manual (Required): RIC Biology Department. 2009-2010, Revision B. *Biology 109 Laboratory Manual*. (Available in the bookstore. Additional handouts will be provided as needed.)
Slide Kit (Required): Blank microscope slides and coverslips for use in microscopy. (Available in the bookstore.)
Calculator (Strongly Recommended for laboratory work)

EVALUATION POLICIES AND PROCEDURES
Assessment of the lab grade will be primarily by means of lab reports and examinations. The point values of each will vary. NOTE: In general, except for homework, reports are due on the day that the lab is done; any work handed in after graded work has been given back WILL NOT BE ACCEPTED. A percentage of the final grade will be added to a percentage of the lecture grade to produce the final course grade. Don't put off coming to see me if you seem to be having difficulties with the course. The earlier we identify the problems you may be having the sooner we can correct them. Also, please let me know as early as possible in the semester if you have any physical or learning disabilities that may interfere with your academic activities in this class so that we can take the appropriate steps to deal with them. According to the college: "Rhode Island College is committed to making reasonable efforts to assist individuals with documented disabilities. If you are seeking reasonable classroom accommodations under the American with Disabilities Act, and/or Section 504 of the Rehabilitation Act of 1973, you are required to register with the Student Life Office. The S.L.O. is located in Rm. 127 in Craig-Lee hall. Phone is 456-8061. To receive academic accommodations for this class, please obtain the proper S.L.O. Forms and meet with [the director] at the beginning of the semester."

LABORATORY ATTENDANCE POLICIES

Attendance at all scheduled laboratory sessions is required. (See Biology Department Laboratory Attendance Policy, below.) In general, laboratory work cannot be made up because equipment is only set up for the labs for that week. (While it may be possible to attend a Page 2 different laboratory session during the week, this should be avoided if possible.) In most cases it is impossible to make up a missed laboratory session, even if the lab was missed for a "good" reason. (This is because materials may not be available in subsequent labs and/or the equipment is difficult to set up with constraints of time and space for a single student.) If a lab session cannot be made up, a grade of zero will be recorded for that lab. Biology Department Attendance Policy: "A fundamental goal of any laboratory science course is to help students gain appreciation for and familiarity with the scientific enterprise. The Rhode Island College Biology Department believes that a proper understanding of the process of science is best approached by participation in laboratory activities. Therefore, it is a departmental policy that the grade earned in laboratory will determine a significant portion of the overall course grade and that any missed or incomplete laboratory exercises will be reflected in this grade. Students missing more than two of the scheduled laboratory sessions are subject to failing the course." (Revised 12-06-06.)

LAB TOPICS

The topics to be covered in lab are listed below. Numbers in curly brackets, { }, indicate exercise numbers in the lab manual. Please be sure to read over the appropriate materials before you attend each lab session.
Week Assignment due (AD); **Topic to be done in lab {Exercise Number} (TD)**; Assignment made (AM)

01
Week of 1/25
(TD): Preface; Introduction; Laboratory Safety; Observation and Problem Solving {1}
(AM): Basic Mathematical Concepts {13} assigned (due week 02)
02
Week of 2/1
(AD): Basic Mathematical Concepts {13} due
(TD): Scientific Process {2}
(AM): The Metric System and Measurement: Theory {3A} assigned (due week 03)
03
Week of 2/8
(AD): The Metric System and Measurement: Theory {3A} due
(TD): The Metric System and Measurement: Practice {3B}
(AM): Statistics: Introduction {14A} assigned (due week 04)
04
Week of 2/15
(AD): Statistics: Introduction {14A} due
(TD): The Microscope {4}
(AM): Statistics: T-Test {14B} assigned (due Week 05)
05
Week of 2/22
(AD): Statistics: T-Test {14B} due
(TD): Cells {5}
(AM): Statistics: Chi-Square {14C} assigned (due week 06)
06
Week of 3/1
(AD): Statistics: Chi-Square {14C} due
(TD): Diffusion and Osmosis {10}
07
Week of 3/8
(TD): Biological Variation {12}
08
Week of 3/15
SPRING BREAK
09
Week of 3/22
FIRST LAB EXAM
(TD): Cell Reproduction {6}
(AM): Biological Diversity: Introduction {9A} (read for week 10)
10
Week of 3/29
(TD): Biological Diversity: Bacteria, Fungi, Protists {9B}
11

Week of 4/5
(TD): DNA & RNA: Nucleic Acid Structure and Function {8}
12
Week of 4/12
(TD): Biological Diversity: Plants {9C}
13
Week of 4/19
(TD): Sugar Metabolism in Yeast {11}
14
Week of 4/26
(TD): Biological Diversity: Animals {9D}
15
Week of 5/3
FINAL LAB EXAM
(TD): Classical Genetics {7}