

Syllabus - Fall 2010
ARSC 1420: SASC EBIO Biology Coseminar
Instructor: John Mischler (email: John.Mischler@colorado.edu)

Sections:

760 T/R 4:30-5:45 WLRD 306

761 T/R 5:45-7:00 WLRD 306

Office Hours:

Please contact me via email for any help outside of class and we can arrange a time and meeting place. Most appointments will require at least one day's notice. It is important that you interact with me on a regular basis. Do not be afraid to ask questions or set up appointments. It is my job to make sure you have the tools to drive your learning. Please offer feedback if you feel the course is not obtaining its objectives.

Required Materials: You need to bring all materials that are necessary for you to learn effectively. You must bring lecture notes, writing utensils, and a notebook to every class. Your textbook is optional but is a good reference.

Course Prerequisites: Concurrent enrolment in EBIO 1210

Course Philosophy: This course is as much about learning how to learn biology as it is about biology itself. I hope that the skills you develop in this course will help you to learn effectively in future courses. In this course we will use formative assessment techniques rather than the more common summative assessments you are used to (an example of a summative assessment is a mid-term in which you are asked to prove your knowledge). Formative assessments (like frequent quizzes and group discussion) produce immediate feedback which we can then use to adapt my teaching to meet your needs. This feedback helps you to take control of your own learning so that we are discussing what you actually need to know in class rather than concepts you have already mastered. We will utilise collaborative learning techniques (group work and discussions, concept maps, quizzes, and other means) to achieve learning. While I will lecture when necessary, this will not be a common instructional tool. Instead we will build learning communities within the classroom and much of the instruction will be peer-facilitated. We will be focusing on conceptual understanding of biological processes and phenomenon (not memorization of terms) and therefore you should be ready to ask questions that will help you understand and internalize concepts. Just showing up to class will be a waste of your time. In order for this to be an enriching and productive experience, interaction and excitement are required.

Course Content: This course is designed to aid students ranging from pre-health and biology majors to other majors who require a science class to fulfill university requirements. We will cover biological processes on the molecular/cellular level and how these processes affect human health and energy production as well as genetics and evolution (with current issues discussed). Students should be able to think critically about these topics and should understand concepts at a sufficiently high level as to become part of the students' working knowledge.

Classroom Behaviour: In the classroom we will operate by love and respect. We will respect each person's right to learn and will not interfere with their learning. We will be considerate of all members of the learning community and will cease any behaviours that have been identified as disruptive to the group as a whole. If students fail to operate by love and respect a strict set of rules will be implemented instead.

Grading: In this course your work will be evaluated on a letter grade system (A \geq 90%,B \geq 80%,C \geq 70%,D \geq 60%,F $<$ 60%).

Daily Quizzes/Worksheets = 30% of total grade

(Every day you will be given either a quiz or a worksheet. Sometimes the quizzes will be collaborative and sometimes you must complete them on your own without your notes. The worksheets will always be collaborative and will be completed in class with your learning community. You will be able to drop 4 of your worst quizzes, worksheets, or a combination of the two.)

Participation and Attendance = 30% of total grade

(Participation is very important in this course, and as such, weighs heavily into your final grade. I will be noting how active you are in group discussions, how engaged you are in doing effort-graded work, and will check your notes at the beginning of some classes [dates of note checks will be chosen randomly so bring your notes every day])

Class Presentation = 40% of total grade

(Each learning community will select a topic from the course and present it to the rest of the class. Groups, topics, and a grading rubric for these presentations will be determined later on in the course)

General Schedule of Course Topics from EBIO 1210 (subject to change)
WE WILL BE INTENTIONALLY FOLLOWING ABOUT 2 LECTURES BEHIND EBIO 1210:

Aug 24 (T) Introduction; Course/exam logistics; Course topics

Aug 26 (R) Water and its unique role for life

Aug 31 (T) Macromolecules; Carbohydrates (Principles; Classes; Problems with HFCS)

Sept 2 (R) Carbohydrates (Good and bad carbs in nutrition; Carbohydrates as biofuels)
 Sept 7 (T) Finish carbohydrates; Lipids (Intro; Good and bad fats in nutrition)
 Sept 9 (R) Lipids (Classes; Steroids in the news; Cholesterol and health; Biodiesel)
 Sept 14 (T) Nucleic acids and Proteins; From genes to proteins; Links to genetic disease
 Sept 16 (R) Tour of the cell (Structures involved in information flow from nucleus to targets; types of cells)
 Sept 21 (T) Intro to membranes: Structure and function(s)
 Sept 23 (R) Membranes: Different types of membrane transport; Signaling
 Sept 28 (T) Aquaporins (water-transporting proteins); Cellular energy metabolism
 Sept 30 (R) Glycolysis and fermentation; Principles of mitochondrial ATP formation
 Oct 5 (T) Finish mitochondrial ATP formation; Oxidants formed in mitochondria
 Oct 7 (R) Antioxidants; Solar energy capture by producers: Basics of photosynthesis
 Oct 12 (T) Biofuel crops; Comparative overview of photosynthesis and respiration
 Oct 14 (R) What plants do for the planet and for humans; Faculty Course Questionnaires
 Oct 19 (T) Cell division and cell death (Chapter 12)
 Oct 21 (R) Meiosis: where do we get our genes? (Chapter 13)
 Oct 26 (T) Mendelian genetics (Chapter 14)
 Oct 28 (R) Chromosomes and DNA: the stuff of heredity (Chapter 15)
 Nov 2 (T) DNA: the storage molecule of biological information (Chapter 16)
 Nov 4 (R) EXAM REVIEW
 Nov 9 (T) The central dogma: how information becomes life (Chapter 17)
 Nov 11 (R) Gene regulation (Chapter 18)
 Nov 16 (T) Biotechnology: how do we study DNA in the lab? (Chapter 20)
 Nov 18 (R) Biotechnology: medicine, cloning, and GMOs (Chapter 20)
 Nov 22-26 Thanksgiving Break
 Nov 30 (T) NO CLASS
 Dec 2 (R) Evolution (Chapter 22) and Animal development and the origins of new forms (Chapter 47)
 Dec 7 (T) Evolution within populations (Chapter 23)
 Dec 9 (R) EXAM REVIEW

General Policies from the McNeill Program and the University of Colorado:

McNeill Co-Seminars are not tutorials in the sense that they are not organized as ad-hoc help sessions, or homework help sessions. Co-seminars provide supplemental instruction, parallel to semester long courses, intended to support mastery of course content, appropriate learning and problem solving strategies. Co-seminars are student centered and emphasis community collaborative learning.

All student athletes are required to notify me 3 days in advance if they need to miss class due to an athletic contest. The protocol for making up assignments will be determined at that time.

ARSC Co-Seminar Guidelines

The Student Academic Services Center wants you to succeed in your General Biology class. To that end, seminars are arranged for your course. The goal of this seminar is to clarify lecture material. By interacting with the academic specialist and other students from your class, you will better understand the material without adding a significant amount of work to your schedule. It's simply a matter of devoting a couple of hours a week.

Come on a regular basis

These meeting will be of more value if you can come on a regular basis. It takes time for concepts to sink in, and so it's important to stay on top of your work and learn it little by little. People don't learn Biology overnight. If you wait until the week of the exam to study, there's no way you're going to get it all.

Come on time and be prepared

If you're going to be late or need to leave early, just let me know and I will work with you.

Come with questions

Don't be afraid to ask questions. There is no such thing as a stupid question. Sometimes formulating the question is the most difficult part because you don't know exactly what it is that you don't know. It may help to write down a list of questions in your lecture throughout the week and ask them in the co-seminar.

Go to lecture

I am not a substitute for your professor. I am here as extra help, not as a replacement. I do speak with your professors on occasion, but I am not officially connected to your course in any way. I do not know exactly what your exams will cover and I do not know what was said in lecture. I can help you understand the lecture and prepare for your exams. However, it is up to you to go to lecture and obtain the information about what is going to be covered on the next exam.

Schedule time to study

I'm a firm believer in the motto "Learn by doing." It's not enough to attend lecture. You need to make time to review concepts presented in lecture and do practice problems to learn how to apply them. Remember that professors present you with the simplest sample problems in lecture because you are learning a concept for the first time. Exam problems are usually much more difficult and you are expected to be able to "think on your feet."

Student Academic Services Center (SASC)

Rights and Responsibilities of Students: Syllabus Supplement

SASC supports a learning environment in which all people are valued and feel safe to pursue their education in the most supportive environment possible. All of us are charged with the responsibility of creating and preserving this environment. This document is provided to you so you can be aware of your rights and responsibilities in relation to issues of harassment, physical and learning disabilities, religious observance and the honor code. A list of academic coordinators and a list of on-campus resources, which have staff that are trained in these policies and who can answer questions about them, is provided at the end of this supplement. More detailed explanations of these policies are also available from McNeill Academic Program (MAP) coordinators.

Sexual Harassment, Ethnic Intimidation and other Hostile Environment Issues

The University of Colorado at Boulder policy on Discrimination and Harassment, the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships apply to all students, staff and faculty. Any student, staff or faculty member who believes s/he has been the subject of discrimination or harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation, or veteran status should contact the Office of Discrimination and Harassment (ODH) at 303-492-2127 or the Office of Judicial Affairs at 303-492-5550. Information about the ODH, the above referenced policies and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at <http://www.colorado.edu/odh>

Accommodations for People with Disabilities

If you qualify for accommodations because of a disability, please submit to me a letter from Disability Services in a timely manner so that your needs be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, and <http://www.colorado.edu/disabilityservices>

Disability Services' letters for students with disabilities indicate legally mandated reasonable accommodations. The syllabus statements and answers to Frequently Asked Questions can be found at <http://www.colorado.edu/disabilityservices>

Religious Observance/Cultural Holidays

Campus policy regarding religious observances requires that faculty make every effort to deal reasonably and fairly with all students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. See full details at http://www.colorado.edu/policies/fac_elig.html

Classroom Behavior

Students and faculty each have responsibility for maintaining an appropriate learning environment. Those who fail to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, gender, gender variance, and nationalities. Class rosters are provided to the instructor with the student's legal name. I will gladly honor your request to address you by an alternate name or gender pronoun. Please advise me of this preference early in the semester so that I may make appropriate changes to my records. See policies at <http://www.colorado.edu/policies/classbehavior.html> and at http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

Honor Code

All students of the University of Colorado at Boulder are responsible for knowing and adhering to the academic integrity policy of this institution. Violations of this policy may include: cheating, plagiarism, aid of academic dishonesty, fabrication, lying, bribery, and threatening behavior. All incidents of academic misconduct shall be reported to the Honor Code Council (honor@colorado.edu; 303-725-2273). Students who are found to be in violation of the academic integrity policy will be subject to both academic sanctions from the faculty member and non-academic sanctions (including but not limited to university probation, suspension, or expulsion). Other information on the Honor Code can be found at <http://www.colorado.edu/policies/honor.html> and at <http://www.colorado.edu/academics/honorcode/>

Addressing Issues

Many issues can be resolved by talking directly with the parties involved, and you are encouraged to try to do so first. Additionally, you should see your instructor as a resource and you are encouraged to share your concerns with her or him. If you need other assistance, the following people can either help you or direct you to the right person:

SASC Academic Coordinators
Ken Wilson, Director 2-3726

Susan Smith, McNeill Director 2-2177
Julia Willis, Writing Dir. 2-0259
Angela Buchanan, Writing Instructor 2-6545
Ann Scarritt, Mathematics Dir. 2-1406
Delsie Khadem-Ghaeini, Math Asst. Dir 2-1407
Sophie Low, Post First Year Coord. 2-4430
Loretta Wahl, Academic Transitions Coord. 2-6295
Dan West, ESL/Multilingual Dir. 2-1405

*Please note, only staff members in Victims Assistance, the Ombuds Office and Counseling are allowed to keep reports of harassment and discrimination confidential, all other staff members are required to report.

Additional On-Campus Resources

Counseling and Psychological Services: A Multicultural Center, 492-6766, Willard 134

A diverse staff of counselors, psychologists, and other professionals committed to offering confidential, high-quality individual and group counseling services to CU students free of charge.

The Center for Multicultural Affairs, 303-492-5666, Willard 118

The Center for Multicultural Affairs seeks to promote the academic, personal, and professional success of all students through innovative programs and services. To this end, we aim to uphold the culture of achievement, facilitate individual transformation, embrace the ideals and values of inclusion, respect and social justice and to enable students to take full advantage of their educational opportunities.

Gay Lesbian Bisexual Transgender Resource Center, 303-492-1377, Willard 227

An advocacy office for GLBT students, staff, faculty, and alumni. We provide programs and services targeted towards the GLBT community as well as support the University of Colorado Boulder community in its understanding of GLBT issues and concerns.

Office of Discrimination and Harassment, 492-2127, ARC, 3100 Marine Street, 3rd Floor

The Office of Discrimination and Harassment will address all complaints of discrimination and harassment based upon race, color, national origin, sex, age, disability, religion, sexual orientation or veteran status when the alleged harasser is an employee. If the alleged harasser is a student, the complaint will be addressed by the

Office of Victim Assistance, 303-492-8855, Willard 217-219

A free and confidential advocacy and support office that serves those who are impacted by disruptive/disturbing life events including violent crime, sexual harassment, death, and debilitating accidents.

Ombuds Office, 303-492-3077, Willard 302

Provides informal, impartial, and confidential dispute resolution services for students, staff, and faculty. Assists people with interpersonal misunderstandings or disputes as well as those with concerns about academic or administrative issues.

Raimy Clinic, 303-492-5177, Muenzinger D232

A confidential training and treatment clinic operated by the Department of Psychology. No crisis services; phone for appointment.

Wardenburg Psychological Health and Psychiatry, 303-492-5654, Wardenburg 130

Offers emotional support, a place to talk and voice feelings, distress, or concerns in a confidential setting for individuals and groups.

Women's Resource Center, 303-492-5713, UMC 416

The WRC centralizes information on services, organizations, and events through a variety of resources in a woman-focused place. It provides a safe and comfortable atmosphere for people to gather, build community, network, and gain strength from one another. The WRC is an advocate for social justice across all systems of oppression, for the elimination of violence against women, for equity in education, employment, health care, and opportunity, and for the fulfillment of women's lives.

Off-Campus Resources

Mental Health Center of Boulder County, 303-443-8500, 1333 Iris Avenue

Moving to End Sexual Assault (MESA), 303-443-0400, 2885 Aurora Avenue

Boulder County Safehouse, for issues of domestic violence; Hotline 303-444-2424; Outreach 303-449-8623