Course Syllabus

EBIO 3590: Plants and Society - Spring 2015, 4 credits

Day/Time:	12:30-1:45 TH (lecture), 2:00-4:50 or 6:00-8:50 H (lab)
Room:	1B31 Atlas (lecture); C231 Ramaley (lab)
Instructor:	Dr. Stacey D. Smith (Stacey.D.Smith@colorado.edu) Office: C340 Ramaley (office hours: 2:00-3:30 T) Phone: 402-370-6749 or 303-492-1374
Lab Coordinator:	Dr. Stephanie Mayer (mayer@colorado.edu) Office: Ramaley (office hours: by appointment)
Teaching assistant:	Julia Dupin, Julia.Dupin@colorado.edu Office: C127 Ramaley (office hours: by appointment)
Science Teaching Fellow:	Dr. Gabrielle Katz, Gabrielle.Katz@colorado.edu Office: C177 Ramaley (office hours: by appointment)

Recommended prior courses

EBIO 1210 and EBIO1220 or equivalent

Course Description

The history of humans is deeply intertwined with plants. We depend on them for food, shelter, fuel, medicine, clothing as well as art and music. The course provides an introduction to the biology of plants, the history of their domestication, their current roles in our society and in our ecosystems. We will examine these topics through discussion, writing, reading, brainstorming, lab activities, presentations, and field trips. This course takes a "just-in-time" approach, where we learn content in the context of real world case studies and experiments, and will build your ability to effectively communicate scientific information and perspectives on current issues with writing that is concise, accurate, and interesting!

Course Materials

Book chapters and journal articles will be assigned as reading and will be made available on D2L. Useful reference text: *Economic Botany, Plants In Our World*, 3rd Edition. Simpson, B.B. and Ogorzaly, M.C. McGraw-Hill Higher Education.

Learning Goals

The overarching goal of this course is for students to understand how economic botany works: What are the questions? What kinds of data and techniques are used? How are these data used to test hypotheses? How do the results inform decisions on small and large scales (from what to have for breakfast, to which plants to save from extinction)? With the skills below, students will be prepared to interpret new sources of information about plants and society as technology advances.

1. Extract information from primary and secondary literature
2. Think critically about the strength of evidence supporting scientific hypotheses
3. Summarize arguments surrounding complex issues such as biotechnology
4. Communicate these viewpoints through writing, speaking, and visuals

Assessment: Points for this course are divided among four categories, totaling 600 points.

In-class activities/quizzes (33%):	200
Writing assignments & portfolio (33%)	200
Laboratory activities (33%):	200
Total	600

Total Points	Percent	Grade
564-600	94-100	A
540-563	90-93.9	A-
522-539	87-89.9	B+
504-521	84-86.9	B
480-503	80-83.9	B-
462-479	77-79.9	C+
444-461	74-76.9	C
420-443	70-73.9	C-
402-419	67-69.9	D+
384-401	64-66.9	D
360-383	60-63.9	D-
0-359	Below 59.9	F

In-class activities: There will be 21 in-class activities, each worth 10 points and these may include peer review, solving problems, writing exercises, reading quizzes, or homework. I will drop your lowest score.

Writing assignments and portfolio: Learning to communicate science through writing is a central aim of this course. You will complete three short writing assignments: a press release, a pro/con discussion, and an argumentative perspective piece. In each case, you will submit a complete draft for peer review and revise accordingly. For each assignment, you will turn in your first draft, your peers' reviews, and the final draft. The drafts and the final paper must be submitted to the D2L dropbox by **9am** on the due date (see schedule). ***5% will be deducted for each hour past the deadline***. You will bring two paper copies of your draft to class on peer review day (see schedule). For the portfolio, you will select one of these writings for grading by the instructor, the one which you feel to be the best representation of your work. You will also create a cover letter that explains the development of your writing and your rationale for choosing this piece. A rubric will be provided for each assignment, and all material (drafts and finals) will be scanned for plagiarism against external sources and classmate assignments.

Completion Points:

- Draft writing assignment (3x, 20 points each)
- Peer review (6x, 3 points each) –scan as pdf (free at the library) and upload to D2L dropbox
- Final (revised) writing assignment (3x, 20 point each)

Graded Points:

- Selected piece from portfolio (one of the three writings): 37 points
- Cover letter for portfolio: 25 points

Total = 200 points

Laboratory activities: See lab syllabus for structure.

Extra Credit: I will provide an extra credit activity mid-semester that will be due on 4/21.

Guidelines:

- **Make-up assignments:** If there is a foreseeable event that may cause you to miss class or lab, you must contact the instructors and the TA in advance. Make-up work will only be allowed for documented excusable absences (e.g., illness, death in the family) and must be completed within one week of the original deadline. No credit will be given after this point.
- **Tips for doing well in this class**: Come to all classes and labs; Be prepared by completing the reading; keep an eye on assignment deadlines on the schedule; participate in discussions; work with your peers; take advantage of office hours to get help

	MODULE I: FOOD	Assignments due / Reading
1/13	Introduction; Tools for success	
1/15	Plant structure and function	
Lab	*Plant morphology; Seed planting/propagation*	
1/20	Origins of agriculture: When, where, why	Salamini et al. 2002
1/22	Paper discussion: How agriculture shaped human history	Pinhasi et al. 2005
Lab	*Evolution during domestication: Comparative morphology*	
1/27	Peer Review of Press Releases	Press Release Draft due (500-700 words) **9AM**
1/29	Case studies in archaeobotany and forensic botany	*reading TBA*
Lab	*Forensic botany*	
2/3	Plant breeding in the age of genomics	Final press release due by **9AM**
2/5	Guest lecture: Dr. Patrick Byrne, Colorado State University	*reading TBA*
Lab	*Greenhouse Tour of domesticated plants*	
2/10	Biotechnology and genetic modification	
2/12	Discussion: The GMO debate	*reading TBA*
Lab	*Detection of GMOs and transgenes*	
	MODULE II: MEDICINE	
2/17	Peer Review of Pro/Con	Pro/Con GMO draft due (600-800 words) by **9AM**
2/19	Psychoactivity: Guest lecture Kane	*reading TBA*
Lab	*Movie Day: Shaman's apprentice*	
2/24	Ethnobotany	Final pro/con due by **9AM**
2/26	Pros and cons of bioprospecting	*reading TBA*
Lab	*Conferences: Portfolio development*	
3/3	Nutraceuticals and supplements	
3/5	Paper discussion	*reading TBA*
Lab	*Extraction of plant compounds*	
	MODULE III: Environment	
3/10	Peer Review of Perspectives	Perspectives draft due (800-1000 words) by **9AM**
3/12	Plants and fungi: a intimate history	*reading TBA*
Lab	*Fungal ecology and diversity*	
3/17	Pollination biology	Final perspectives due by **9AM**
3/19	Conservation: Bees & citizen science	*reading TBA*
Lab	*Flowers and pollination*	
	Spring Break	
3/31	Biofuels	
4/2	Case study: Gulf Eutrophication	*reading TBA*
Lab	*Fermentation and ethanol production*	
4/7	Plant physiology: under the hood	Complete portfolio due by **9AM**
4/9	Ecosystem services and phytoremediation	*reading TBA*
Lab	*Plant ecophysiology*	
	MODULE IV: Culture	
4/14	Plant biogeography and culture	*reading TBA*
4/16	Use of plants in musical instruments	
Lab	*Plant anatomy and biomechanics*	
4/21	Plant fibers and dyes	Optional extra credit due by **9AM**
4/23	Pigments, Clothing, Weaving	Excerpt from Buchanan 1999
Lab	*Pigment extraction and dying*	
4/28	Plants as art: ornamentals and bonsai	*reading TBA*
4/30	Plants in art and architecture	
Lab	*Plant art*	

Disability Policy:

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 may be addressed. Disability Services determines accommodations based on documented disabilities. Contact: 303-492-8671, Willard 322, and 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 www.colorado.edu/disabilityservices

Policy on religious observances:

Campus policy regarding religious observances requires that faculty make every effort to reasonably and fairly deal with all students who, because of religious obligations, have conflicts with scheduled activities, assignments or required attendance. If you foresee any conflicts with this class schedule, please see me at the beginning of the semester to make arrangements. See full details at http://www.colorado.edu/policies/fac_relig.html

Classroom Behavior Policy:

Students and faculty each have responsibility for maintaining an appropriate learning environment. Cell phone use is not permitted during class period and laptops/tablets must be used only for classroom related activities (e.g. note-taking). Students using laptops or tablets for other purposes will be asked to leave class and will not receive credit for any in-class activity on that date. Students are expected to participate in all in-class activities and refrain from engaging in any behaviors that detract from the learning of other students (e.g., talking while the instructor or TA is speaking).

Faculty have the professional responsibility to treat all students with understanding, dignity and respect, to guide classroom discussion and to set reasonable limits on the manner in which they and their students express opinions. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with differences of race, culture, religion, politics, sexual orientation, 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 polices at

http://www.colorado.edu/policies/classbehavior.html and at

http://www.colorado.edu/studentaffairs/judicialaffairs/code.html#student_code

Policy on Discrimination and Harassment:

The University of Colorado at Boulder policy on Discrimination and Harassment (http://www.colorado.edu/policies/discrimination.html, the University of Colorado policy on Sexual Harassment and the University of Colorado policy on Amorous Relationships applies 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 and the campus resources available to assist individuals regarding discrimination or harassment can be obtained at http://www.colorado.edu/odh

Student 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/

E-mail Correspondence: I consider e-mails that are exchanged between students and me to be professional correspondence and should be conducted in that manner. I have listed some general tips on how to send a professional e-mail:

1. Salutation: Dear Professor Smith, Dr. Smith, Stacey
2. Body of message: Complete sentences, capitalization, and punctuation
3. Closing: not always necessary but if you are asking for my time, a “thanks” always helps.
4. Sign your name. It isn’t always apparent from e-mail addresses who the message came from.

Hours: You may generally expect a response to your email within 24 hours or the next business day if on a weekend.