BIOLOGY 2.3 CLASS SYLLABUS

INSTRUCTOR: Robin Fautley, Ph.D.
Office Hours: Tuesday 11:00 AM – 11:30 AM
Wednesday 12:30 AM – 2:00 PM
Thursday 9:00 AM – 9:30 AM or by appointment

Office: Baker Hall Room 1818
Phone: 707-527-4523
E-mail: rfautley@santarosa.edu
Web Site: http://online.santarosa.edu/homepage/rfautley/

INSTRUCTIONAL AIDE: Peggy Rockwood
Baker Hall, Room 1840A
Phone: 521-3750
E-mail: mrockwood@santarosa.edu

LECTURE HOURS: Tuesday – Thursday 9:30AM –11:00 PM Baker Hall, Room 1840

LAB HOURS: Tuesday – Thursday 12:00PM – 3:00 PM Baker Hall, Room 1840

TEXT (REQUIRED):
Reece, et.al, 2013. *Campbell Biology*, 10th Edition (or earlier edition)
Life Sciences Department, Santa Rosa JC, Fall 2016, Biology 2.3 Laboratory Manual

RECOMMENDED TEXT:
Rushforth, et.al, 2008. *Photographic Atlas for the Botany Laboratory*, 5th ed.

ALSO REQUIRED:
Lab notebook (hardbound only) with plain white paper or graph paper, 50-100 sheets
a #2 pencil for lecture exams; plus 5 Scantrons and 5 – 11in x 8.5in essay books;
(If you give me unmarked copies, I will keep your exam materials for you)

STUDENT LEARNING OUTCOMES – Upon successful completion of this course, students will be able to:

1. Compare and contrast the ecology and evolution of algal protists, cyanobacteria, plants, and fungi using cladistic classification.
2. Apply and integrate information from one or more levels of biological organization to study of cell mechanisms, anatomy, physiology, ecology, and evolution of members of the plant, protist or fungi kingdoms.
3. Identify and assess global environmental problems and ecological principles analyzing the impact of one on the other.
4. Investigate and evaluate biological phenomenon and summarize results in written scientific format.
5. Perform laboratory techniques, including microscopy, with a high level of expertise without assistance or instruction.

Course Outline of Record:
https://busapp02.santarosa.edu/SRWeb/SR_CourseOutlines.aspx?mode=1&CVID=23463&Semester=20127

BIOLOGY 2.3

Dates		Tentative Schedule of Topics	Reading (pages)
1/17 T	Lect	Introduction, Taxonomy,	Ch 1, Ch 6, Ch 26
	Lab:	Lab Introduction, Exploring Plants, Cell Structure	
1/18 W	Due:	Online Quiz 1	
1/19 Th	Lect:	Plant Cell Structure & Prokaryotic Cells	514-519, Ch 27
	Lab:	Systematics	
1/23 M	Due:	Online Quiz 2 and Quiz 3	
1/24 T	Lect:	Bacteria and Archaea	Ch 27, 232-241
	Lab:	Life Cycles, Microscopes, & Cyanobacteria	Ch 13
1/26 Th	Lect:	Fungi	Ch 31
	Lab:	Fungi; Video: "The Rotten World Around Us"	
1/28 Sat	**Field**	**Trip**: Sonoma Coast Meet from 3:00PM – ~5:45PM (Low tide Sat 2/6: -0.4, 5:37 PM, sunset 5:31PM)	
1/31 T	Lect:	Fungi	Ch 31, 810-811
	Lab:	Fungi	
2/2 Th	Lect:	Protists	Ch 28
	Lab:	Intertidal Zonation lecture; Algal Protists	
2/7 T	Lect:	Protists	Ch 28
	Lab:	Algal Protists, *Identify Field Trip Algae*	
2/9 Th		***PDA Day – No Classes***	
2/14 T	Lect:	Origin and Evolution of Plants	Ch 29: 612-621,
		Review for Exam 1	530-531
2/16 Th	**Exam:**	***Diversity Lecture Exam #1 and Lab Exam #1***	
2/21 T	Lect:	Seedless Vascular Plants	Ch 29: 622-628
	Lab:	Bryophytes & Seedless Vascular Plants	
2/23 Th	Lect:	Gymnosperms	Ch 30: 630-637
	Lab:	Types of conifers lecture; Seedless Vascular	
2/28 T	Lect:	Angiosperms; Plant reproduction	Ch 30: 638-647,
	Lab:	Gymnosperms	Ch 38
3/2 Th	Lect:	Plant reproduction cont.; Plant systems	Ch 35: 752-757
	Lab:	Angiosperms, Flowers, Seeds and Fruit	
3/7 T	Lect:	Plant tissues, stems, and roots	Ch 35: 757-768
	Lab:	Angiosperm: Stems, Roots & Leaves; Video: Tissues	
3/8 W	Due:	Online Quiz 4	
3/9 Th	Lect:	Plant Growth – leaves; development; membranes	Ch35: 764-769,
	Lab:	Seed Plant: Stems, Roots & Leaves; Video: "Sexual Encounters..."	Ch7: 124-130
		Begin: Light/Dark Peas: weigh	
3/14 T	Lect:	Plants and water; Transport	Ch 7: 130-139
	Lab:	Begin: Mineral Nutrition©; *Review for Exam 2*	Ch 36
3/16 Th	Lect:	Plant Transport (cont.)	Ch 36: 790-798
	Lab:	*Review for Exam 2*; Plant Light/Dark Peas©	
3/19-26		**Spring Break**	
3/28 T	**Exam**:	***Diversity Lecture Exam #2 and Lab Exam #2***	
3/30 Th	Lect:	Plant Water Relations & Mineral Nutrition	Ch 37
	Lab:	Osmosis and Water Potential; summary instructions	

BIOLOGY 2.3

Dates		Tentative Schedule of Topics	Reading (pages)
4/3 M	Due:	Online Quiz 5	
4/4 T	Lect:	Energy, Respiration & Photosynthesis	Ch 9: 162-179,
	Lab:	Conclude: Min. Nutrition③; Scientific Report Introduction	Ch 10: 185-200
4/6 Th	Lect:	Photosynthesis (cont.)	Ch 10: 201-209
	Lab:	Harvest Peas③ ***Patterns work on Mineral Nutrition Report***	
	Due:	***Osmosis & Water Potential Summary by 9:30AM (printed copy)***	
4/11 T	Lect:	Plant Growth and Development, Hormones	Ch 35: 769-777,
	Lab:	Photosynthesis	Ch 39: 836-849
4/13 Th	Lect:	Plant Response Mechanisms	Ch 39: 849-865
	Lab:	***Work on Photosynthesis Summary / Mineral Nutrition Report***	
4/14 Fri	***Due:***	***Sci. Report 1: Mineral Nutrition by 6AM (electronic copy)***	
4/18 T	Lect	Ecology and the Biosphere	Ch 52
	Lab:	Exam 3 Review	
4/20 Th	Lect:	No Lecture – *prep for Exam*	
	Due:	***Photosynthesis Summary by 12:00PM (printed copy)***	
	Lab:	***Exam #3 (Physiology)***	
4/25 T	Lect:	Population Ecology	Ch 53: 1184-1194
	Lab:	Conclude Pt1: Peas Dry Weight, Analysis & Questions	
4/27 Th	Lect:	Population Limiting Factors	Ch 53: 1194-1201
		Field Trip: Vegetation Analysis (11:15-3:00 PM)	
4/28 F	***Due:***	***Rewrite Sci. Report 1: Mineral Nutrition by 6AM (electronic copy)***	
5/2 T	Lect:	Community Ecology	Ch 53: 1201-1207,
	Lab**:**	Finish Lecture; Conclude Pt2: Peas Analysis & Questions	Ch 54: 1208-1220
5/4 Th	Lect:	Community Dynamics	532-535,
	Lab:	Finish Lecture; Vegetation Data Analysis (input data before class)	Ch 54 1221-1225
5/6 Sat	***Due***	***Sci. Report 2: Plant Growth: Light-Dark Peas by 6AM (electronic copy)***	
5/9 T	Lect	& Lab: **Field Trip – Coastal Communities (9:00-3:00 PM)**	
5/11 Th	Lect:	Ecosystems: Energy; Material Cycles	Ch 55
	Lab:	Finish Lecture; Video: "Cadillac Desert Part 4: The Last Oasis;"	
		Lab Write-up: Vegetation Analysis	
5/14Sun	***Due:***	***Vegetation Analysis Write-up by 6AM (electronic copy)***	
5/16 T	Lect:	Ecosystems: Material Cycles	Ch 55
	Lab:	**Field Trip: Inland Communities** (11:15-**3:30** PM)	
5/18 Th	Lect:	Conservation Biology	Ch 56
	Lunch Potluck		
	Lab:	Video: "Genetic Time Bomb;" Lab Clean-up; Review for Final	
5/23 T		**<< ECOLOGY FINAL: 10:00 AM -12:45 PM >>**	
5/25 Th		**<< LAB/CUMMULATIVE FINAL: 10:00 AM -12:45 PM >>**	

LAB BREAKS: Generally, no formal break time will be provided during lab; however, students are welcome to take breaks during lab exercises as needed.

CELL PHONES & COMPUTERS: Students may not use phones for calls or texting, or use the internet during class! You may record lectures. **Turn off cell phones sound** during class! Do not leave lecture to take a call or text! Students who use their computers or phones for internet, use phones for calls or texting, or whose phones make disruptive sounds, will be docked 5 points from their class participation.

BIOLOGY 2.3

ASSIGNMENTS AND POINTS:

Lecture Exams	300 pts	Essay, short answer, fill-in, multiple choice.
Lab Exams	200 pts	Short answer.
Scientific Reports	130 pts	Typed, written report using the scientific method. Tables, charts and graphs will be included. Scientific Report I (group) – *Mineral Nutrition* (60) Scientific Report II – *Plant Growth: Light-Dark Peas* (70)
Lab Summaries	80 pts	*Osmosis and Water Potential* (30); *Photosynthesis* (20); *Vegetation Analysis* (30)
Lab Notebook	40 pts	Labeled Drawings. Diversity I (20); Diversity II (20)
Quizzes	50 pts	Graded online and in class quizzes
Practice Quizzes	30 pts	Lab Exam Review Practice Quizzes (up to 3pt /lab and 5pt exam summary)
Participation	40 pts	Attendance, lab and lecture assignments/participation, other
Final Exam	200 pts	Essay, short answer, fill-in, multiple choice. Includes: Ecology lectures, lab and field trips, and comprehensive (~35%)
Semester Total	1070 points	

GRADES: **A –100 - 90%** (963-1070)
B – 89 - 80% (856-962)
C – 79 - 70% (749-855)
D – 69 - 60% (642-748)

LAB REPORTS AND ASSIGNMENTS: are due as indicated in the schedule above. On the day your paper is due, there will be a 5% penalty for turning in reports or papers after the submission deadline. For each subsequent day, reports turned in after the submission deadline will receive a 10% penalty. A Turnitin copy is due at the same time as the hard or electronic copy (the late penalty applies to both)!

EXAMS: Makeup lecture exams will only be given if a call is received before the exam is given. You may arrange to take a lecture exam in advance (adequate notice must be given). No makeup lab exams will be given. If you miss an exam for ANY reason you will receive a zero for that exam.

If you are having problems keeping up with class, for any reason, please come to see me before you get too far behind!

EXAM RETURN POLICY: It is the policy of the Life Sciences department to not return exams to students. Exams will be available for review after they are graded in a manner determined by each individual instructor. No copies of the exam in any form are allowed (e.g., written, photographic, or photocopied). If a student has any questions or concerns about a specific exam or grade, they must make an appointment to discuss the exam with their instructor within two weeks of the date the exam grades are made available. After final course grades are posted in the student portal, students have two months to request an appointment with their instructor to review any and all exams for the previous semester, and request a re-evaluation of their grade. After this time exams will be shredded.

ATTENDANCE: Required. Missing class, tardiness, taking repeated lecture breaks, or leaving class early will affect your attendance grade. Do not schedule appointments during lecture or laboratory time. Call or e-mail if you cannot attend due to illness or other emergency. Repeated occurrences will result in your being dropped (excessive absence is defined as greater than 10% of class time).

STUDENT CONDUCT: We will conduct ourselves in a manner which reflects our awareness of common standards of decency and the rights of others. All students are expected to know the Student Conduct Code (Policy 8.2.8, Procedure 8.2.8P, also see http://www.santarosa.edu/for_students/rules-regulations/scs/section1.shtml) and adhere to it in this class. Students who violate the code may be suspended from 2 classes and referred to Vice President of Student Services for discipline.

ACADEMIC INTEGRITY: Students caught cheating, plagiarizing, falsifying attendance records, or violating testing procedures will be penalized and will not receive credit for their assignment. Anyone who assists someone else in violating the conduct code will also be penalized. Such violations will result in an academic integrity report and they may result in disciplinary action that could result in a two class suspension and in cases of egregious violation referral to the Vice President of Student Services for discipline sanction. Although you can discuss class assignments, what you turn in must be entirely your own work! Please read the college policy/procedure on academic integrity at: http://www.santarosa.edu/polman/3acadpro/3.11P.pdf.

RESPECT: The best way to learn is through active participation; therefore, we respect others: by being on-time, listening actively when others speak, and by being polite even when we disagree with another's viewpoint. Students should avoid dominating discussions or making excessive commentary and/or asking tangential questions that would be more appropriate for office hour discussions.

SPECIAL CONSIDERATIONS: If you have any special needs or concerns please do not hesitate to let me know. We will be working in a hands-on environment and in the field; therefore challenges may arise that are not associated with a lecture class. During labs crowded conditions and possible physical contact may occur. Field trips may include short strenuous hiking and going off trail. Please let me know if this makes you uncomfortable.

EMERGENCY EVACUATION PLAN: In the event of an emergency during class that requires evacuation of the building, please leave the class immediately, but calmly. Our class will meet on the lawn between Baker, Beck, and Shuhaw Halls to make sure everyone got out of the building safely and to receive further instructions. If you are a student with a disability who may need assistance in an evacuation, please see me privately as soon as possible so we can discuss an evacuation plan. Campus Emergency Guidance is available at: http://www.santarosa.edu/administration/college-safety/emergency-preparedness/
To report an emergency on campus CALL CAMPUS POLICE AT 527-1000. Do not call 911.

STUDENT SUPPORT SERVICES: SRJC offers many excellent student support services that may be helpful to you.

Student Health Services	Race Building, Room 4017 – (707) 527-4445 Includes both medical and psychological services. Student Psychological Services offers free counseling.
Academic Services include	
Tutorial Services (free):	Tutorial Center – Doyle Library, Room 4251 – (707) 521-6903; MESA – Bertolini Student Services Center, Room 4832 – (707) 521-7909
Writing Center:	1629 Emeritus Hall, Santa Rosa – (707) 527-4351
College Skills Lab:	Analy Village, Room 601 – (707) 527-4834
Adult Reentry Services:	Bertolini Student Center, 2nd floor – (707) 527-4375
Disability Resources	Analy Village on Santa Rosa campus, Building C, Room 637 – (707) 527-4278 Petaluma Village on the Petaluma Campus

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES: If you need disability related accommodations for this class, such as a note taker, test taking services, special furniture, use of service animal, etc., please provide the Authorization for Academic Accommodations (AAA letter) from the Disability Resources Department (DRD) to me as soon as possible. You may also speak with me privately during office hours about your accommodations. If you have not received authorization from DRD, it is recommended that you contact them directly. For more information visit: http://online.santarosa.edu/presentation/?4928

WHY STUDENTS THINK THEY UNDERSTAND WHEN THEY DON'T

Excerpted from Daniel T. Willingham, Associate Professor of cognitive psychology and neuroscience, Univ. of Virginia.

How do you know that you know something?

Have you ever thought that you knew how to get to a destination, but realized when trying to explain to someone else how to get there that while the route is familiar you don't know enough detail about the actual street names/turns etc. to explain clearly? Similarly, students may be certain that they have mastered the material yet perform poorly on the test. Research has shown that there are certain aspects of cognition that can fool us into thinking that we know more than we do.

Familiarity versus Recollection

- Recollection is having information about a subject stored in your memory that you can actually provide if asked.
- Familiarity is having heard something about the subject, but having little information actually associated with it in your memory. It can make you feel as if you know something when you really don't. For example you may be able to recognize key words in a question, but not be able to use that word in a sentence of your own.
- Partial Access to Information is when you know something about the material and are fooled into thinking that you know everything required. This can lead to you diverting your attention elsewhere. Feeling that you know something is a problem if you have the feeling without the knowing!

Rule for Success or How to Avoid These Pitfalls:

1. Read assigned pages before you come to class. This will help you understand and keep up in lecture. Attend every class and stay through the end of the period. Be alert and take good notes.
2. **As soon as possible after every class review and organize your notes** and make extra notes from your reading. Study for understanding concepts, not just memorization of facts. Review vocabulary terms and write definitions of those that are unfamiliar. The unfamiliar ones you know you need to look up, but can you really define the familiar terms? Write down any questions you have on the class material that day. Try to answer your own questions if you can, using the textbook or support materials. If you can't find the answers save the questions to ask the instructor or classmate.
3. **Use the class study guide**, which includes learning objectives/questions for each topic. The practice questions tell you what you are expected to know for the midterms. After each class, use lecture notes and the textbook to answer all the questions to summarize the information. **DO NOT leave this until the weekend or night before the midterm**! Having a regular study partner or group can be very helpful; that way you can work through the questions together and compare notes. Before taking the exam be sure to practice answering study guide questions in the style they will occur on the exam.
4. **Look for the deeper meaning/context of material.** Try to link new topics with previous ones. Fill out study tables. Look for patterns that may emerge. How do concepts tie together? Draw "big picture" diagrams or concept maps to show the linkages.
5. **Test yourself with a study partner**. Ask questions of each other. **If you say: "I know it, but I can't explain it," then you don't know it. "Knowing" is the ability to explain to others, not the ability to understand when others explain to you.**
6. **Use the lab manual:** the manual contains material you should learn and questions to help you comprehend the material. Lab material directly complements and adds to lecture material and will be examined in lab quizzes and lab exams. Extra time in lab may also be needed to review slides and other materials.
7. **Use other resources**: use your class online resources, practice using online lab quizzes, YouTube videos, Google images and other web-related materials. If you have a new textbook you have an Access code to the Mastering Biology website, which has practice tests, animations, videos, MP3 mini lectures, etc. If you find something especially helpful, please share your discovery with your classmates and me.
8. **Be an active learner:** if you do not understand a concept, make a concerted effort to overcome the obstacle. Ask questions. You can ask in class, or ask your study partners, or visit me in my office hours. Gather more information: if your textbook is unhelpful, try the internet.

Above all, be determined to do your very best in this class!