

MEDICINAL PLANTS AND HERBS
BOTANY 4000

I. General Information

Professor: Dr. Stuart Wooley
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Course webpage: Blackboard Botany 4000 page.

- **Required Reading:**
 - S. Singh and E. Ernst. 2008. *Trick or Treatment: The Undeniable Facts about Alternative Medicine*. Norton & Company.
We will read all of this book. Many of assignments will come from this book.
- Online posts of reading material.

II. Course Description

Botany 4000 counts as an upper-division GE (F1 and G) course. Therefore, you must have completed at least 60 credit hours to receive GE credit for this course. That is a University requirement. If you are a Biology major you cannot receive GE credit for this course.

Important: If you are a biology major who began your school career **before Fall 2009**, you **can** receive upper-division elective credit for this course. If you are a biology major and started your schooling during or after Fall 2009 this class **will not count** for you towards graduation.

The primary objective of this course is to improve students understanding of science. This is done by surveying how science is used in mainstream medicine and alternative therapies. We will then focus on the uses and effects of medicinal plants, including herbal supplements, on people, their cultures or societies. Students will learn how different cultures perceive diseases and then utilize plants to treat them. Currently medicinal plant usage is quite common, but how that use of medicinal plants is perceived depends on the society where they are used. Finally, because all plants with bioactive compounds can't always be regulated, throughout the course students will learn how to evaluate claims made of specific plants and herbal supplements and will learn where to find reliable information about those plants and products.

Disclaimer

This course is not intended to be a medical or nursing course. Neither is this course intended to diagnose, help diagnose or teach students to become medical practitioners. This course is intended to help students understand concepts of medicinal plant usage by different cultures, issues in the use of herbal supplements and cautions against recreational usage of medicinal plants. Guidance for health or medical issues should be sought from licensed medical professionals.

Medicinal plants & herbs have had a rich history. As such, a tremendous amount of folklore, local practice, tradition, and myth have built up over the last 5000+ years. This class aims to bring a **scientific eye** to the study of medicinal plants and herbs. Because of this, disagreements almost certainly will arise and deep-set ideas may even be challenged. However, all students and

instructor(s) must demonstrate respect for the ideas and towards the individuals expressing those ideas. Of course that respect must flow both ways. In the end, this is a science class aimed at discovering the truth.

III. Course Objectives

Learning Outcomes

Students will

- identify by name and understand the effects of plant chemical constituents on humans
- be able to clearly and logically articulate ideas in writing and orally
- distinguish which sources contain reliable scientific information about medicinal plants and herbal supplements at the library or on the internet
- demonstrate understanding of the importance of medicinal plants among different cultures through clear, logical writing
- demonstrate how different cultures approach plant use in different ways and how plants and people interact.
- be able to logically and clearly defend a position

GE Goals

This course will address GE Goals 1-5 and meet the Multicultural requirements as follows:

1. **Subject Knowledge** This course by design is a comprehensive overview of the basic principles and methodologies of science using the medium of alternative therapies and medicinal plants. Numerous cultures and peoples use medicinal plants differently. As such the course strives to help students understand some of the perspectives of medicinal plants held by different cultures, including current North American culture.
2. **Communication** As part of their grade, students will be required to conduct personal research and write papers on alternative therapies, including medicinal plants or herbal supplements (“Botanicals”).
3. **Information Retrieval and Evaluation** This specific goal is a major reason to teach this course as a GE course and not solely as a majors-only course. Information about alternative therapies, including medicinal plants herbal supplements, abounds on the internet and other places. Besides being an underlying theme of the course, an entire unit will be dedicated to helping students learn to recognize reliable sources of information and where to go to find additional reliable information.
4. **Interdisciplinary Relationships** Plants and people have been inextricably connected since the beginning of humanity. Students will report on interactions of plants with medicine, chemistry, anthropology, religion, society and politics.
5. **Inquiry and Critical Thinking** The use of some medicinal plants is held sacred by certain cultures (e.g., Native American Church). That use has been (some still is) illegal in the US. Students will have several opportunities to discuss the implications and complexity of regulating and using plants for medico-religious purposes. Students will be required to write on this topic as well as other topics (see goal 2 & 4) and critically evaluate arguments for and against government regulation.
6. **Multicultural Perspectives** 1. The course is intended to cover medicinal plant usage among many cultures. 2. Students will learn in-depth about differences between cultures’

perceptions of disease and practices to cure or treat diseases. 3. Students will also learn basic ethnobotanical practices so they can effectively discover information on their own. **Social Responsibility** In recent times, the use of a number of plants has been determined illegal by governments. Moreover, some psychoactive plants that have enjoyed use by indigenous peoples can be dangerous and so have also been declared illegal. Students will have the opportunity to learn about and discuss the complex issues surrounding the use of those and other plants.

IV. Course Requirements

This course is a science course. We will cover chemistry, biology, botany, as well as anthropology, politics and popular culture. You will be required to learn scientific plant names, chemical names and some human physiology. In addition, you will learn about the nature of science and how modern science is practiced.

A. Assignments

Students will be assessed on weekly assignments that will be posted at least one week ahead of time. Deadlines will be the same days each week. All assignments will be posted via Blackboard.

Late Policy: Because you will have an at least one full week to turn in material, late material will be reduced by 20% for each day late. That means that by 3 days late, the best you can receive is 60% for the assignment.

Assignments must be turned through the proper way. Instructions will be on the Blackboard page. Only assignments turned in the appropriate way will be accepted. Because an online class may be new for you, I will give you a grace period of two weeks for the first assignment. After that first grace period in the first 2 weeks of the class, the late policy will be in effect.

Syllabus: You need to read the syllabus and be familiar with it. An exercise to understand the syllabus will be required the first week. It will be worth 20 points.

Reading: Reading the text will be assessed by providing questions for students to answer during the reading. Reading assignments are variable points because the amount of reading required each week is variable. For each reading assignment, turn in the assigned questions for about 20 points (14 weeks * 20 pts = 280 reading points)

B. Make up Work

You are responsible for your own work. If something serious happens to you during the semester, I will need some documentation (electronic) about that. Usually you will have 1 week to make up any work. These will be determined on a case-by-case basis.

C. Webpages (100 pts; about 1/3 of your grade)

Each student (if you know people you can work in a group of up to 3 students) will be required to produce a webpage. This webpage format is like that of a research paper in that it will require reliable references from scientific sources. Your reports will be placed on a wiki located at www.medicalbotany2011.pbworks.com. The content produced by the class will eventually be made public, so the information **must be** well-researched,

accurate, referenced, scientifically-based, and well-written. A secondary goal of this work is to produce a reliable, on-line medicinal plant database that will be publicly available and added to/edited by future classes. By participating in the online project, you are consenting to have your work displayed publicly on the website and/or edited for content, accuracy or clarity by future students

Your article must be posted beginning on Friday, March 2. Beginning then, class members will be able to provide editorial, graphic or layout suggestions for each article. Students are **required** to comment/suggest on other students work at least 5 times beginning March 3, and **before** April 1. Comments must be **substantive** to receive credit. For example, you could suggest corrections, changes in organization, highlight inaccuracies, suggest valid websites for additional information, etc. that will improve the article in a significant way—highlighting misspellings does not count as a “substantive” suggestion. Comments that improve article flow, article organization, point out factual errors (with references) or correct factual errors (with references) are considered “substantive.” “Great webpage, I like the pictures” is not substantive. Comments will count 25 points toward your grade (5 points/substantive comment).

Once students receive comments on their page, students can edit their own page based on the feedback from fellow students. Almost certainly, they are helping you get a better grade, if you follow the suggestion. A completed page is due by May 1. At that time, I will remove your ability to edit your page and will begin grading the webpages.

***The information on your wiki

1. **Must be referenced** (internal footnotes make for the easiest reading).
2. References **must be reliable** (see below). Websites in general are not appropriate sources of information, esp. if they end in .com and sometimes if they end in .org.
3. Because you are not conducting the study, **you have to reference** any information on your page. Otherwise it is plagiarism. **Cutting and pasting is not doing research, and your grade will suffer.**
4. References in the text should be either footnotes³ or internal citations (Johnson et al, 2001), “Jones (2001) showed that...”.
5. The simplest way to make the page is to write out the text in Word or some other program. Then paste the text, with references into the wiki page. Pictures can be easily pasted into the webpage using the editor.

Possible Resources

The US Pharmacopeia: <http://naturaldatabase.therapeuticresearch.com/home.aspx?cs=&s=NDs>

The national Center for Complementary and Alternative Medicine: <http://nccam.nih.gov/>

American Botanical Council: abc.herbalgram.org

Medicinal Plants of the Southwest: <http://medplant.nmsu.edu/>

Cherokee Pharmacopeia: <http://www.aanativearts.com/cherokee/cherokee-pharmacopoeia.htm>

Green Medicine from the Medicinal Plant Working Group at the National Park Service.

<http://www.nps.gov/plants/medicinal/plants.htm>

Library has numerous books. Search for “medicinal plants” and you will find many books.

Journals

Journal of Ethnopharmacology

Phytochemistry

Economic Botany

HerbalGram (not really a journal, although ostensibly peer-reviewed)...you also have to be a member of the American Botanical Society to have access to it.

Botanical.com The complete text of *A Modern Herbal* published in England in 1931. Contains a huge amount of information about various (European) plants.

D. Online lectures

I will post lectures online that you can watch at your leisure. I will post two lectures a week for you to watch. Each lecture is accompanied by questions to find the answers during the lecture.

V. Grading

Grade Calculations Grades are based on the percentage of points earned.

A	93-100%	A-	90-93%		
B+	87-90%	B	83-87%	B-	80-83%
C+	77-80%	C	73-77%	C-	70-73%
D+	67-70%	D	63-67%	D-	60-63%
F	0-60%				

If you take the credit/no credit option: CR 70-100% NC 0-70%

Options: University policy states that census date is the last day to choose CR/NC. It is also the last day to drop the course. Instructors can extend the time. Therefore, **February 29** is the **last day** you may change your grading option (CR/NC). I will strictly follow the grading option indicated on the final grade sheet supplied by Admissions and Records. Consult with your advisor before making your decision. Grades will **not** be changed once they have been submitted. **In short, choose wisely, and if you choose CR, I won't change the grade to a NC later if you don't do as well as you hoped.**

NOTE: Changing your grade in the last 4 weeks of the term is very difficult, especially if you have already earned nearly 80% of your grade. Please keep up on your grades so you can make adjustments as needed. I will grade material in a timely manner so you can know exactly your grade and *you can calculate your own grade*. Then, you can make adjustments in your study to do better and/or talk with me if you need help.

VI. Learning Environment and Citizenship

Teaching philosophy

Professor

I will strive to make sure you have all the information necessary to know what you need to do and when you need to do it.

I will respond respectfully to your queries as soon as I can.

I will not give you assignments or homework just so you have something to do.

Students

I expect students to actively participate and to do the work.

I expect students for an online class to be self-motivated to do the work.

I expect students respect the rights of others and to provide positive, helpful criticism.

I expect honesty from the students.

Cheating is “submitting an in-class assignment for a student who is not present or submitting work that is not your own, but claiming that it is your own original work.”

Lying is “communication with intent to deceive” and cheating falls into that category.

Study skills

Assignments will be due the same day each week. Saturday night by 10 pm. Plan your schedule to check the course webpage to make sure that you have completed the assignment and posted it at the appropriate location. You should check the course webpage at least once per day.

VII. Communication with the Instructor

I am out of the country for the semester. As such, electronic communication is the main means of contacting me. I generally won't respond to email questions about the class via email to a single student. Instead, I will communicate with students via the Blackboard discussion boards. Please if you have questions post your question at the Discussion board question thread. I will answer there so all students can find out.

VIII. Schedule

The schedule may change. Material to read, watch, and listen to will be posted online on the course Blackboard page with about 1 week to complete the assignments. Assignments become available on Monday morning early. Due dates for homework are usually on Saturday night about 10 pm.