Biology 180 Class Schedule – Spring Quarter 2015

Instructor	*Coordinator*	*Field Trips*
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Text: *Biological Science, 5th Edition,* Freeman
Class Web Site: http://courses.biology.washington.edu/biol180/

Lecture: M-Tu-W-Th, 10:30 am to 11:20 am, KNE 120
Labs: Hitchcock 243, 247

Wk	Day	Date	Text reading - do before class	Lecture topic	Laboratory Topic
1	M	Mar 30	Chapter 1; Bioskills 2 (B: 4-6)	Course Introduction & Experimental Design	**No lab this week**
	Tu	Mar 31	No reading	Professional development I: Study skills	
	W	Apr 1	444-453	Evidence for evolution	
	Th	Apr 2	453-459	Evolution by natural selection	
	F	Apr 3	No reading	***Practice exam (online 10:30-11:20)***	
2	M	Apr 6	256-263	Mendel: monohybrid crosses	**Lab 1** Hypothesis Testing
	Tu	Apr 7	263-266; 223-226; 237-246	Dihybrid crosses; mitosis and meiosis	
	W	Apr 8	266-271; 274	Chromosome theory of inheritance	
	Th	Apr 9	271-275; 277	Extensions to Mendel	
	F	Apr 10	No reading	***Practice exam (online 10:30-11:20)***	
3	M	Apr 13	277-279	Human genetic disease	**Lab 2** Genetic Variation (& Antibiotic prep I)
	Tu	Apr 14	62-64; 238-239; 304-305; 307-315	The gene, mutation, and alleles	
	W	Apr 15	275-276; 247-249; 251-253	Sources and extent of genetic variation	
	Th	Apr 16	No reading	Professional development II: Prof/grad school	
	F	Apr 17	No reading	**EXAM #1 ***	
4	M	Apr 20	Bioskills 3-6 (B: 4-9)	Statistics	**Lab 3** Introduction to Statistics (& Antibiotic prep II)
	Tu	Apr 21	465-470	Hardy-Weinberg principle	
	W	Apr 22	472-474	Patterns of natural selection	
	Th	Apr 23	459-462	Natural selection: misconceptions	
	F	Apr 24	No reading	***Practice exam (online 10:30-11:20)***	
5	M	Apr 27	478-482; 483-486	Mutation and drift	**Lab 4** Antibiotic Resistance Data Analysis
	Tu	Apr 28	482-483; 470-472	Gene flow; inbreeding	
	W	Apr 29	490-493; 505-516; Bioskills 7 (B: 10-11)	Inferring phylogenies; tree of life	
	Th	Apr 30	492-499	Speciation	
	F	May 1	No reading	**EXAM #2 ***	
6	M	May 4	447-448; 451-453; 511-516	History of life: major innovations	**Lab 5** Phylogenies I: Inferring Trees
	Tu	May 5	516-523	History of life: radiations, extinctions	
	W	May 6	580-588; 592-599	Innovations I: Plant diversification	
	Th	May 7	636-646	Innovations II: Animal diversification	
	F	May 8	No reading	***Practice exam (online 10:30-11:20)***	
7	M	May 11	686-691; 704-708	Innovations III: Chordate diversification	**Lab 6** Phylogenies II: Reading Trees
	Tu	May 12	475-478; 1095-1098	Behavioral ecology: sexual selection	
	W	May 13	1107-1112; 1113-1115	Population growth	
	Th	May 14	843-845; 1101-1107; 1116-1117	Human population growth; Life histories	
	F	May 15	No reading	**EXAM #3 ***	
8	M	May 18	1112-1117	Population structure	**Lab 7** Research Data Analysis
	Tu	May 19	1132-1133	Disease ecology	
	W	May 20	1123-1128	Competition	
	Th	May 21	1128-1132	Consumption	
	F	May 22	No reading	***Practice exam (online 10:30-11:20)***	
9	M	May 25	No reading	**Memorial Day – No Classes**	**Lab 8** Biodiversity and Ecosystem Function I: Data Collection
	Tu	May 26	1133-1135	Mutualism, Coevolution	
	W	May 27	1135-1142	Communities I: Disturbance, succession	
	Th	May 28	1142-1146; 1148-1150; 1184-1187	Communities II: Species richness, NPP	
	F	May 29	No reading	***Practice exam (online 10:30-11:20)***	
10	M	Jun 1	1150-1162	Ecosystems I: Energy and nutrients	**Lab 9** Biodiversity and Ecosystem Function II: Data Analysis
	Tu	Jun 2	1163-1169	Ecosystems II: Global climate change	
	W	Jun 3	1172-1184; 1189-1193	Conservation: Threats & strategies	
	Th	Jun 4	No reading	Professional development III: Research	
	F	Jun 5	No reading	Exam review	
11	M	Jun 8		**EXAM #4 (8:30-10:20) ***	

*** We never give early or late (makeup) exams; no exceptions! If you have an exam time conflict, please contact John Parks within the first two days of the quarter. See the course Policies for details.**

Biology 180 Course Introduction and Policies

Welcome to Biology 180! This class is the first in a three-quarter sequence designed primarily for majors in biology and related disciplines. The sequence introduces fundamental concepts in the biological sciences and provides a foundation for upper division courses. The sequence courses are:

- **Biology 180:** Evolution, Mendelian genetics, Biodiversity, Ecology
- **Biology 200:** Cell biology, Molecular biology, Animal development
- **Biology 220:** Animal and plant morphology and physiology, Plant development

Biology 180 introduces the process of evolution and the rules of genetic inheritance, and describes how organisms interact with other organisms and with their environment. It also explores how humans impact ecosystems, and why ecologists are concerned about the future of natural systems.

The information, concepts, and analytical thinking introduced in lecture provide a unifying framework for the topics covered in Biology 200 and 220. To complement the lectures, Biology 180 labs will help you to develop skills in experimental design and data analysis. We hope you'll find Biology 180 enlightening, stimulating, challenging, and fun.

Learning Goals

In addition to providing a solid conceptual foundation in evolution, Mendelian genetics, and ecology, Biology 180 faculty have identified the following goals for your learning this quarter. These are the skills and habits of mind around which the course is built:

- **Nature of science:** Understanding how hypothesis testing works and what scientists accept as valid evidence.
- **Experimental design and data analysis:** Generating predictions made by alternative hypotheses, designing rigorous experimental tests of those predictions, analyzing experimental results, and presenting those results effectively.
- **Selection thinking:** Grasping how natural selection works and avoiding common misconceptions.
- **Population thinking:** Becoming comfortable with analyzing events in terms of their probabilities or frequencies in populations (e.g. of enzymes, membrane proteins, cells, or individuals).
- **Tree thinking:** Constructing and interpreting phylogenetic trees.
- **Biodiversity:** Appreciating the diversity of life, and recognizing key innovations and events that have promoted diversification over time.
- **Ecological thinking:** Gaining the ability to analyze the array of biotic and abiotic conditions and interactions that affect organisms continuously and simultaneously, and appreciating that they vary through time and across space.

Adding Biology 180 On or After the First Day of Lecture

If you add on or after the first day of lecture, you have missed important announcements. Read this Course Policies section, review the course website, especially the "Other Information" section, and check the course discussion forum for archived email messages.

Course Website, Email, and Discussion Forum

Course Website: The Biology 180 course website is: **http://courses.biology.washington.edu/biol180/**. The home page provides links to some or all of the following (varies by quarter): professor and TA contact information; course discussion forum; syllabus; lecture outlines; study questions; answer keys; and interesting course-related websites. The "Other Information" folder offers expanded explanations of many of the topics covered in this manual. Review it early in the quarter, then return when you need more information.

Email and Email Professionalism: Most course announcements are made via email rather than in class. Monitor your UW email daily. If you use a non-UW email account, forward UW messages to your other account. Be sure that your spam filter is not intercepting our messages; adjust its settings if necessary and monitor the contents of your Junk and Promotions folders.

The professors, coordinators, and teaching assistants receive many hundreds of student email messages each quarter. Our ability to reply promptly and accurately is greatly improved when student messages are clear and concise. Here are some suggestions, common in most professional communication:

- Before sending a message, check this course manual, the course website, and the course discussion forum. The answer to your question may be in one of those sources.
- Use your UW email account. If you choose to use a non-UW email account, then use the *same* non-UW account for all messages throughout the quarter. Messages from different accounts will appear to have come from different senders, making it difficult for us to locate other messages from you.
- Use a specific and detailed subject line. Avoid replying to an unrelated or distantly-related message.
- Include your full name. This is especially important if you use a non-UW email account. We do not reply to unsigned messages.
- Also include your student number. While numbers may seem impersonal, they are helpful in a large class. We always have students with very similar, or even identical, names; student numbers allow us to correctly locate your records.
- If there has been previous correspondence on the same subject, include the text of those messages.
- Provide pertinent details, for example, the assignment number or due date.
- Email just one person; don't copy multiple individuals. See Who's Who below.

Who's Who: Many people are involved in teaching Biology 180: One or two professors, a course coordinator and assistant coordinator, a field trip organizer, and many teaching assistants. Students sometimes wonder whom to contact with questions and concerns. Here's what to do:

- Questions about **biology**, i.e., the subject matter of the course, may be asked in class (lecture or lab), during office hours, or on the discussion forum. Please don't email us with biology questions; your question is probably of interest to other students, and we would like our responses to be available to everyone.
- **All other questions** – assignments, due dates, absences, conflicts, etc. – not answered in the published materials should be directed to course coordinator John Parks (jwparks@uw.edu). If John can't answer your question, he will forward it to the person who can. Please do not copy multiple people with your messages.

Discussion Forum: Professor and teaching assistant office hours can't fit everyone's schedules, so a discussion forum, linked to the website, is used to facilitate discussion of course-related topics. It is available 24 hours every day for your questions, answers, and comments. The discussion forum also includes an archive of class-wide email messages. Please see the Discussion forum instructions in the Other Information folder of the website for more information.

Online Exercises – Submitting Catalyst Exercises Correctly For Credit

Prelabs, and some other course exercises will be done online via Catalyst. If your work is not submitted correctly, you may not get credit for the exercise, so be aware of the following:

- Exercises should be accessed from links on the course website.
- Most exercises allow you to Save your work temporarily, then Resume later. Saving is not the same as Submitting. To submit your responses for grading, choose Submit, not Save. If you Save and forget to Resume and Submit, your quiz will not appear in the graded results file and you will not get credit.
- The stated due date and time for an exercise are the deadline for submission, not for starting the exercise.
- When submitting an exercise, respond to all prompts on all pages **UNTIL YOU GET A CONFIRMATION CODE**; that code tells you that your answers have been received and recorded. **Save the confirmation code for later reference; you cannot get the code later.**
- Submissions attempted after the deadline are late and the answers are not recorded; there will be no record that the student attempted the exercise. If you are working close to a deadline, it is safer to submit an incomplete exercise on time than to risk that no answers will be saved; then resolve to start earlier next time.
- Review your answers carefully before submitting. Some exercises cannot be re-opened.
- The Catalyst system shuts down regularly for maintenance. As of this writing, maintenance is performed each Wednesday morning from 5:00 AM to 7:00 AM; check online for current schedule. Unplanned outages also occur; start your work early, leaving time to return later if the system is unavailable. We will not extend exercise deadlines to accommodate brief service outages.

Online Exercises – Computer Problems

Many Biology 180 exercises are done online. If you encounter a problem, try the following, in this order:

- Double-check that you are trying to access the correct exercise, and are accessing it during the time that it is open.
- Try again, typing login information carefully to avoid typographical errors. Be sure that the Caps Lock key is off.
- Check the instructions to confirm that the correct login is being used.
- Restart or reset the browser to clear cached pages. Try again.
- Reboot the computer. Try again.
- Try a different browser and, if available, a different computer.
- Try a different computer at a different site.
- If you often have problems submitting online exercises, consider using a hardwired campus computer for graded work. They are usually more reliable than wireless connections. Such computers can be found at many campus locations, including the Biology Study Area (BSA), HCK 220.

COURSE COMPONENTS AND GRADING

Grading

Course Points: Course points are available as follows; see additional details in the sections below.

Reading quizzes (online)	68
Clicker questions (in lecture)	about 100
Lab (including online prelab exercises)	82
Field trip and trip evaluation	25
Practice exams (online)	40
Exams (four at 100 points each)	400
Additional exercises as announced	maximum of 15
Total points possible	**730**

Final grades are assigned as follows: The top 5% of students receive a 4.0, and the threshold for credit (0.7) is set at about 50-55% of total points. The interval between 0.7 and 4.0 is divided into approximately equal bins. Note that this grading system is explicitly non-competitive: It is possible for the other 95% of the class to get a grade of 3.9; thus, everyone can get a high "A" grade. Commonly, the median grade is 2.7-2.9.

Checking Your Scores: Graded midterm exams and lab reports are returned in class. Scores for other activities are posted online about once a week. If you think there is an error in the grading or reported score for any class activity, please contact John Parks within one week of the day that scores were made available to the class; we may not investigate if you wait more than one week. If you inquire about clicker scores, please include your clicker device ID; if you inquire about a Catalyst exercise, include your UW NetID. See "Checking Your Scores" in the Other Information folder of the course website.

Progressing Through the Biology 180-200-220 Series: A grade of 1.7 is required to progress from Biology 180 to 200; a grade of 2.0 is required to progress from Biology 200 to 220.

Grades Required to Declare Biology Major: To declare a Biology major, students must complete all three courses in the Biology 180-200-220 series, with a grade of at least 2.0 in each course.

Repeating a Course: Each course in the Biology 180-200-220 series may be repeated once.

Incompletes: Incompletes are granted only rarely—when a student has been in attendance, has done satisfactory work, and can offer written evidence that the work cannot be completed due to circumstances beyond the student's control.

Reading quizzes

Reading quizzes help you prepare for lecture. The questions cover basic course content that you should be familiar with to get the most out of lecture. After a quiz closes, you can check your answers; if you were incorrect, go back to the text to find out why.

Prior to taking a quiz, study the textbook sections assigned for the day (see the syllabus). Integrate the new material with your understanding from recent lectures. Study for comprehension and take notes. Then to take the quiz, follow the link on the course website. The date in the link is the date of the lecture to which the quiz applies.

Quizzes close at 8:00 AM on the day of the lecture to which they apply. Each quiz opens at 11:30 PM the day of the previous lecture, so …

The quiz for	opens at 11:30 PM on the previous
Monday	Thursday
Tuesday	Monday
Wednesday	Tuesday
Thursday	Wednesday

Each reading quiz is worth two points. To minimize the effect of occasional computer problems or brief illness, each student's two lowest reading quiz scores will be dropped.

Note that doing well on reading quizzes does not indicate that you are well prepared for exams. Exams will ask students to go beyond definitions and basic "facts." To do well on exams, students should practice recognizing concepts; applying concepts to new situations; designing experiments to test hypotheses; describing data in words, graphs, and with statistics; and explaining their reasoning in concise and organized writing.

Lecture and Clickers

Clickers: You will use a personal response device ("clicker") to answer questions in lecture starting the third or fourth calendar day of the quarter; the beginning date will be announced in class and via email. Clickers are available at the University Bookstore. If you already have a clicker or plan to purchase one elsewhere, see the course website for details about which brands and models will work.

Clickers must be registered **for Biology 180** before they are used in class. Follow the Clicker Registration link on the course website. Registrations made after 8:00 AM will not take effect until the next weekday.

Clicker responses are graded for correctness, not participation. Points lost due to mis-registration, forgotten clickers, dead batteries, missed lectures, etc., cannot be regained, so be sure to bring your clicker to class, monitor its function, and check your scores. To minimize the effect on your grade of brief illness, clicker malfunction, etc., each student's lowest four clicker scores will be dropped.

In quarters with two lecture sections, students must attend the section for which they are registered. Students will not get credit for clicker responses made while attending the other section.

If anyone uses your clicker to answer for you, it is considered cheating and will result in the loss of all clicker points to date; both students will be reported to the UW office of Community Standards and Student Conduct.

See "Clickers" in the Other Information folder of the course website for more information. See "Exams" below for information about acceptable excuses for missed lectures.

Lecture Distractions – Talking, Cell Phones, Laptops: Every quarter, on evaluations and in email, students report that the biggest distractions in lecture are inappropriate talking, cell phones, and laptop computers.

- Please talk with neighbors only when the professor opens the floor for discussion. If you are talking while the professor lectures or while a student is asking or answering a question, that is a distraction, even if you are discussing biology.
- Please turn your cell phone completely off (not just set to vibrate) and stow it out of the way when in class. If your phone rings in lecture, you may be asked to leave the room. If your phone rings or vibrates during an exam, you will be escorted out.
- Laptop computers are permitted in lecture only for Biology 180 note-taking, and provided that they are not a distraction to students nearby.
- Other electronic devices, such as music players and game stations, are obviously inappropriate and should not be brought to class.

Calculators: Calculators will be needed for some lectures and exams. Most types of calculators, including graphing calculators, are acceptable, but cell phone and web-enabled calculators are not. Calculators may not be shared with other students during exams.

Labs

The weekly laboratory is a required part of the course; there is no lecture-only option. Laboratory exercises allow students to collaborate in a group to design experiments, and to collect and analyze data. Attendance in the section for which you are registered is required; temporary lab section switches are not allowed, and there are no makeup labs. If you must miss lab due to a medical emergency or similar reason, contact course coordinator John Parks as soon as possible (email address on the website); see under Exams for acceptable excuses for missed labs.

Lab Supplies and Preparation: No lab coat or goggles are needed, but avoid long flowing sleeves, scarves, and similar apparel that could dislodge items from the lab benches. If you have long hair, be prepared to tie it back during lab. Bring to lab the course manual, pencils, a good quality white eraser, and scratch paper. To prepare for lab, study the week's lab description and related materials, and do the prelab quiz.

Lab Safety: **Eating and drinking are not permitted in lab**. See the note above about clothing and hair. Responsible behavior is expected at all times. Careless or deliberately risky behavior that endangers the student, classmates or teachers, or laboratory equipment, is unacceptable; the student will be asked to leave the lab and may be denied further access to our laboratories.

Lab Credit: Each week's laboratory exercise is worth 10 points, including the 2-point online prelab quiz. Lab points also include a 2-point online Excel tutorial. For credit, students must participate fully in the complete one hour-fifty minute lab session. Students write and submit an individual or group report by the end of each lab. Lab credit is awarded for experimental design; data collection, recording, and analysis; discussion with classmates and teaching assistant; presentation of results; clean up; and other activities; as well as the written report. Reports are graded by teaching assistants; to manage grading variation among TAs, lab points are adjusted to a common average at the end of the quarter. The lowest lab score and lowest prelab score are dropped. See "Exams" for information about acceptable excuses for missed labs.

Changing Lab Sections: Registration is open through the first four weekdays of the quarter. During that period students are free to change lab sections as follows: If you see an opening, simply register for it and drop your current lab. To attempt a switch with another student, use the "Section switcher" link on the course website and follow the instructions there. *No lab section changes after the first four days*. **Note: that students may <u>not</u> switch sections informally or attend a section for which they are not registered; section changes must be carried out online or via a Biology advisor**. While looking for space in another section, be sure to attend the lab for which you are actually registered; during the first week of lab, students who miss the section in which they are enrolled will be dropped.

Field Trips

Field trips introduce you to the diversity of habitats and organisms in Western and Central Washington. One field trip and post-trip evaluation are required. Without a trip and evaluation, you will receive an Incomplete for Biology 180, assuming your other scores are high enough.

Evaluations are due one week after your completed field trip; late evaluations result in a 5-point deduction. Missing a trip or canceling with less than 24 hours notice results in a 10-point deduction. See the "Field Trips" section of the course website for more information. See "Exams" for information about acceptable excuses for missed field trips.

Practice Exams

Graded written online practice exams are given many weeks; see the syllabus for dates. To minimize the effect on your grade of brief illness or technical problems with your computer, each student's lowest practice exam score will be dropped. Practice exams are peer-graded, and grading is required – no exam credit if you forget to grade! There are no makeups for missed practice exams or missed grading; see "Exams" in this course manual for our full policy on early, late, and missed exams.

See "Practice Exam Instructions" in the Other Information folder of the course website for detailed information about taking and grading practice exams.

Exams

Three or four exams are given each quarter; see the syllabus for dates. Exams must be taken with the class, and at the date and time specified. In quarters with two lecture sections, midterms are given at *each* of the regular lecture times; there is one common Final exam, for both sections combined, at the day and time listed in the syllabus. Exams are mixed format – short answer, graphing, drawing, etc. – *not* multiple choice.

Exam Date, Time, and Location Conflicts: We give no early or late (makeup) exams and, with rare exceptions, no prorated or off-campus exams. Legitimate exceptions require written and verifiable documentation, and include death or near-death in the immediate family, student illness that requires immediate medical care, recognized religious observances, and UW-sanctioned events where the student's participation is mandatory.

If you have a known conflict with an exam time or location, contact course coordinator John Parks *within the first two days of the quarter*. You may have to drop the course and take it another quarter. Waiting beyond the second day will decrease the already small chance that an accommodation will be offered. For emergencies, contact the coordinator as soon as possible. Excuses **not accepted** include: Registered Student Organization events, personal travel arrangements, conflicting appointments, non-emergency medical procedures, previous illnesses that interfered with study time, and illness that does not prevent attendance. Unexcused exam absences will count as zero in the calculation of course grades; there are no makeups for unexcused absences.

These same restrictions and acceptable excuses apply to missed labs, lectures, field trips, and other course activities. Unexcused absences will count as zero in the calculation of course grades.

Exams are timed and must be completed within the allotted time. Using more time than allotted will result in a zero grade for that exam at the discretion of course staff. This can include any writing done after students are instructed to stop writing on their exams. If you have forgotten your name, stop writing and bring your exam to a TA to have them add your name to avoid any confusion.

Requesting a Review of Exam Grading or Addition Errors: Graded exams will be returned as soon as possible, usually within one week. If you are absent when exams are returned, see your TA during the next lab session.

An answer key will be emailed or posted on the website. If, after studying the answer key carefully, you think that a mistake was made in grading, you may ask for one and only one question to be regraded. Regrades are for the purpose of correcting grading errors, not for "point recapture."

We copy exams before returning them to you, but will regrade only original exams. If you intend to ask for a regrade, avoid writing or changing anything on your exam.

To submit a request, staple at the upper left front of your exam a note with the following information:

- **In the upper right corner, your full name, lab section, and TA's name**
- **The number of the question to be reviewed and a brief, but specific explanation of the nature of the error. Concise writing will be appreciated.**

Use a piece of paper large enough for the grader's response, at least one-half page. Take care not to write anything on the exam itself. Take the exam-with-note to the **Biology Instructional Support Office, HCK 302**, and give it to **Gretchen Shirley-Bellande** or **Jeannette Takashima**; do **not** give your exam to a TA. The request deadline is one week from the date that exams were returned to the class. Late requests will not be considered. Note that we usually review other parts of the exam during the regrade process and a loss of points is possible.

Correction of **point-addition errors** should be requested as above. In your note, specify what part of the exam to re-add (the question or page number). Addition errors do not count as the one regraded question.

DISABILITY ACCOMMODATIONS

Students who would like to request academic accommodations for a disability should contact Disability Resources for Students (DRS), 011 Mary Gates Hall, (206) 543-8924 (V/TTY), preferably before the beginning of the quarter. When DRS has completed it's evaluation, they will send a faculty notification letter to course coordinator John Parks. He will work with student and the DRS Office to make the necessary arrangements.

CHEATING AND PLAGIARISM

Copying exam answers from a neighboring student, using notes during an exam, and altering exam answers in any way prior to requesting a regrade, are all forms of cheating. Any type of cheating on exams will result in a grade of zero (0) for the entire exam. Copying practice exam answers from another student is also cheating, and will result in a grade of zero (0) for the practice exam. Incidents of cheating will be reported to the College of Arts and Sciences office of Community Standards and Student Conduct. In most cases, the review results in an academic warning, probation, or dismissal from the University, in addition to the loss of points. See also Clickers and the Practice Exam instructions.

For most work, collaboration (working with other students to improve your understanding) is encouraged, but plagiarism (presenting someone else's work as your own) is not. Plagiarism occurs any time a work is copied without attribution, whether the source is published or unpublished, and whether the source is a known author or another student. Plagiarism is considered academic dishonesty, and is not tolerated at the University of Washington. When you work with other students, be sure that the work you submit for grading reflects your own understanding and is not copied from another student. If you are at all unsure about the differences between collaboration and plagiarism, contact the professor.

TIPS FOR SUCCESS

Although there is a large body of knowledge that you must know to succeed in biology, it is critical that you do more than just memorize “facts." As teachers, our primary goal is to emphasize critical and analytical thinking skills. We'll ask you to identify the similarities, differences, and connections among processes and events; to interpret experimental results; and to identify unifying concepts. We want you to understand how and why things happen—not just that they do. This level of understanding requires more active involvement on your part than just memorizing facts and reproducing them on exams. Don’t be satisfied that you understand something until you can explain it to someone else and use it to solve new problems.

Exams are mixed format: short answer, graphing, drawing phylogenies, designing experiments, etc. Typically, exam questions emphasize lecture and related material from lab.

Attending lectures

Lectures focus on how biologists think. They don’t simply repeat material in the textbook, but will give you an idea of what concepts are most important. **Exams are based heavily or even exclusively on lecture material**, plus related concepts from lab. Take detailed notes, then review your notes as soon after lecture as possible. Fill in any missing information so that notes are complete and logical. You should also be able to identify the two or three most important concepts introduced in each class session. These concepts are likely to be the focus of exam questions. Be able to discuss examples of those concepts and indicate why each example is a good illustration of that concept. Create concept maps, outlines, or other summaries of each lecture and of each major topic.

Most quarters, our lectures are recorded; the recordings are accessible via a link on the course website. If you must miss a lecture, be sure to view the video (link on the course website). Be aware that some lectures may not be recorded due to technical problems.

Using Your Text

Your text is a valuable resource. Be sure to read the assigned material before lecture. After lecture, go back and review the material with an aim toward synthesizing what you learned in class, filling in the gaps in your understanding, and drawing connections between the ideas presented in this lecture and those presented earlier in the course. Highlight important points or make an outline or concept map as you go, numbering the key ideas and summarizing each section in your own words. Answer the blue questions in the text to make sure that you understand what’s going on.

Preparing for Exams

Study biology every day. You should spend at least 3 hours out of class for every hour in class. For a 5-credit class, this means that you should spend about 15 hours each week beyond in-class time. Spend several hours each day reviewing your lecture notes and text; learning new vocabulary; summarizing topics; preparing for and reviewing lab; creating concept maps; integrating information from lecture, lab, and text; working on problems or study questions; and practicing explaining your reasoning in writing, graphs and statistics to your study partners or on the discussion board. Don't wait until exam time to figure things out. Cramming doesn’t work in this course; just reading the text or reviewing your notes passively won’t work, either. You must be able to work with the ideas: apply them to novel situations, solve problems, and explain your reasoning—clearly and concisely—to another person.

GETTING HELP

Office Hours and the Biology 180 Student Discussion Board

Take advantage of professor and TA office hours and review sessions. We want to help you understand the material, and a willingness to ask questions is the hallmark of a mature, serious student—the type that we like to write letters of recommendation for. We are here to help. You have to do your part, though, and make the effort to come talk to us. And please don't wait until mid-quarter when you've fallen behind. Start early.

When you can't meet with teachers in person, use the student discussion board to find a study group, ask questions, propose answers to other students' questions, and discuss class-related issues. The discussion board is a virtual study group of hundreds of students – make the most of it.

Tribeta Tutoring

Members of the Biology Club volunteer their time to work with students in the introductory Biology courses. These are juniors and seniors who have done well in the intro courses. They also work with faculty to make sure they are current with the course material.

Tutoring is offered most weekdays in the Hitchcock Hall 4th floor lounge. Some quarters, individual one-on-one tutoring is also available. Check the Tribeta website (http://students.washington.edu/tribeta/tutoring/) for current schedule.

Study Groups

Study groups can be a powerful learning experience because they challenge you to explain things to someone else—they make studying more efficient and effective, as well as more fun. Focused study with others allows you to pool your ideas and see material from a different perspective. To form a study group:

- Talk to people in lab or use the course discussion board to find others with similar schedules and goals.
- Try for a group of four. Larger groups may not give everyone a chance to participate; smaller ones may not generate enough ideas. Don't study with close friends; you'll end up chatting, and friends may not offer objective feedback.
- Choose a convenient, comfortable, and quiet place to meet each week. Schedule your first meeting early in the quarter and clarify the goals of the group: to fill in gaps in lecture notes, discuss weekly study questions or questions in the text, study for exams, discuss the reading and/or ideas generated by the class, and so on.

Remember: you never know the stuff until you teach it!

UW Department of Biology:
Everything You Need To Know But Were Afraid To Ask!

Advising Office, 318 Hitchcock Hall (206-543-9120)

- Walk-in hours for advising are Mon, Tues, Wed, & Fri 9 am to noon and 1:00 pm to 4:00 pm and on Thursdays 9 am to noon and 1:30. to 4:00 pm
- Advising is open to anyone—you do not need to be a declared Bio major to come in.
- Please check in with an adviser at least once *every* quarter. Planning ahead can save you headaches later! (Trust us on this one.)
- Advisors are happy to make an appointment with you to accommodate your schedule or to spend more time assisting you; contact an adviser directly to schedule appointments.
- Appointments are required for long-range planning as this takes more time than we can devote to you during walk-in hours. Long-range is anything beyond the next quarter.
- Our busy times are during registration and the first week of the quarter; please bear in mind that individual and long-range planning appointments are limited during this time.
- If you submit a request, petition, or other paperwork with one adviser, please follow up directly with that same adviser when you have further questions.

Membership Has Its Privileges!

- **Biology is a competitive major.** You will need a 2.0 GPA in each of Biology180, 200, 220 and a 2.5 GPA for supporting course work combined, to be eligible to apply.
- Only declared biology majors are allowed to register for biology courses during Period I registration.
- Declared majors are added to the **"biostudent" email listserv**, which sends announcements about jobs, internships, volunteer and research opportunities, new or exciting courses, department events, change in the advising office hours, etc. **Any** student may join the biostudent listserv **at any time** by going to: http://mailman1.u.washington.edu/mailman/listinfo/biostudent

Rumors, Myths, Legends … Here's The Real Deal!

- Remember while you can take some biology courses as soon as you complete Biology 180, only Biology majors can register during Period I.
- **Repeating a course** You may repeat Biology 180, 200, & 220 one time only and you will not be eligible to register until Period III.
- There are **no wait lists** for closed classes! There are **no add codes** for closed classes! If a course is full you should:
  - — Keep checking the time schedule for an opening. Be sure to check after grades are posted for the current quarter, as students not meeting the prereq's will be dropped. This is noted on the time schedule as "cancellation in effect." **Note that to check for an opening, you must click on the link for each individual SLN; the front page of the time schedule is refreshed only once every 24 hrs.**
  - — Contact the Course Coordinator by email.
- **Graduating Senior Priority:** you can use your GSP registration for 2 quarters—this allows you to register on the first day. You must apply for graduation by the deadline listed in the academic calendar: http://www.washington.edu/students/reg/calendar.html

Resources ... Use Them!

- The Department of Biology has a beautiful website with tons of great information, including undergrad research info, policy info, and faculty profiles: http://www.biology.washington.edu/
- The Tri-Beta Honor Society offers free tutoring for bio courses and Genome 361 & 371; the Biology Club that Tri-Beta sponsors is a fun way to meet other students and take part in biology-related events. See the next page for more information.
- The Center for Career Services offers loads of free services to students! They can help you determine your strengths and interests for future career possibilities, research potential careers and salary earnings, learn how to network and find jobs, decide about grad school, write a resume, prepare for interviews, find internships and summer jobs, and create a letter of recommendation file (there is a fee for this service). Learn more at http://depts.washington.edu/careers/.

The Biology Advisers:

Janet Germeraad
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206-543-6647
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Academic Counselor
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TRIBETA & BIOLOGY CLUB

BIOLOGY CLUB MEETINGS

The Biology Club is a fun and interesting way to meet other students. There are bi-weekly meetings throughout the quarter, as well as fieldtrips, volunteer opportunities, and more. Check out the Tri-Beta website, **http://students.washington.edu/tribeta,** for more information and a detailed schedule.

TUTORING

The Tri-Beta Biological Honor Society offers **free tutoring** for the Intro Biology courses and Genome 371. All of the volunteer tutors have been through these courses, and they can help you get through it too! See **http://students.washington.edu/tribeta/tutoring.html**.

MENTORING

Looking for someone who has navigated the Biology Department and who knows the ropes at UW? Check out the mentoring program offered by Tri-Beta. Each quarter, the program matches new Biology students with upperclassmen already in the Department of Biology. This is a great opportunity for upperclassmen to share their insights on how to make school a little easier to bear, while, for new Biology students, it is a chance to soak up all of the advice that they can get!

Go to mentoring web page, **http://students.washington.edu/tribeta/mentoring.html**, and sign up to be matched with a mentor. We do our best to match you with a mentor of similar biological interests.

LEADERSHIP OPPORTUNITIES

Looking for leadership experience but don't know where to begin? Start by joining the Biology Club, and then join Tri-Beta after you have completed the intro biology series. Once you're a full member of Tri-Beta, you may run for an officer position. Becoming an officer increases contacts within Biology and other related departments, looks great on a resume, and is a fantastic way to interact with other students, faculty, and staff to help build a stronger biological community.

BIOLOGY T-SHIRTS

Show that you're a part of the best department on campus and purchase a Biology T-shirt TODAY. The money funds the annual spring BBQ, treats during tutoring sessions, and food at club meetings. Wear your T-shirt the 1st Wednesday of each month, Biology Apparel Day, and stop by 318 HCK to get your free candy and enter to win a terrific prize!