

ALLEGANY COLLEGE OF MARYLAND
Cumberland, Maryland
Biology 150
Medicinal Botany
Fall 2007
COURSE SYLLABUS

(This is subject to modification by the Professor)

I. GENERAL INFORMATION

- A. Course: Biology 150 - Medicinal Botany
- B. Textbooks and Manuals
 - 1. Evidence-Based Herbal Medicine by Michael Rotblatt And Irwin Ziment, Hanley and Belfus, Inc. Medical Publishers, 2002.
 - 2. Eastern/Central Medicinal Plants (The Peterson Field Guide Series) by Steven Foster and James A. Duke, Houghton Mifflin Company.
 - 3. Mosby's Handbook of Herbs & Natural Supplements by Linda Skidmore Roth, Mosby, Third Edition. 2006.
- C. Lecture and Laboratory Professor: Dr. James A. Howell (Full-time faculty).
- D. Class lectures meet from 10:00 to 11:50 a.m. on Thursday in room S-25 and Laboratory meets Tuesday from 8:00 to 10:30 a.m. in room S-25.
- E. Faculty office: Room S-52, Science Building.
- F. Faculty Office Hours: Monday and Wednesday, 12:00-1:00 p.m. and Friday 10:00-11:00 a.m. Additional times may be arranged by contacting Ms. Roberta Mills, the Science Division Faculty Secretary, in Room S-50.
- G. Phone Numbers: Office.....301-784-5251
E-mail.....jhowell@allegany.edu

II. PURPOSE

- A. Purpose of Course

This course is designed primarily for allied health professionals who want to expand their knowledge of holistic health care practices. Topics will include the history of medicinal plants, plant anatomy and function, phytochemicals, species identification; plant cultivation, sources of information, and safe practices. In addition to lectures the student will spend time in the laboratory, greenhouse, and field. Students may meet at times other than regularly scheduled class-times.
- B. OBJECTIVES
 - 1. To introduce a basic history of medicinal plants, with examples of plants used by various cultures.
 - 2. To present a basic knowledge of plant anatomy and function.

3. To introduce phytochemicals and their importance, with selected plant species.
4. To introduce species identification techniques to enhance plant and thus herbal identification.
5. To introduce basic cultivation techniques.
6. To introduce research sources such as the German Commission E Monographs which will allow students to investigate herbs, their uses, and contraindications.
7. To introduce safe practices in medicinal botany.

III. COURSE POLICIES

A. Attendance

1. To attend lecture and laboratory classes regularly.
2. Academic Regulations Policy on Attendance
 - a. Students are required to attend every class session, except in cases of an emergency or illness.
 - b. Students usually cannot make up absences; however, permission to make up absences will be granted only at the instructor's discretion.
 - c. STUDENTS MUST NOTIFY THEIR INSTRUCTORS AS TO THE REASONS FOR AN ABSENCE from a class session. The instructor may require such evidence as he sees fit to justify an absence. Unexcused absences may adversely affect a student's grade in the course.
 - d. When a student's absences endanger his/her progress in a course in the judgment of the instructor, the instructor may drop the student from the class roster.
 - e. If an instructor does not appear in class within ten minutes after the scheduled starting time, representatives of the class should attempt to locate the instructor by visiting his/her office and the faculty secretary in room S-50. If students cannot locate the instructor by these means, students may consider the class session canceled.

3. Attendance policy as listed in the Allegany College of Maryland Catalog

When the number of student absences is such that the instructor believes that the student cannot successfully complete the course in the time remaining, the instructor may drop the student from the class roll. If the student is dropped after the tenth week of the course, a grade of "F" will be recorded. If the student has registered in an audit status, a grade of "W" will be recorded.

B. PARTICIPATION

1. To read all assignments in advance and be able to take part in classroom discussions.
2. To take legible notes.
3. To be able to use all scientific terms, laws, principles, and theories, both oral and written, with correct spelling.
4. To locate and read all outside assignments suggested during class.
5. To complete and record the required information for all laboratory exercises.
6. To satisfactorily obtain the assigned information and to apply it to everyday happenings.
7. Some labs may require the student to come in at times other than the regularly scheduled time.

C. Student Evaluation

1. Mid-semester grades will be computed on the following basis:
 - A. Lecture Average - 60%
 - B. Laboratory Average - 40%
2. Final grades will be computed on the following basis:
 - A. Lecture Average - 60%
 - B. Laboratory Average - 40%
3. The final lecture average will be based on two tests and one project/paper equal in value to a lecture test.
4. The final laboratory average will be based on two tests, with some parts practical in nature, and one major project.

D. Grading Scale

1. A = 90-100
2. B = 80-89
3. C = 70-79
4. D = 60-69
5. F = 59 and below

E. Extra Credit

Extra credit will be discussed during the first class.

F. Tutoring and/or Extra Help Sessions

1. The professor will aid the students in obtaining tutoring service. This may be initiated by either the professor or student. There is a \$10.00 application fee per semester.
2. Tutoring services are provided free of charge (except for the \$10 application fee) to those students who are having difficulty with their course work. Students who desire to be helped/tutored should go to the Coordinator of Testing and Tutoring in the Humanities Building, rooms H-22 and H-23 to make arrangements.
3. Special review sessions may be arranged at times, other than during formal classes, when either the professor or students feel that it would be helpful.

G. Acceptable Assignment Conditions

1. All outside written assignments are to be typed.
2. Answers to test questions are to be printed in black ink (except when computer score-sheets are employed and then a #2 pencil will be used).

H. Completion of Assignments

1. In order to receive full credit, assignments must be completed on time as announced in class or in this syllabus.
2. An "X" grade will be given only, when in the opinion of the professor, a student fails to satisfactorily complete all assignments even though they have worked to the maximum of their potential. An "X" grade will not be given to allow a student to simply avoid a "D" or "F" grade. A student must present a written request to the instructor in order for an X grade to be considered. This request must state the reason why the student feels that an X grade is justified.

I. The Makeup of Missed Tests

1. A student is required to make arrangements for making up all missed tests the day upon returning from an absence in order to avoid a zero on the tests. All tests must be completed within two days upon return to classes. A doctor's excuse may be required before the student will be allowed to take a makeup test.
2. A student is required to notify the professor prior to an exam (lecture or laboratory), that it will be impossible for him/her to take the test as scheduled. With-out this notification a zero will be recorded for the exam or quiz and the student will not be permitted to take a makeup.
3. If a student is ill when a test is to be given, he/she must inform the instructor of his/her condition prior to receiving a copy of the test. Once the student has received and/or taken the test no allowance will be made for illness.
4. Makeup tests are generally composed of essay and/or short-answer questions.

J. Cheating and/or Plagiarism

1. Cheating, in any form, will not be tolerated in this class.
2. Students observed, or otherwise determined to be cheating, will be dealt with severely and immediately according to the Policy regarding Student Cheating as stated in the Allegany College Student Handbook.

K. Laboratory Safety

1. Expectant mothers should confer with their physician prior to engaging in the laboratory phase of this course. This policy also applies to those students who become pregnant during the semester.
2. Students are required to report all accidents, regardless of how minor they may appear to be, to the professor immediately.
3. Students are required to purchase safety glasses and gloves and use these items with all laboratory exercises that use chemicals.
4. MSDS data sheets are available to students.

L. Laboratory Breakage

1. Students are required to pay for all damage that they incur on laboratory materials and equipment, such as slides, glassware, microscopes, etc.

IV. BIBLIOGRAPHY

A. Supplemental books for reference

1. Botany: A Brief Introduction to Plant Biology, Rost, Barbour, Thornton, Weier, and Stocking, John Wiley & Sons, 2nd edition, 1984.
2. American Herbal Products Association's Botanical Safety Handbook, Edited by Michael McGuffin, Christopher Hobbs, Roy Upton, and Alicia Goldberg, CRC Press, 1997.
3. Making Plant Medicine by Richo Cech, Horizon Herbs Publication, 2000.
4. Growing and Using The Healing Herbs by Gaea and Shandor Weiss, Wings Books, 1992.

B. Supplemental Journals for reference

1. Herbalgram
2. Economic Botany

TENTATIVE LECTURE SCHEDULE
BIOLOGY 150

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<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Reading Assignments</u> ¹
1	8/30	Introduction and introduction to research sources.	Rotblatt: Forward & Preface
	9/3	LABOR DAY:COLLEGE CLOSED	
2	9/6	Herbal Medicine and Herbal practices in the U.S. Assignment of plant to research	Rotblatt: pp. 1-5, 6-23
3	9/13	Herbal practices in the U.S. LECTURE TERMPAPER TOPIC DECIDED	Rotblatt: pp. 6-23
4	9/20	Herbal practices in the U.S.	Rotblatt: pp. 24-28; 411-419
5	9/27	Introduction to Mosby's Handbook of Herbs & Natural Supplements	pp. V-XXII
6	10/4	Continue week 5 MIDTERM LECTURE TEST HANDED OUT DUE ON 10/9 AT THE BEGINNING OF LAB	
7	10/11	Chemistry of Herbal Medicines or LAB TEST	Rotblatt: pp: 29-61
8	10/18	Chemistry of Herbal Medicines & Herb-drug interactions	Rotblatt: pp: 29-61
	10/22-10/23	FALL BREAK:NO CLASSES	
9	10/25	Herb-drug interactions and Safe Practices	Rotblatt: pp: 45-61 Foster and Duke Handouts
	10/29	LAST DAY TO DROP CLASSES WITH A "W" REGARDLESS OF GRADE	
10	11/1	Selected Herbal Examples	Rotblatt & Mosby & Handouts

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Lecture Schedule-continued

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<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Reading Assignments</u>
11	11/8	Selected Herbal Examples	Rotblatt & Mosby and Handouts
12	11/15	Cultural herbal Examples LECTURE TERM PAPER DUE	All Texts, &/or Handouts, or Readings
	11/22-23	THANKSGIVING HOLIDAY	
13	11/29	Cultural herbal Examples	All Texts, &/or Handouts, or Readings
14	11/6	Cultural herbal Examples	All Texts, &/or Handouts, or Readings
15	12/11	FINAL TEST	

Wednesday December 12 will follow the Monday class schedule.

Where possible reading assignments will be issued prior, except for the first week, to the week the topic will be covered.

TENTATIVE LABORATORY SCHEDULE
BIOLOGY 150

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<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Reading Assignments¹</u>
1	8/28	Introduction; if seeds are in we will plant some species. Beginning of plant cultivation practices. Some cultivation practices will occur during the next 3-4 weeks. Could go outside. Details of lab projects. Plant Anatomy*	Foster and Duke Handouts
2	9/4	Plant Anatomy and/or plant cultivation and plant identification*	Foster and Duke Handouts
3	9/11	Same as week 2*	Foster and Duke Handouts
4	9/18	Same as week 3* POTENTIAL LABORATORY TEST	Foster and Duke Handouts
5	9/25	Same as week 4* POTENTIAL LABORATORY TEST	Foster and Duke Handouts
6	10/2	Project work or same as week 5*	Foster and Duke Handouts
7	10/9	Project work or same as week 6*	Foster and Duke Handouts
8	10/16	Project work or same as week 6*	Foster and Duke Handouts
	10/22-10/23	FALL BREAK:NO CLASSES	
9	10/30	Project work or same as week 8*	Foster and Duke Handouts
10	11/6	Project work or same as week 9*	Foster and Duke Handouts
11	11/13	Project work or same as week 10*	Foster and Duke Handouts
12	11/20	Phytochemicals	Handouts

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<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Reading Assignments¹</u>
13	11/27	Phytochemicals	Handouts
14	12/4	POTENTIAL LAST TEST	
15	12/11	CLEANUP OR LAST TEST	

*THIS LABORATORY MAY BE HELD OUTSIDE

¹Where possible, reading assignments will be issued prior, except for the first week, to the week the subject material is to be covered.

DISCLAIMER

The information in this course is presented for educational purposes only to explore various topics related to medicinal botany and is not meant for use in diagnosis or treatment of disease. I do not diagnose or prescribe. Please consult with a health-care practitioner for all medical problems. I do not recommend self diagnosis, self medication, or unproved folk remedies. I do recommend the clinical comparison of folk medicines to pharmaceutical alternatives to help determine which may be cheapest, most efficacious, and safest.

ALTERNATIVE SCHEDULE FOR LECTURE

Lectures would still attempt to incorporate all the topics, but would have more general outlines. For example, by looking at specific cultures, such as native american (Cherokee as an example) we could look at types of plants, structures, how they are used, what the active chemicals were, etc.

A tentative schedule of this sort would include:
THE CLASS WOULD HAVE TO DETERMINE THE MAJOR AREAS

1. Safety issues would still be approached much as the original lecture schedule.
2. The most popular herbs used today in western society (U.S., Europe).
3. Plants that could be tentatively used for certain ailments. This would be decided by the class.
4. Ailments that could be treated by various plants.
5. Plants that would be used by a native american culture and Traditional Chinese Medicine.

Laboratory would still focus on the same topics, but would attempt to have one or two labs on perhaps Saturdays that would be inclusive of 3-4 labs each day.