

## INTRODUCTION

General Biology 119:102 is the second semester of a year long course intended for students majoring in the life sciences or pharmacy, and for students who intend to attend a professional school in the sciences. To ensure that you have the appropriate background for this course, we require that you have successfully completed General Biology 119:101; this means that you received a grade of "D" or higher, or were given transfer credit for 119:101. Many students mistakenly think that the name "General Biology" means that we will not cover much detail about each topic. The word "General" in the course title means that this course is designed to prepare you for upper level biology courses in a wide range of topics. You may find that this course covers far more on each topic, and in greater depth, than the biology courses you took in high school. The amount of material we cover is based on what you will need to know to succeed in a higher level course. This course is not designed to "weed out" potential majors; on the contrary, the Division of Life Sciences welcomes majors. However, biology is a demanding field, and unless you can master the material in this course, you will not be ready to go on to higher level courses. We do not recommend this course to satisfy a "natural sciences" distribution for non-science majors. The Division of Life Sciences teaches a number of courses designed to fill a science requirement for non-majors; our advising staff will be happy to discuss whether it is appropriate for you to take this course.

General Biology is organized into lecture and laboratory parts so that you will learn both the theoretical and the practical side of biology. Because this is a large course, we would like you to understand the roles played by the various staff members. The Director of General Biology coordinates the lectures and laboratories on the various campuses where General Biology is taught, and will be able to assist you if you have an exam conflict, are ill for an extended period or have problems in the laboratory you cannot resolve with your laboratory instructor. The lecturers are all faculty members who are knowledgeable in the fields they will be lecturing on. All of your lecturers will announce times when they hold office hours or review sessions; you should take advantage of these if you have questions about the lecture material. The laboratory instructors are graduate students studying for advanced degrees in various fields in the biological sciences or already hold advanced degrees. Your laboratory instructor is trained to guide you in performing the laboratory exercises, and in relating this material to what you are learning in lecture. Your laboratory instructor will also be assigning and grading homework, quizzes and reports which will make up a substantial part of your grade. You should feel free to discuss any problems you are having in the laboratory with your laboratory instructor. You should realize that laboratory instructors are given specific guidelines for assigning and grading lab work, so that your grade in this course will not be affected by instructors who grade more or less strictly. Your final grade in this course will be assigned by the Director of General Biology in consultation with the laboratory instructors and lecturers.

Dr. Diana Martin  
Director of General Biology

**General Biology Office (Dr. Diana Martin, Director; Ms. Kathy Agnese, Secretary)**  
**Douglass Biology 106, open 9:15 - 11:15 am, 932-9368**  
**Doolittle 127 (Busch), open 1:00 - 5:00 pm, 445-0778**  
**General Biology Home Page: <http://mslc.rutgers.edu/Genbio/>**  
**The Virtual Biology Laboratory: [http://bio.rutgers.edu/~gb102/virtuallabs\\_102.html](http://bio.rutgers.edu/~gb102/virtuallabs_102.html)**

**COURSE POLICY  
GENERAL BIOLOGY 119:102 (ALL SECTIONS)**

1. General Biology 119:101 is a prerequisite for 119:102; this means you must have earned a passing grade in 119:101 or received transfer credit to take 119:102. **Students who do not meet these prerequisites will be deregistered.** If you have any concerns about your eligibility, you must contact Dr. Gregg Transue at (732)445-2594 immediately.
2. Students are expected to attend all scheduled meetings of their respective lecture and laboratory sections and to arrive on time and remain for the entire period. Attendance will be taken at each laboratory section and may be taken at lecture. Failure to attend regularly will jeopardize your grade. **Students are expected not to talk during lecture (unless they raise their hand to ask the lecturer a question) and cell phones, beepers, etc. must be turned off.** Students are responsible for all material covered in lectures. This includes the announcements that are made at the beginning of lecture as well as course content. Students may not attend a laboratory section other than their assigned section without prior approval. Students who attend a laboratory section for which they are not registered will not receive credit for work completed in that section.
3. Students will need the following materials:

Text - *Biology*, 7<sup>th</sup> ed.; Solomon, Berg, and Martin

*Laboratory Manual Spring 2006* The manual is designed to fit in a 3-ring binder. Labs begin the week of Jan 23. Labs 1 and 2 are included in the course packet. You will be given the rest of the manual when you attend Lab 2. The University will bill you for the cost of your lab manual

Splash-proof laboratory safety goggles (like those required for Chemistry lab)

The following **optional** materials may be helpful:

*Study Guide to Accompany Biology 7<sup>th</sup> ed.*; Daniel, Daniel, and Taylor  
*A Photographic Atlas for the Biology Laboratory*; Van De Graff and Crawley  
*Dictionary of Word Roots and Combining Forms*, Donald Borror  
*Dissection Guide and Atlas to the Fetal Pig*, Smith and Schenk

The text book and optional materials are available in all campus bookstores.

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4. Grades will be based on the following distribution of points:

Hour Exam I	150
Hour Exam II	150
Final Exam (Comprehensive)	300
Laboratory	<u>350</u>
Total	950

Note: The distribution of points in laboratory is listed in the Lab Policy.

5. Students will be given a formal warning if their progress in the course is unsatisfactory and they are in jeopardy of failing the course.
6. Point grades will be given for all tests and the approximate letter grade equivalents will be posted. No letter grades will be assigned for lab quizzes, homework, or lab reports. Study sheets, lab quizzes, homework, and lab reports are not curved. You should keep track of your lab points (90 - 100% = A; 80 - 89% = B; 70 - 79% = C; 60 - 69% = D) At the end of the semester, a final letter grade will be assigned taking into consideration the letter grade distributions which have previously been assigned for the major exams and the point distributions in laboratory.
7. Final grades in the course are assigned by the Director of General Biology in consultation with the laboratory instructors and lecturers. In order to pass this course a student must satisfy all of the following three conditions:
- 1) Accumulate a certain number of total points; and
  - 2) Pass one of the three common exams (Hourly I, Hourly II, Final); and
  - 3) Pass lab (i.e. accumulate at least 60% of the possible points in lab, not including the lab practical exam)
8. All students are expected to take the **Common Hour exams** at the designated times. The exam schedules for each campus are given in the appropriate syllabus. Prior to each exam, room assignments will be posted on the General Biology web page and outside the laboratories. Since many courses schedule exams at about the same time, please note that you may not reschedule the exam because you have more than one exam the same day or week. If an hour exam is missed, a grade of zero will be assigned unless a valid written excuse is received by the General Biology Office. Any student with a legitimate conflict for the scheduled exam time (athletic, evening class, religious observance etc.) must call the General Biology Office at least one week in advance of the scheduled exam. Students will not be excused from an exam for health reasons except in the case of a serious illness verified by a medical doctor. If you miss an hour exam for any reason you must call the General Biology Office within 24 hours of the scheduled exam (even if your Dean's Office also notifies us). Absences can only be approved or excused by the

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Director regardless of which staff member is lecturing at the time. A grade of zero will be given to any student who misses the exam and fails to provide notification within 24 hours. In no case will a make up be given more than ten days after the date of the exam, and then only if the Director has been notified as stated above and given approval.

9. The **Hour Exams** will be graded and returned in lab beginning ten days after the exam was taken. Answer sheets and test booklets will be returned in lab. If a mathematical error or machine grading error has been made, the error must be reported to the Director of General Biology within one week for rectification. Only errors in machine grading or addition will be corrected; no credit will be given for improperly filled out answer sheets, or student errors in transferring answers to the answer sheet. Errors must be reported within one week; after this time no further corrections will be made. If a student questions the correct answer for a particular test question, he/she should return the exam to the Director with a statement in writing justifying the claim to additional credit within one week of the return of the exam to the student. Statements signed by more than one student will not be accepted. At this point, the whole exam will be re-graded. No changes will be considered after this time.
10. **Make up labs** are scheduled only on **Monday afternoons at Douglass (2:15 - 5:15 pm)** and **Monday evenings (6:40 - 5:15 pm) at Doolittle (Busch Campus)** and only for the previous week's laboratory exercise. A missed lab can only be made up by permission; see the Laboratory Policy for information.
11. All students **MUST** take the **final lab practical** with their regular section during the week of **April 17 - 21**. Only students who are seriously ill (with written doctor's excuse), who are on an athletic team attending an out of town game, or who will be involved in religious observances will be permitted to change the time of the lab exam. To do so, you must call the General Biology Office (932-9368, 9:15 am - 11:15 am or 445-0778, 1:00 pm - 5:00 pm) to arrange to take the exam with another lab section during the week of April 17 - 21.
12. The **final exam** is comprehensive. Final exams are not returned to the student. Only students with a conflict (as defined by University policy) or who are seriously ill (doctor's excuse required) will be allowed to take a conflict or makeup exam, and then only if they call the General Biology Office (932-9368, 9:15 am - 11:15 am or 445-0778, 1:00 pm - 5:00 pm) and receive permission before the exam is missed. Students who have a conflict must contact the office at least two weeks prior to the scheduled exam. All conflict and make up exams will be given before the end of the exam period. The final exam is scheduled for Friday, May 5, 4-7 pm; make your travel arrangements accordingly.
13. Final exam and course grades will be posted on the web at FAS.rutgers.edu. The General Biology Office and the Division of Life Sciences Office will not give out grades over the phone or by e-mail for any reason. In accordance with University Policy, final exams and final lab

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practicals are not returned to students. Directions for reviewing your final, if you wish to do so, will be posted with the final grades.

14. In no case will students be allowed to take a retest for any exam in this course. In no case will any examination grade be dropped. Any student who feels that extenuating physical or personal problems may affect their performance on an exam, and wishes to have this fact known to the General Biology Staff, must have the problem documented in writing through their college dean's office on or before the day of the exam. Any consideration given to these factors is at the discretion of the Director of General Biology; no consideration will be given to any circumstance not documented at the time of the exam.
15. It is your responsibility to arrange to make up any missed exams, quizzes or other work within the prescribed period given in the course or lab policies. If you leave a message and no one returns your call, it is your responsibility to call again. The General Biology Staff will not take responsibility for making arrangements for you.
16. Except in the event that the University officially closes, we anticipate that all lectures, laboratory sections and exams will be held as scheduled. If classes are canceled for any reason, all students will be required to make up the missed lectures and laboratory sessions; you should contact the General Biology Office as soon as possible to find out make-up times. If possible, information will also be posted on the General Biology Home Page.
17. Students must read and adhere to the Rutgers University Policy on Academic Integrity (see student handbook or obtain a copy from your dean's office). No notes or other reference material may be used during any exam or quiz in this course. **Students may not receive or give assistance of any type**, either written or verbal, during any quiz or examination. No student will be allowed to possess any type of electronic device during any exam. This prohibition includes, but is not limited to, calculators, cell phones, pagers, PDAs, tape recorders, CD/MP3 players, iPods, BlackBerries, watches with capabilities beyond telling time, etc. Any student found to be in possession such a device will be reported to their dean for cheating. All work turned in, including homework, take-home quizzes, study questions, and lab assignments, **MUST be entirely the student's own work, done entirely this semester.** Under special circumstances there may be class discussion of results, but students are to prepare their own reports and homework without written or verbal assistance from other students and without reference to another student's written work or computer files. Lab partners may not write reports together, even if each partner changes the original. This means that you may not allow another student to look at your report or other written work, even briefly. If you consult, quote or refer to any published work or the written or verbal opinion of another individual, it must be correctly cited, as explained in the Laboratory Manual. You may not consult a General Biology 102 Laboratory Manual from a previous semester, even if you own it. All work turned in must be the original handwritten, typed, or printed copy; no xeroxed work will be accepted. We strongly recommend that students keep a rough draft or copy of all work turned in, especially lab reports.

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You should also be aware that the Health Professions Office has received the following correspondence from the American Medical College Application Service (AMCAS): “our rules state if you were ever the recipient of any institutional action resulting from unacceptable academic performance or a conduct violation, even if such action did not interrupt your enrollment or require you to withdraw [the student] must answer ‘yes’ even if the action does not appear on or has been deleted from your official transcripts due to institutional policy or personal petition. If your response is ‘yes’ and additional information is needed, medical schools may require you to complete a Personal Statement Regarding Unacceptable Academic Performance or Conduct Violation. The school will send this form to the student after receiving his/her processed AMCAS application. Failure to return the completed form to the admissions committee by the stated deadline may render you ineligible for consideration.”

18. Because of the large number of students in this course, faculty lecturers will not write individual letters of recommendation. You may, however, request such a letter from your Lab Instructor. If you wish to have a letter of recommendation from your Laboratory Instructor you must request it before the end of the semester.
19. Any student who has a physical disability or diagnosed learning disability is urged to notify the Director of General Biology at the beginning of the semester. You should do this even if you are still in the process of obtaining appropriate documentation. The General Biology Staff will make every effort to provide whatever accommodations or additional services are necessary to support a successful learning environment in this course.
20. University Policy states that “Students are advised to provide timely notification to instructors about necessary absences for religious observances.” If you expect to observe one or more religious holidays during the semester that will interfere with your attendance at lab or at an exam, you must inform your Lab Instructor when you attend Lab 1. Fill in both copies of the form on the following two pages, and turn them in to your Lab Instructor. It is also your responsibility to contact Kathy Agnese, the General Biology secretary, in advance to make arrangements for makeups. If you fail to do so, we are not responsible for any points you may lose.
21. If you have a problem with regard to General Biology, do not hesitate to ask a member of the staff for help. Problems in the laboratory should first be discussed with your laboratory instructor; if your laboratory instructor cannot resolve the problem, you should call the General Biology Office. Specific questions on lecture material should be directed to the lecturer. Additional help, including review questions, tutoring, workshops and review sessions will be available at the Math and Science Learning Centers. Times and locations will be posted outside of the laboratory rooms and General Biology Offices. Other problems or questions should be discussed with the Director of General Biology.

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**LAB INSTRUCTOR'S COPY**

**General Biology 102 - Spring 2006**

**Notice of Expected Absence Due to Religious Observance**

**To be turned in to Lab Instructor at the first lab meeting**

**Print Name** \_\_\_\_\_

**Signature** \_\_\_\_\_

**Section** \_\_\_\_\_

**I plan to observe the following religious holiday(s) that will conflict with my attendance at a lecture exam or at General Biology Lab**

**I RECOGNIZE THAT IS MY RESPONSIBILITY TO CONTACT KATHY AGNESE TO MAKE ARRANGEMENTS FOR MAKEUPS**

<b>Religious Holiday</b>	<b>Date(s) - state if absence will affect lab, a lecture exam, or both</b>
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_____	_____
_____	_____
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**OFFICE COPY (KATHY AGNESE)**

**General Biology 102 - Spring 2006**

**Notice of Expected Absence Due to Religious Observance**

**To be turned in to Lab Instructor at the first lab meeting**

**Print Name** \_\_\_\_\_

**Signature** \_\_\_\_\_

**Section** \_\_\_\_\_

**I plan to observe the following religious holiday(s) that will conflict with my attendance at a lecture exam or at General Biology Lab**

**I RECOGNIZE THAT IS MY RESPONSIBILITY TO CONTACT KATHY AGNESE TO MAKE ARRANGEMENTS FOR MAKEUPS**

<b>Religious Holiday</b>	<b>Date(s) - state if absence will affect lab, a lecture exam, or both</b>
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_____	_____
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## **HELP! HELP! HELP!**

### **\*\*\*THE VIRTUAL BIOLOGY LABORATORY \*\*\***

This internet-based program includes self-contained exercises designed to demonstrate fundamental concepts and techniques through text, video clips, simulation and animations. The virtual laboratories augment the real laboratory experience and allow you to explore assigned laboratory experiments on-line. You should be aware that the Virtual Lab is housed on a small server and cannot accommodate a large number of students at one time. Please be forewarned that it is especially likely to crash when many students log on during the week of lab practicals. [http://bio.rutgers.edu/~gb102/virtuallabs\\_102.html](http://bio.rutgers.edu/~gb102/virtuallabs_102.html)

### **The MSLC, LRC, and other sources of HELP!**

Your first choice for help in any course should be your Lecturer or Laboratory Instructor, especially if you have questions about the course material. However, many supplementary materials and sources of help are available at Rutgers and you should take advantage of them. Your primary source of help for General Biology is the **Math & Science Learning Center**, located on Busch Campus (Allison Road Classroom Building, 3<sup>rd</sup> floor) and Douglass Campus (third floor of the Chemistry Building). Lecture outlines, sample questions and other material related to lecture will be placed on reserve there. Microscope slides and other lab materials are available for study outside of lab. New materials are always being added. The MSLC also has course materials for many courses in Chemistry, Physics, Mathematics and Engineering. The MSLC also provides study areas, computer labs, display materials and hands-on demonstrations in physics and biology, and a friendly place to meet other students in the sciences. Peer tutoring is also provided at the Busch MSLC by a branch office of the Learning Resource Center. The **Learning Resource Centers** are located on College Avenue, Livingston, and on Cook at Loree Hall. The LRCs provide peer tutoring in a number of subjects, as well as assistance with study skills. The LRCs also have copies of reserve materials for many courses. More information on available help will be posted in the lecture and lab areas. Assistance at the MSLC and LRC is available to all students free of charge. There are also many other forms of assistance available through the colleges and special programs. The General Biology Staff will be glad to help you find the help you need. <http://mslc.rutgers.edu/>

**Biology Student Resources Page** Contains many kinds of help, keyed to your textbook, including tutorials, quizzes, and chapter-related Internet links.

[http://www.brookscole.com/cgi-brookscole/course\\_products\\_bc.pl?fid=M20&product\\_isbn\\_issn=0534391753&discipline\\_number=22](http://www.brookscole.com/cgi-brookscole/course_products_bc.pl?fid=M20&product_isbn_issn=0534391753&discipline_number=22)

You can also go to <http://www.brookscole.com/> and follow the links

### **Notetaking “Services” - paid or “free” online**

In accordance with resolutions adopted by the faculty governing bodies of Rutgers University, all students should be aware that the lectures presented by a faculty member are the intellectual property of that faculty member. The General Biology faculty are of the strong opinion that regular class attendance and careful note-taking are an essential part of the educational process at the college level. Furthermore, notetaking agencies have been known to provide incorrect information, for which they accept no responsibility. For these reasons, no agency or person (student or non-student) has been or will be granted permission to sell General Biology class notes, lecture outlines, exams, or syllabi or to provide them online. This policy does not preclude informal sharing of notes among students and does not apply to note takers hired to provide University sanctioned tutoring or to assist disabled students.

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**LABORATORY POLICY FOR GENERAL BIOLOGY 102**

Please fill in the following information during your first lab period:

SECTION: \_\_\_\_\_ LAB INSTRUCTOR \_\_\_\_\_ PHONE: \_\_\_\_\_

OFFICE HOURS: \_\_\_\_\_ LOCATION: \_\_\_\_\_

MAJOR QUIZ DATES: QUIZ I: \_\_\_\_\_; QUIZ II: \_\_\_\_\_; QUIZ III: \_\_\_\_\_

Preparation for lab:

- a) You must read the appropriate section in your lab manual and/or handouts prior to coming to lab each week. Answer the study questions.
- b) All students are required to have their own copy of the Laboratory Manual for Spring 2006 and use it exclusively. You may not consult a lab manual from a previous year.
- c) Bring your lab manual, your text (Solomon), a looseleaf notebook or folder containing unlined white paper, and a #2 pencil to lab with you every week.
- d) Do not wear your best clothes to lab, especially those labs involving dissection. Those people who wear soft contact lenses should wear glasses to lab on dissection days (soft lenses are permeable to many chemicals, including some used to preserve animals). Remember to bring splash-proof safety goggles on dissection days and other days they are required.
- e) Each group of 4 students will be issued 1 pair of non-latex gloves for each fetal pig dissection lab. If you wish to bring your own gloves, they must be in their original package so your TA can verify that they are non-latex.
- f) All assignments done outside of class must be typed. Any written work deemed illegible or improperly prepared (in the opinion of your lab instructor) will be returned ungraded and assigned a grade of zero. There will be no opportunity to re-do such work.

Grading: Lab points will be based on the following:

Major Quizzes (1 in practical form) 3 @ 20, 20 & 15 points ea.	55
Weekly study sheet quizzes	65
Lab report : Nervous System and Senses	30
Resubmitted report	30
Homework, Drawings or Questions from manual:	50
Lab practical	100
Final exam questions on Ecology Field Trip	20
Total	350

Quiz and Homework Policy:

- a) You will have a 5 minute quiz based on the study questions for that week at the beginning of each lab. For three labs, the study question quiz will be followed immediately by a major quiz covering designated

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previous labs; each major quiz will last 20-30 minutes. You will receive no credit for answers that are hard to read.

- b) If you are late for lab, you will not be given extra time to take the quiz (or quizzes). Late buses, traffic jams, malfunctioning alarm clocks and the like are never accepted as excuses for tardiness or for missing lab. If you miss a quiz you will be assigned a grade of zero unless a valid written excuse is presented to your Lab Instructor; you must make up the quiz within one week of the scheduled quiz if your Lab Instructor agrees that the reason was valid. It is your responsibility to contact your Lab Instructor and set up a make-up within one week. Practical quizzes can only be made up with another section, so it is particularly important to contact your Lab Instructor immediately if you miss a practical quiz. Except in exceptional cases, only one quiz may be made up; other missed quizzes will be counted as zeros.
- c) Reports and homework. Students are expected to turn homework assignments and lab reports in on time. These are due at the **beginning** of your scheduled lab period, whether you attend lab or not. If you are late for lab, your work will be counted as 1 day late. Late homework will be accepted at your Laboratory Instructor's discretion, and will be **penalized at the rate of 1/3 of the total point value of the assignment per day (including weekends)**. If you miss lab, assignments should be handed in directly to your own Lab Instructor or to the General Biology Office on the campus where you attend lab; the person in the office (either the General Biology Secretary or a Lab Operations Coordinator) will log in the date and time, give you a receipt, and give your work to your Laboratory Instructor. Do not give your work to anyone who cannot provide you with a receipt. Work slipped under the office door will not be accepted!

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Report 1: 10 points are deducted for every day late (including weekends); reports 3 or more days late will not be graded, and will be assigned a grade of zero. If your report (in acceptable form) is not turned in at the beginning of your lab period, it is already one day late. To be accepted, the report must include the following: (1) report in proper format as specified in Appendix A, the lab manual, and any additional instructions given by your Lab Instructor; (2) relevant data sheets from your lab manual, as specified by your Lab Instructor; (3) signed cover sheet. Illness is not considered an excuse for a late lab report unless the illness is of extended duration (more than one week). A note from your dean certifying the relevant dates and requesting a specific grace period will be required. Computer crashes, and the like are never accepted as excuses. No xeroxed lab reports will be accepted. You should keep a copy or a rough draft of all lab reports. No work will be accepted for a lab you did not attend. If you miss lab on the date that Report 1 is returned to the students (even with a good excuse), it is your responsibility to contact your Lab Instructor and make arrangements to obtain your graded report. You will not be given extra time to submit Report 2.

Report 2 (resubmitted report): Resubmitted reports are due at the beginning of the lab period and are not accepted late for any reason. The resubmitted report must be "ready to grade" and include: (1) your complete original graded report (2) the grading rubric, and (3) your revised report, with all changes in bold. Your resubmitted report will not be accepted if any of these is missing and you will not be permitted to submit the missing items at a later time. If you choose not to resubmit your report, your grade for Report 1 will simply be counted a second time.

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- d) Drawings and class assignments. These will be handed in at the end of the lab in which they are assigned; if you leave lab early they will not be accepted. Drawings will be graded on neatness, accuracy and usefulness. They are for your benefit, as they will be your best study guide for quizzes and the practical, so put some effort into them.
- e) Quizzes, homework and drawings will be returned to you within one week. Your Lab Instructor will inform you as about the date lab report will be returned. No letter grades will be assigned to quizzes, homework, drawings or lab reports.
- f) No extra credit work will be given; students will not be allowed to retake any quiz or rewrite any assignment.
- g) All students must read and adhere to the Rutgers University Policy on Academic Integrity. All work turned in, including homework, take-home quizzes and lab assignments, must be your own work, done entirely this semester. Under special circumstances there may be class discussion of results, but you are to prepare your own reports and homework (see Course Policy).

Attendance: Attendance is mandatory, and records will be kept. You are expected **to arrive on time and remain for the entire lab period**, so schedule your other classes accordingly. Your Laboratory Instructor is not authorized to dismiss your class early. **If you choose to leave lab before the class has been dismissed, or fail to participate in collaborative learning activities, you will lose credit for that lab. All cell phones, pagers, and Walkmen/iPods/MP3 players, laptop computers, etc. must be turned off and put away.** Your lab instructor may give you permission to leave lab briefly to use the restroom or get a drink of water, but not to “take a break,” smoke, chat, use your cell phone, etc. You will be excused from attending all or part of your regular lab only in the case of documented illness, death in your immediate family, if you are an athlete attending an out of town game, or if you are observing a religious holiday. Even if you miss lab for a good reason, you are still responsible for making it up, and arranging for the make-up as specified below. Even if you have a valid excuse, we will not accept lab reports or other assignments for any laboratory unless you attended and participated in the lab exercise. If you have a common hour exam in another course, you must arrange with the instructor of that course to give you a conflict exam. If you miss lab without a valid excuse you will not receive credit for that lab even if you attend make-up lab and hand in the work.

Make-up Lab: If you must miss your regularly scheduled lab for a good reason (see above) there are two ways you can make up the missed work. If you know in advance that you will miss lab, you may be able to attend another lab section. You may only do this if the General Biology Secretary arranges it with the instructor who teaches the lab you will attend; you cannot simply go to any lab section you choose. Otherwise, you can attend make-up lab. **Make-up labs are held on Monday at 2:15 - 5:15 pm at the Douglass Biology Building and 6:40 - 9:30 pm at Doolittle (Busch Campus),** and will be for the previous week's lab **only**. You may attend either section regardless of where you normally take lab. In order to attend make-up lab you must fill out the make-up lab form **before 11:00 am on Monday**; these forms are available at the Douglass Biology Building Room 106, Douglass Campus and Room 127 Doolittle, Busch Campus. You must fill in all information requested and attach written documentation as to why you missed the lab, if applicable. If you cannot get to one

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of these locations easily, you may call the General Biology Office before 11:00 am Monday to sign up for make-up lab. If you leave a message on the answering machine you must spell your name, and leave your phone number, section number, Laboratory Instructor's name, and the time you will take make-up lab. If you signed up by phone, you must bring your written excuse with you when you attend make-up lab. Please note that you may not attend more than two make-up labs during the semester, even if you have a valid reason, unless you have the permission of the Director of General Biology.

Review Lab You may use the Virtual Biology Laboratory and review microscope slides at the MSLC throughout the semester. During Review Week (**Apr 10 - 14**) all materials you have studied during the semester will be available to study for the final practical during your regular lab period only. Attendance at review lab is very strongly encouraged, but is not mandatory. You would be very unwise to skip Review Lab and rely on the Virtual Lab instead, because (1) you will have to answer questions about the actual specimens on the practical and (2) the Virtual Lab can be unreliable and likely to crash. There will be no Monday makeup lab for Review Lab. If you miss your regular lab, and have a good excuse, you may call the General Biology Secretary and arrange to attend a different lab later in the week. You must bring your student ID because you will need to leave it with the Lab Instructor in charge when you check out slides.

Microscopes:

- a) If you are assigned a microscope for use in lab, please use the same microscope every week and return it to its proper place in the cabinet.
- b) Always store compound microscopes with the low power objective in the down position.
- c) Make sure you have removed slides from the stage before you return the microscope to the cabinet.
- d) Microscopes are NEVER to be removed from the lab or moved to another position!
- e) Damaged or faulty microscopes are to be reported immediately. Students will not be charged or penalized for damage so long as they report it.

Other:

**Any willful damage to University property will be regarded as vandalism and will be reported to the University Police.**

Neatness counts! Return all materials to their proper places at the end of lab. Report broken slides or damaged equipment immediately. All slides, glassware and other equipment should be cleaned before being returned. You are responsible for making sure that the bench where you were working is clean, and that no materials are left there.

Please feel free to discuss any problems you are having in lab or lecture with your laboratory instructor. Remember, your laboratory instructor is there to help you!

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## RULES FOR LABORATORY SAFETY

All students must follow appropriate safety precautions in the laboratory. The first step in laboratory safety is to know what procedures you will be following, which chemicals you will be handling, and to review safe handling procedures before lab. The following rules were developed in consultation with Karen Falkenhagen, Health and Safety Specialist, Rutgers Environmental Health and Safety (REHS).

1. Report all accidents and unsafe conditions immediately to your Laboratory Instructor
2. Know the location of the laboratory and building exits.
3. Know the location and use of the safety showers and eyewash stations. If a chemical is splashed in the eyes or on the skin, immediately flush the affected area(s) with water for at least 30 minutes and remove contaminated clothing.
4. Know the location and use of fire extinguishers. Employees and students are not expected to use fire extinguishers to fight fires nor are they trained in their use due to the danger to their personal safety that would result from attempting to extinguish a fire. The fire extinguishers should only be used to clear a path out of the building if you become trapped during a fire.
5. Know the location of the nearest phone and fire alarm pull station which can be used in an emergency. **REPORT EMERGENCIES BY DIALING UNIVERSITY POLICE AT 6-911 FROM A UNIVERSITY PHONE.**
6. Know the potential hazards of the materials that you will use. Copies of Material Safety Data Sheets (MSDS) may be found in Biology 107 (DC) and Doolittle 132 (BC). All chemicals used in General Biology 101 are listed in Appendix C, along with their Chemical Abstract Service (CAS) number. MSDS can be found and reviewed by students at <http://rehs.rutgers.edu/msdslinks2.html>, accessed by either the chemical name or the CAS number.
7. Treat all sharp objects with exceptional caution. Report any blood spill (even if minor) to your lab instructor immediately. Your lab instructor will arrange for cleanup according to the instructions posted in each laboratory.
8. Follow written protocols, procedures, and instructions. Perform only authorized work. If there are questions, ask your laboratory instructor. Follow the specific handling instructions for each chemical outlined in your lab manual; your laboratory instructor will also review these at the beginning of every lab.

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9. Wear eye protection in the laboratory when instructed to do so. Splash-proof safety goggles are required when transferring potentially dangerous solutions (e. g., pH <5 or >8). You must bring your own goggles.
10. Wear proper clothes to protect the body against chemical spills, dropped objects, etc. This prohibits the wearing of bare midriffs, shorts, or sandals in the laboratory. Use of rollerblades, scooters, etc. is not permitted anywhere inside the lab building.
11. Do not eat, drink, smoke, chew gum, use any type of tobacco product, or apply cosmetics in the laboratory. As a reminder, you may not leave lab to smoke during your lab period – you are here to work!
12. Confine long hair and remove or secure ties, other articles of clothing or jewelry in the laboratory.
13. Do not pipette by mouth. In *General Biology*, you will only transfer liquids with disposable 1 mL pipettes with attached bulbs, or syringes. In advanced labs, use only mechanical pipetting devices.
14. Wash hands frequently when handling chemicals and before leaving the laboratory. Remove all protective gear, such as gloves, prior to leaving the laboratory.
15. Do not play in the laboratory. Any “horseplay” among students will result in their immediate dismissal from the laboratory with no assignments accepted for that day. Continued disregard for lab safety will be reported to the Dean of Students of the college in which the individuals are enrolled.
16. Observe all rules and ensure that they are enforced.

*General Biology 101-102* are designed for individuals who are planning to be professional biologists, or people who need this background for another profession. The habits you develop now will be important throughout your career. Therefore, learn how to behave in a laboratory – safely!

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## **GENERAL BIOLOGY PHONE NUMBERS AND OFFICES: WHERE TO GO FOR QUESTIONS**

General Information: If you have questions about make-up labs, exam times and locations, section availability, registration problems, etc. Dr. Martin and Ms. Agnese do not communicate with students by e-mail.

General Biology Office (Ms. Kathy Agnese, Secretary):

9:15 am - 11:15 am Douglass Biology Building 106, phone (732)932-9368

1:00 pm - 5:00 pm Doolittle Labs, Busch Campus; phone (732)445-0778

Advising, majors in the Division of Life Sciences, course selection:

Office of Undergraduate Instruction, Division of Life Sciences Advising Office, Dr. Martha Haviland, Nelson Labs, Busch Campus, Room B112 (732-445-5270).

Cook students wishing to complete a major in the Division of Life Sciences may obtain advice from Dr. Alan Antoine, Lipman Hall Rm 121, 932-9882 x121 (antoine@aesop.rutgers.edu). However, all decisions governing a student's graduation status with respect to completing major requirements in the Division of Life Sciences are made by the Office of Undergraduate Instruction.

To sign up for make-up lab: If you need to sign up for make-up lab, you must do so by 11:00 am Monday. You may fill out a make-up lab form at either General Biology Office.

To sign up for Make-up lab by telephone: Call Ms. Agnese in the General Biology Office before 11:00 am Monday; you must be prepared to spell your name, and give your section number, Lab Instructor's name, the time you wish to attend make-up lab, and the reason you missed lab.

Grades will be posted at **fas.rutgers.edu** no later than the following:

Hour Exam I: March 3, noon

Hour Exam II: April 7, noon

Lab Practical (all sections): April 26, noon

Final Exam and course grade: May 9, noon

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## CHANGING SECTIONS WHAT IF THE SECTION YOU WANT IS CLOSED!??

You can change your registration either in person, via touchtone, or on the Web through **Tues Jan 24**. If the section you want is closed - you will have to find another section. When a section is closed it means there are as many students as we have seats and equipment to accommodate. We cannot squeeze in even one more student. Therefore, we **never** give special permission for closed sections of laboratory. However, all is not lost! We suggest you try the following:

1. Check to see if other lab sections meeting at the same time are open.

**Note:** If you are registered for one of the University College lab sections (Z1, Z2, Z3, or Z4) you MUST attend the lecture that meets Thurs. 6:40 - 9:30 pm in Hill 116 (Busch Campus). However, if you are registered for Cook/Douglass sections M3-Y3 you may attend either daytime lecture section at Hickman Auditorium Room 138, regardless of which one is matched up with your section. Similarly, if you are taking General Biology at Busch/Livingston (sections B1-G4) you may attend either lecture section in the Allison Road Classroom Building regardless of which one your lab section is assigned to in the Schedule of Classes. However, you may **not** take lecture on Busch/Livingston and lab on Cook/Douglass or vice versa. If you have another class that meets at the lecture time matched with your section (but no true conflict exists because you will attend the alternate lecture time), you will need to obtain a Conflict Override form from Kathy Agnese.

2. Try again later. Section enrollment changes constantly. Remember that for every student who is desperate to get into a section, there is usually someone equally desperate to get out.
3. If all else fails, you will have to juggle your class schedule, work schedule, or other commitments to fit in a section that is open.

## WHAT IF YOU ARE UNABLE TO REGISTER?

**Continue to attend lecture because we are committed to getting everyone into the course.** For lab 1, we will permit you to attend the lab section you are trying to get into. Remember that labs do not start until the week of **Jan 23**. If you still have a registration problem after that date, call Ms. Kathy Agnese, the General Biology secretary, on **Wed. Jan 25**. If she can find an open section for you, she will issue you a special permission number that will allow you to register. If you have financial aid problems that prevent you from officially registering until later in the semester, please contact Ms. Agnese and arrangements will be made for you to attend a lab section that has an opening. Sections Z1, Z2, Z3, and Z4 are reserved for University College students and non-traditional students who work in the day and can only take classes at night. Call Kathy Agnese if you fit one of these categories and have been unable to register for one of these sections. **You will be admitted to Lab 2 only if you are properly registered for the section you attend.** This means that you are on the official roster or your Lab Instructor has received notification from Ms. Agnese to admit you.

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## ARE YOU PLANNING A MAJOR IN THE DIVISION OF LIFE SCIENCES?

The Division of Life Sciences Home Page <http://lifesci.rutgers.edu/>

Visit the Division of Life Sciences Home Page and click on “The Office of Undergraduate Instruction” to find out about the degree program, curriculum, and much more.

The Division of Life Sciences maintains an Advising Office in Nelson Biology Laboratory, Room B112 (732-445-5270). Dr. Martha Haviland and the other members of our advising staff will be able to answer your questions about majoring in the life sciences. Cook students may also contact Dr. Alan Antoine, Lipman Hall Room 121, (732)932-9882 x121, [antoine@aesop.rutgers.edu](mailto:antoine@aesop.rutgers.edu). However, regardless of their college, all decisions governing a student’s graduation status with respect to completing major requirements in the Division of Life Sciences are made by the Office of Undergraduate Instruction. You do not have to wait until you declare your major to talk to an advisor in the Division of Life Sciences.

## ARE YOU PLANNING TO ENTER ONE OF THE HEALTH PROFESSIONS?? YOU NEED TO KNOW ABOUT THE HEALTH PROFESSIONS OFFICE!!

The Health Professions Advising Office is a full-time operation serving students at both the undergraduate and post-graduate levels. It also posts a wealth of information on the Division of Life Sciences/Office of Undergraduate Instruction Home Page.

All students who are interested in attending medical school, dental school, or other professional school in the health care area should visit this office at an early date during their academic stay at Rutgers. The advisors will assist you in preparing a file and eventually in making application to a graduate professional field of study.

The services provided by this office include a library of catalogues from most professional schools, video tapes, application forms for the several admissions tests, and other related information. Annually updated admission statistics, both national and for Rutgers, are also available to help guide you in making formal applications.

Douglass students headed toward a career in the health professions should contact the Douglass Health Professions Office (732-932-9197). All others should stop by A207 Nelson Labs, Busch Campus (732-445-5667), to initiate a file and to pick up a copy of the Health Professions Handbook. Your first year at Rutgers is not too early to start a file!

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## READING ASSIGNMENTS FOR GENERAL BIOLOGY 119:102

<u>Lecture</u>	<u>Topic</u>	<u>Chapter</u>	
1	Classification	22	
2	Animal Diversity I	24	
		28	
3	Animal Diversity II	29	
		30	
4	Nervous System I	39	
5	Nervous System II	40	
6	Sense Organs	41	
7/8	Endocrine System	47	
9/10	Reproduction	48	
11/12	Development	49	
		16	Selected portions - TBA
13	Musculoskeletal System	38	
14	Digestion	45	
15	Nutrition	45	
16	Circulation	42	
17	Blood & Immunity	42	
		43	
18	Immunity	43	
19	Respiration	44	
20	Excretion	46	
21-27	Evolution/Ecology	17	TBA
	“	18	TBA
	“	19	TBA
	“	50	TBA
	“	52	TBA
	“	53	TBA
	“	54	TBA
	“	51	TBA
	“	55	TBA

All reading assignments are in Biology, 7<sup>th</sup> ed., by Solomon et. al. Reading assignments may be changed during the semester; you will be responsible for any changes announced in lecture.

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## WHAT TO KNOW ABOUT ANIMAL DIVERSITY

In addition to the material covered in lecture, for each taxon listed below, you should know:

1. The level of classification (i.e., is it an order, class, phylum), the higher taxa to which it belongs, and the lower taxa which belong to it; for example, you should know that Mollusca is a phylum which contains the classes Bivalvia, Gastropoda, Polyplacophora, and Cephalopoda.
2. The defining characteristics of the taxon; for example, you should know that all members of the Phylum Arthropoda have the following characteristics: coelomate; protostome; paired, jointed appendages; exoskeleton made of chitin.
3. The common names of organisms which belong to the taxon; for example, you should be able to state that a tapeworm is in the Class Cestoda of the Phylum Platyhelminthes.
4. You should be able to make taxonomic inferences based on the classifications and information you have learned; for example, you should know that clams and oysters are more closely related to each other than either is to a squid because clams and oysters are in the same class and squids are in a different class.

Be sure that you understand the important characteristics that indicate relationships among the phyla in the Kingdom Animalia: bilateral vs. radial symmetry; acoelomate, pseudocoelomate, coelomate; protostome vs. deuterostome, etc. You should be able to state which of these characterize each phylum. The required information can be gleaned from lecture, laboratory exercises 1, 2, and 3, and the text. The lab manual will actually be your best guide. You do not have to know taxa in the text or lab manual that are not on this list. You do not have to know other material (ecological details, for example) from the text or lab manual for the hour exams. A useful classification summary is included in your text in Appendix B.

Note: Names in quotations are not given formal taxonomic rank, so you need not know what taxonomic category they belong to; however, you should know which higher taxa they are included in and which lower taxa are included in them. For example, you should know which phyla are included in the "deuterostomes", and that deuterostomes belong with the bilaterally symmetrical phyla.

## CLASSIFICATION OF REQUIRED TAXA

Kingdom Protista

"Protozoa" (animal-like protists)

Amoebas

Radiolarians

Foraminiferans

Flagellates

Ciliates

Apicomplexans (sporozoans)

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Kingdom Animalia

Subkingdom Parazoa

Phylum Porifera

Subkingdom Eumetazoa

Animals with radial symmetry and two body layers (diploblastic)

Phylum Cnidaria (formerly Coelenterata)

Class Hydrozoa

Class Scyphozoa

Class Anthozoa

Phylum Ctenophora

Animals with bilateral symmetry and three body layers (triploblastic)

"Acoelomates" (but more closely related to the protostomes)

Phylum Platyhelminthes ("flatworms")

Class Turbellaria (planarians, etc)

Class Cestoda (tapeworms)

Class Trematoda (flukes)

"Protostome Coelomates"

Phylum Nematoda ("roundworms") (body cavity is a pseudocoelom)

Phylum Rotifera (body cavity is a pseudocoelom)

Phylum Annelida

Class Oligochaeta (earthworms)

Class Polychaeta (marine feather duster worms, etc)

Class Hirudinea (leeches)

Phylum Mollusca

Class Polyplacophora (chitons)

Class Bivalvia (oysters, clams, etc)

Class Gastropoda (snails, slugs etc.)

Class Cephalopoda (octopods and squids)

Phylum Arthropoda

Subphylum Trilobitomorpha (extinct trilobites)

Subphylum Chelicerata

Class Merostomata (horseshoe crabs)

Class Arachnida (spiders, mites, scorpions, etc.)

Subphylum Crustacea

Class Malacostraca (lobsters, crabs, shrimp etc)

Subphylum Hexapoda

Class Insecta

Subphylum Myriapoda

Class Chilopoda (centipedes)

Class Diplopoda (millipedes)

Phylum Onychophora ("walking worms" or "velvet worms")

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"Deuterostome Coelomates"

Phylum Echinodermata

Class Asteroidea (sea stars)

Class Echinoidea (sea urchins)

Class Holothuroidea (sea cucumbers)

Phylum Hemichordata (acorn worms)

Phylum Chordata

Subphylum Urochordata (tunicates)

Subphylum Cephalochorda (lancelets)

Subphylum Vertebrata

Agnatha (common name, not a class)

Class Actinopterygii (ray-finned bony fish)

Class Chondrichthyes (cartilaginous fish)

Class Amphibia

Class Reptilia

Class Aves

Class Mammalia

Note: Some taxa are discussed in the text, but not the Lab Manual, and some are discussed in the Lab Manual, but not the text. You will have to combine material in those two sources with lecture to complete your study of this material.

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**General Biology Home Page: <http://mslc.rutgers.edu/Genbio/>**

**The Virtual Biology Laboratory: [http://bio.rutgers.edu/~gb102/virtuallabs\\_102.html](http://bio.rutgers.edu/~gb102/virtuallabs_102.html)**