Instructors:
Sonia Bardy, Lapham Hall 464, Phone 229-6415, bardy@uwm.edu
Office hours: Monday, noon to 2pm or by appointment
Robert Clare, Lapham Hall N313, Phone 229-6806, rdclare@uwm.edu
Office hours: Thursday, 1pm to 2pm or by appointment
Rosemary Stelzer, Lapham Hall N213, Phone 229-7442, rveber@uwm.edu
Office hours: Monday and Wednesday, 10am to noon or by appointment
Please come and talk if you need help or have questions!

Lecture times: MWF 9:00am-9:50am in Lapham 162

Note: for information concerning cancellation of classes due to severe weather, please call 229-4444 or go to http://www4.uwm.edu/news/weather/.

Laboratory: All labs (801-810) meet in Lapham S286

Prerequisites: Biology 150 (grade of C or better)

Hardbound book: ISBN 9781464109478 OR
Three-hole punched book: 9781464184697

Lab Manual for Biological Sciences 152 Individual exercises will be available for download from D2L. Use a 3-ring binder to store and organize the lab exercises.

D2L: Announcements, lectures, and other support materials will be posted on D2L.

Course Description:
Introduction to microbiology, plant biology, and animal biology. Second half of the two-semester introductory course sequence for majors in Biological Sciences, Conservation and Environmental Science, and other natural science majors.

Note: for more information on the Department of Biological Sciences, please visit our Web Home Page: http://www.uwm.edu/Dept/Biology/

GRADING:
Lecture exam scores accounts for 55% of the total course grade and is based on 5 equally weighted non-cumulative exams covering lecture material. Exams are multiple choice. Tophat (class participation) accounts for 5% of the total course grade. Completion of all on-line practice quizzes account for 10% of the total course grade.

Lab Score accounts for 30% of the total course grade and will be based on weekly quizzes, lab reports, and completion of lab manual question sheets. See Laboratory Section below for grading details.

Final grades will be assigned following the scale below: This scale will not be made more stringent.

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<td>F</td>
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</table>

You need to earn a C or better in BIO SCI 152 to continue with courses in Biological Sciences programs.
WORKLOAD STATEMENT:
As well as attending all lecture and laboratory classes, it is expected that students will need to spend at least an additional 4 hours per week reviewing lecture material and completing textbook readings to prepare for exams, 3 hours per week studying for and completing on-line quizzes, and a minimum of 3 hours per week preparing for laboratory class materials and quizzes.

MISSED CLASSES:
If you miss an exam, please contact the instructor as soon as possible to discuss options. Make-up exams will be considered for legitimate reasons (serious illness, family emergency, religious holiday). Non-emergency absence from an exam must be discussed with the instructor prior to the exam date. Make-up exams may not be the same as the ones taken by the rest of the class. You cannot make up a missed lab. If you miss a lab class, please contact your TA immediately to discuss options to catch up on the material.

ON-LINE QUIZZES:
Research shows that regular testing on material drastically improves retention. To help you with keeping up with self-testing on lecture material and prepare for the exams we have provided a series of on-line quizzes on d2l as review of material covered in lecture. Completion of all practice review quizzes will count for 10% of your total course grade. You need to complete each review quiz at least once but can take quizzes multiple times to improve your review for lecture exams. Quizzes will not be graded but you will get a score and about questions after quiz submission. You will gain most benefit from these quizzes as a test, after studying the lecture material, without referring to your notes or text. (see Study Tips below)

TOPHAT:
We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. You can visit the Top Hat Overview (www.support.tophat.com/hc/en-us/articles/200019034-Top-Hat-Overview-Getting-Started) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system. An email invitation will be sent to you by email, but if you don’t receive this email, you can register by simply visiting our course website: https://app.tophat.com/e/288023
Note: our Course Join Code is: 288023
Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.
Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in-app support button, or by calling 1-888-663-5491.

The points you earn by answering these in class questions will be used to calculate your “class participation” score, which as noted above is worth 5% of your final grade. You will receive a full point for each correct response and 0.8 of a point for an incorrect answer. All students with a class participation score of at least 50% at the end of the semester will have an extra 15% added to their final class participation score.

LEARNING SUPPORT:
Resources including a Study Guide will be provided on d2l to help you structure your study and learning for this class. Lecture material posted on d2l includes Learning Objectives which help you focus on the material to be learned for the exam. If you need help with how to study, please contact the instructors!

If you need special accommodations to support your learning in this course, please contact the instructors as soon as possible. Link to Student Accessibility Center: http://www4.uwm.edu/sac/

Academic Misconduct – The university’s responsibilities include the promotion of academic honesty and integrity and procedures to deal effectively with instances of academic dishonesty. You are responsible for the honest completion and representation of your work, for the appropriate citation of sources, and for the respect of others’ academic endeavors. Cheating, plagiarism (including ‘self-plagiarism’), or other acts of misconduct will result in a severe penalty to you. You are responsible for knowing what behavior constitutes academic misconduct. Student academic misconduct procedures are specified in Chapter UWS 14 and Faculty Document No. 1686 and can be found at http://www4.uwm.edu/acad_aff/policy/academicmisconduct.cfm

The following UWM web page is dedicated to campus-wide policies regarding religious observances, incompletes, academic misconduct, grade appeal procedures, final examination policy, students called to military service, discriminatory conduct, and complaint procedures. More details can be found at: www.uwm.edu/Dept/SecU/SyllabusLinks.pdf.
Come to class, listen and engage in the lecture material – write notes or annotate the notes provided on d2l to help you engage with the material.

- Engage with the in-class exercises and questions
- Use active learning strategies for your revision at home by yourself or with a study partner.

Active Learning strategies: You need to make your learning and revision as active as possible! Just reading through the lecture material and reassign the book is useful but it is very passive and so has limited value on its own.

For most of the lecture notes posted on d2l, there are learning objectives and vocabulary words. Use these to work out what material to focus on – these are clear lists of what we want you to know and therefore what will be included in the exam! [For course sections without learning objectives, go through the notes and find your own key points]

EIGHT-STEP PROCESS for more active learning

1. Reading Review: Begin by reading short sections of the material (from lecture notes or slides posted on d2l, and/or your own lecture notes).

2. Write out key ideas, highlight words, draw diagrams to summarize ideas and relationships – writing engages your mind more than passive reading and therefore provides better quality learning.

3. Review vocabulary: Using flash cards to test yourself or study partners on vocabulary words and their meanings (in both directions - look at the term and try to remember the meaning, look at the meanings and try to remember the term).

4. Learning Objectives: Then go to the learning objectives for each lecture, which are in the lecture pdf files. Put your notes aside (so you can’t see them) and try to remember and write down all you can for each learning objective. Keep going until you have finished the lecture.

5. Review: If you get stuck on a learning objective, repeat step 1 and 2 above.

6. Repetition: Do these steps as many times as you can to test yourself on the material.

7. Quizzes: When you have done the steps above, you can go to the quizzes on d2l and take the quiz, without any lecture material visible – test yourself! Identify questions you got wrong, and do not understand or can’t remember, and then go back to step 1 and 2 to review that specific material. You can take the quiz again if you need to test yourself again after more review.

8. Repetition: This will take several study sessions, not just the evening before the exam! Below are some additional ideas about studying from a teaching specialist (note the overlap with my comments above)!

Please talk with the instructors if you need help with understanding and learning the material!

Additional Resources:
There are many resources to help you at UWM, including the general resource at www4.uwm.edu/letsct/services/
Other resources: Student Success Center uwm.edu/studentsuccess/
Writing Center: http://www4.uwm.edu/writingcenter/
Tutoring and Academic Resource Center: http://www4.uwm.edu/pass/
**LECTURE AND EXAM SCHEDULE**  
**SPRING 2019**

<table>
<thead>
<tr>
<th>wk</th>
<th>Date</th>
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<tr>
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<td>wk3</td>
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* Exam 5 will be held during final exam week on Wednesday, May. 15th, from 12:30-1:30*
Laboratory Classes all meet in Lapham S286.

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<td>8:00am-10:50am</td>
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<td>Sec 802</td>
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<td>Sec 805: Tuesday</td>
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<td>Sec 811: Thursday</td>
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<td>Sec 803</td>
<td>Monday</td>
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<td>Sec 806: Tuesday</td>
<td>2:00pm-4:50pm</td>
<td>Sec 809: Wednesday</td>
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If you have questions about the lab class material, need help with how to do as well as you can in quizzes and reports, or miss a lab class for any reason, please contact your Teaching Assistant for help!

**Our Teaching Assistants:**

**Ashley Smith**  
Sections: 801, 802  
Email: schul468@uwm.edu  
Office hours: Tuesday 2 - 4 pm  
Office location: Lapham W457

**Kane Stratman**  
Sections: 805, 806, 807  
Email: stratma8@uwm.edu  
Office hours: Wednesday 11 am -1 pm  
Location: Lapham S292

**Zachary Zawada**  
Sections: 803, 810  
Email: zezawada@uwm.edu  
Office hours: Thursday 10 am - 12 pm  
Office location: Lapham SB70

**Lily Gierke**  
Sections: 808, 809  
Email: lggierke@uwm.edu  
Office hours: Tuesday 10 am - 12 PM  
Office location: Lapham S574

**Subhomita Ghosh Roy**  
Sections: 804, 811  
Email: ghoshroy@uwm.edu  
Office hours: T/Th 11 am – 12 pm  
Office location: Lapham S484

**Juleen Dickson**  
Sections: 812, 813  
Email: jdickson@uwm.edu  
Office hours: Friday 9-11 am  
Office location: Lapham SB70
Laboratory equipment, live specimens and greenhouse materials for BIOSCI 152 laboratory classes are expertly prepared and supplied by Elizabeth Muslin and Paul Engevold.

**Required Lab Text:** Biology 152 Lab Manual available as individual lab exercises on d2l.

**General lab policies for your safety and fair assessment**
1. Please turn off cell phones and store away from the lab bench.
2. No consumption of food or drink permitted in the lab.
3. Read the lab before coming to class, and bring with you to the lab each week.
4. Lab assignments are due as noted on the schedule.
5. Lab quizzes can only be made up with prior permission. (Your lowest lab quiz score will be dropped from the grade calculations)
6. Please have the lab manual with you during the lab as it may be needed as part of quizzes.
7. We expect and promote academic honesty and do not tolerate cheating, plagiarism (including self-plagiarism) or other forms of misconduct. You are responsible for knowing what constitutes academic misconduct: [www4.uwm.edu/acad_aff/policy/academicmisconduct.cfm](http://www4.uwm.edu/acad_aff/policy/academicmisconduct.cfm)
8. If you are re-taking this course, please note that all submitted lab work must be original. You may not re-use previously submitted lab assignments.

**Attendance Policy:** You are required to attend all laboratory classes. In extreme circumstances and illness, it is your responsibility to contact your TA and to arrange attendance at an alternative lab.

**Laboratory Grading - Assessment and Assignments:** The laboratory portion of this course is worth 35% of the final grade for the course. There are multiple components of your laboratory grade:

1. Quizzes, 11 (each 15 points each, lowest score dropped) 150 points
2. Hypothesis and experimental design – slime mold experiment 10 points
3. Gene transfer outline 20 points
4. Gene transfer report 40 points
5. Design your own experiment – slime mold report 40 points
6. Animal Diversity lab practical exam 40 points

**Total** 300 points
LABORATORY SCHEDULE

If you have questions about the laboratory grading components or are unsure about the expectations for written reports or quizzes, please talk with your TA!

All lab exercise manuals must be downloaded from d2l. Please read before class.

**Jan 21 - 24**
No lab classes

**Jan 28 - 31**
Lab 1. Scientific method and hypothesis testing
Lab 2. Gene transfer in *E. coli*
Hypothesis and Experimental Design (Lab 4) due 3 days after your lab (i.e. 1/31 – 2/4)

**Feb 4 - 7**
Lab 2. Gene transfer in *E. coli* (cont.)
Lab 3. Microbial symbiosis
Quiz 1. Experimental Design Assignment approved and returned from TA

**Feb 11 - 14**
Lab 4. Survey of protists, fungi, and algal diversity
Quiz 2. Setup the slime mold experiment

**Feb 18 - 21**
Lab 5. Survey of plant diversity and life cycles
Quiz 3. Gene transfer outline due

**Feb 25 - 28**
Lab 6. Flowers, fruits, and plant reproduction (at NWQ Greenhouse, meet in Lab S286)
Quiz 4.

**Mar 4 - 7**
Lab 7. Plant Morphology and Adaptations
Set up for Lab 8 - Plant nutrition, hormones, and tropisms
Quiz 5. Graded outlines will be handed back.

**Mar 11 - 14**
Lab 8. Plant nutrition, hormones, and tropisms (cont.).

**Mar 18 - 21**
**** Spring Recess – No Lab Classes ****

**Mar 25 - 28**
Lab 9. Leaf structure and function
No Quiz. Gene transfer reports will be handed back from TA

**Apr 1 - 4**
Lab 10. Animal development I: Echinoderms and amphibians
Quiz 7. Slime mold report due

**Apr 8 - 11**
Lab 11. Animal development II: Chicken
Quiz 8.

**Apr 15 – 18**
Lab 12. Animal diversity I: Porifera, Cnidaria and Lophotrochozoa
Quiz 9. Graded slime mold reports handed back from TA.

**Apr 22 - 25**
Lab 13. Animal diversity II: Ecdysozoa (nematodes, arthropods); Annelid responses
Quiz 10.

**Apr 29 – May 2**
Lab 14. Animal diversity III: Deuterostomes
Quiz 11. Graded slime mold reports handed back from TA

**May 6 – May 9**
Animal Practical Exam (Based on Labs 10-14)