

Introduction to Ethnobotany

11:776:205 (3 credits)

Spring (yearly)

Hybrid Format

CONTACT INFORMATION

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COURSE DESCRIPTION

The goal of this course is to introduce students to the fascinating world of the relationships between people and plants. The course offers a unique and multidisciplinary approach that includes plant structure and function, plant diversity, the origins of agriculture, and the uses of plants by peoples around the world. As plants are important to people, the course focuses on how plants affect human health, nutrition and well-being, interact with other organisms, and provide critical support to biodiversity. The course also offers important views on how people damage plants and their habitats, and how the reversion of this trend is important to secure the future of humankind. The course offers exciting insights into groups of economically important plants such as grasses, legumes, and staples, and how plants serve as a source of useful natural products. Students will analyze how different cultures around the world use plants and have different views of the natural environment, and how global issues such as i) climate change can affect food production; and ii) poverty can be mitigated by the use of plants to improve human health and nutrition and generate income opportunities (for example, ethnic vegetables). The course thus provides important examples on the economic importance of plants, and how the study of plants with a focus on medicine, health, and nutrition can shape the future careers of students.

COURSE WEBSITE, RESOURCES AND MATERIALS

- Course website: Canvas. Interactive PowerPoint presentations (that include a combination of text, figures, images, narrated slides, and videos using the Kaltura video platform), as part of the hybrid course format, will be posted to Canvas. Each online lecture will include comprehensive review questions to enhance learning.

- Required text: *Plants and Society*, 7th. Levetin and McMahon, McGraw-Hill (earlier editions will vary in page numbers for assignments and content).
- Additional resources: Non-textbook reading and activities (magazine and newspaper articles, online video, podcasts, etc.), assigned or optional, cover topics related to the analysis and perspective of contemporary issues and will enhance subject understanding and provide context. These resources also serve as a resource list for independent projects.

PRE- or COREQUISITE

01:119:115 General Biology OR 01:119:103 Principles of Biology OR 11:776:242 Plant Science

COURSE LEARNING GOALS (link to Plant Biology Undergraduate Program Goals: (<http://plantbiology.rutgers.edu/undergrad/plantbiology/>))

By the end of this course, the student will be able to:

1. Recognize and describe plant characteristics (plant composition, function, and diversity) and the use of plants by humans (addresses program goal 1, technical proficiency)
2. Study the origins of human-plant relationships to understand the use of plants through history to current day (addresses program goal 2, context)
3. Describe how the use of plants as medicines contribute to human well-being and survival (addresses program goal 3, communication)
4. Analyze global issues and potential solutions from a multidisciplinary perspective using plants, and describe how different societies respond to such issues (addresses program goal 4, critical thinking).

ASSIGNMENTS/RESPONSIBILITIES AND ASSESSMENT

Grading (305 points):

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|---|------------|
| • Online quizzes (14 at 2 points each) | 28 points |
| • In-class exams (3 at 59 points each) | 177 points |
| • Project 1: Ask grandma and grandpa | 20 points |
| • Project 2: Why is it so hard to feed a hungry world? | 20 points |
| • Project 3: Paper on edible ethnic produce | 20 points |
| • Project 4: Weight-loss pill | 20 points |
| • Project 5: Paper on climate change and feeding the planet | 20 points |

Online quizzes and in-class exams will include material assigned from the textbook, additional assigned reading or activities, and lectures.

Class projects:

Five class projects are assigned. These represent independent work and Turnitin will be used to assess text for plagiarism. Points will be taken off for misspellings, wrongly formatted text, sloppiness, and similar mistakes, and all plagiarism will be reported to the Dean. *Significant and constructive participation in class discussions may enhance grades.* Grades are A ($\geq 91\%$); B+ (85-90%); B (80-84%); C (70-79%); D (60-69%). Grades will be posted online so that students can monitor their progress in the class.

Learning goals assessment:

Specific questions on weekly quizzes and review of independent projects will be used to assess student knowledge of all course learning goals, from technical proficiency (course learning goal 1), context (course learning goal 2), and communication of current issues and demonstration of critical thinking (course learning goals 3 and 4). The percentage score on these assessments will determine the level of mastery: >90% outstanding; 80-89% good; 70-70% satisfactory; <69% unsatisfactory.

PARTICIPATION GRADE AND ABSENCE POLICY

This course is a hybrid course, and thus it is expected that students view the entire lecture for each class online as per the schedule. Attendance to all in-class sessions (lectures, review sessions or exams) is mandatory. Laptops are welcome for note-taking, but internet surfing is not permitted. In-class review sessions (Q&A) prior to exams will give students an opportunity to clarify concepts presented online.

Students unable to attend may contact the instructor via e-mail prior to the missed class or may use the University absence reporting website (<https://sims.rutgers.edu/ssra/>) to indicate the date and reason for the absence. An e-mail is automatically sent to the instructor.

COURSE SCHEDULE

Week	Unit	Topic	Reading
1	Unit 1: Introduction to Ethnobotany	In-class: Course expectations, academic integrity; Introduction to ethnobotany, an interdisciplinary perspective Independent project 1: Culture and the uses of plants (Ask Grandma and Grandpa) Online: Plant life and botanical principles; The plant cell and plant body Online: Culture and the uses of plants: ethnobotany in Liberia Week 1 online quiz	Chapter 1 Chapters 2, 3
2	Unit 2: Back to basics: plant anatomy Genetics, evolution, and diversity of plant life	Online: Plant physiology Online: Plant diversity and traditional botanical knowledge Week 2 online quiz	Chapters 4, 5
3	Unit 2 (continued) Plant anatomy and physiology Diversity of plant life and uses	In class: Genetics, systematics, and evolution In class: Visit to Rutgers greenhouses Independent project 2: Feeding people in a changing world Online: Supermarket botany and plant use that is based on ethnicity Week 3 online quiz Deadline: Project 1 due	

Week	Unit	Topic	Reading
4	Unit 3: Plants as a source of food	Online: Human nutrition Online: Origin of agriculture Week 4 online quiz	Chapter 10 Chapter 11
5	Unit 3 (continued)	In-class: Grasses; review In-class: Exam I Online: Legumes and starchy staples Week 5 online quiz Deadline: Project 2 due	Chapter 12 Chapters 13, 14
6	Unit 4: Commercial products derived from plants	Online: Materials: cloth, wood, and paper Online: Stimulating beverages Week 6 online quiz	Chapter 18 Chapter 16
7	Unit 4 (continued)	In-class: The spice trade and world discovery Independent project 3: Edible ethnic plant produce for nutrition and economic development Online: Fats and edible and aromatic oils Week 7 online quiz	Chapter 17
8	Unit 3 Plants as a source of food (continued from above) Unit 4 Commercial products derived from plants (continued from above)	Online: Global issues I. Plants, poverty, and economic development; case studies on edible ethnic produce Online: Hemp and marijuana (THC and CBD) and psychoactive plants Week 8 online quiz	Chapter 20
9		Spring recess	
10	Unit 4 (continued)	In-class: Chocolate and cacao; review In-class: Exam II Independent project 4: Safety and contents of weight pills Week 9 online quiz Deadline: Project 3 due	Chapter 16
11	Unit 5: Plants and human health	Online: Medicinal and poisonous plants Online: Sustainability of natural ecosystems and importance for human life and sustenance Week 10 online quiz	Chapters 19 to 21 Chapters 9, 26
12	Unit 5 (continued)	In-class: Global bioexploration in Namibia (2 lectures) Independent project 5: Climate change affecting food production Week 11 online quiz	

Week	Unit	Topic	Reading
13	Unit 6: The impact of algae and fungi in human affairs	Online: Fungi in natural environments and their uses Online: Insecticides and pesticides from plants Week 12 online quiz Deadline: Project 4 due	Chapters 22, 23
14	Unit 6 (continued)	Online: Algae and biofuels Week 13 online quiz	Chapter 22
15	Unit 5. Plants and human health (continued from above)	Online: Global Issues II. Plants and the environment: climate change and feeding the planet Online: Modern medicines and herbs Week 14 online quiz Deadline: Project 5 due In-class: Review	Chapters 18 to 26
Final exam (Exam III, not cumulative, date to be determined)			

FINAL EXAM/PAPER DATE AND TIME

The final exam (Exam III) is not cumulative and covers the last third of the course. The Online Final exam Schedule: <http://finalexams.rutgers.edu/>

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/registration-form>. Full policies and procedures are at <https://ods.rutgers.edu/>

ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at <http://academicintegrity.rutgers.edu/>

The principles of academic integrity require that a student:

- Properly acknowledge and cite all use of the ideas, results, or words of others.
- Properly acknowledge all contributors to a given piece of work.
- Make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- Obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- Treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- Uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that:

- Everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.

- All student work is fairly evaluated and no student has an inappropriate advantage over others.
- The academic and ethical development of all students is fostered.
- The reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

STUDENT WELLNESS SERVICES

Just In Case Web App <http://codu.co/cee05e>

Access helpful mental health information and resources for yourself or a friend in a mental health crisis on your smartphone or tablet and easily contact CAPS or RUPD.

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901 / www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

Scarlet Listeners

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.