BIO 4913 Special Topics in Biology: MEDICINAL BOTANY
Spring 2009 Course Syllabus

Instructors: Dr. Daniela Shebitz & Dr. Brian Teasdale

Class Time: 4:30-7:15 p.m. on Thursdays

Classroom: TBD

Instructor Office Location and Hours:
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Phone: 737-3655              Phone: 737-3671
Email: dshebitz@kean.edu      Email: bteasdal@kean.edu

I. Purpose of Course
Through this three credit major elective, students will have the opportunity to explore the uses of plants as medicine, ranging from traditional indigenous approaches for treating ailments to modern western pharmaceuticals. This course will enable students to learn about the biology of medicinal plants, and gain insight as to what makes them useful in treating everything from the common cold to cancer.

II. Objectives
The objectives of this course are to 1) Provide students with an opportunity to apply information gained through their college courses regarding the scientific method to understanding the history of medicine as it pertains to botanicals, 2) Provide students with an understanding of how current medicinal practices are often based on indigenous plant knowledge, and 3) Introduce students to different perspectives on treating ailments.

III. Course Policies
1. Attendance. Since this is a discussion-based course, attendance is required at each meeting. If you miss a class session, it is the equivalent of missing a week’s worth of material. We will accept only one excused absence for the course.

2. Testing. You are expected to be present for all exams. If you miss an exam, you must:
   a) Notify me in advance (in person, or by phone, or email)
   b) Have a serious excuse (illness, family emergency, etc.) with documentation from a doctor provided.

You WILL receive a zero grade for any unexcused absences from exams!
3. **Deadlines.** Assignments (reports, etc.) are to be handed in on their due dates. For each day late, we will deduct 10% off the assignment grade.

4. **Academic Honesty.** The Kean University Academic Integrity Policy is strictly enforced. If you are found cheating or plagiarizing, there will be serious consequences, including failure of the assignment/exam, failure of the course, or dismissal from the University.

5. **Webct Class Assignment and Note Availability.** We will post lecture notes and assignments on webct. In addition, you will find exam review questions, guidelines for the projects, and additional material on webct. It is important that you become familiar with accessing the class site. We may use the communication tool to email the class through webct for announcements.

### IV. Evaluation

A. Examinations (50%)
   There will be two written examinations (Midterm, Final) each worth 25% of your grade

B. Adopt-a-plant Presentation (15%)
   Each student will adopt (choose) a plant to research that will culminate with a 5 minute oral presentation on the plant’s medicinal properties and history. Live/preserved specimens, demonstrations or photographs are strongly encouraged for this assignment.

C. Term Paper (25%)
   Each student will write a term paper on either 1) a specific culture’s use of medicinal plants, 2) Drug discovery, or 3) a disease and various botanical treatments for it.

D. Participation and Attendance, Readings (10%)
   Because we will be meeting only once per week, regular attendance is required. Student interaction during the lecture component is important to synthesize material and improve comprehension so participation is a required component. We will be assigning eight readings that correspond with course content. The student is required to pre-read each week’s reading before class, type a one page summary of the article including any questions they might have (to be used during the discussion). The one page summary will be collected and used to confirm attendance and participation for that day.

**Evaluation Summary**

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<th>Evaluation Area</th>
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<tr>
<td>Examination 1</td>
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<td>Examination 2</td>
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<td>Adopt-a-plant Presentation</td>
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<tr>
<td>Term Paper</td>
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<td>Attendance/Participation</td>
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GRADE SCALE (%):

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<tr>
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<td>90-91</td>
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There are no A+, C-, D+ or D- grades in the Kean letter grading system.

**Term Paper**

Your term paper must be submitted in electronic format to the [http://www.turnitin.com](http://www.turnitin.com) database. You will need to use the following class ID ______ and password ________. In addition, a hard-copy should be submitted at the beginning of class on the due date. All written reports must be original writing and the turnitin.com website helps you check your writing. The website also allows you to resubmit up until the assignment deadline. Reports that are more than 20% un-original (plagiarized) at the time they are due will be automatically given a zero. Also be aware that spelling and grammar will be graded and poorly written reports will be penalized. Utilize the university writing center or have someone read through your reports before submitting them.

Note: Written reports should be typed [1.5 spaced; Times 12 font; 1" page margins]. All literature sources should be cited in the text (e.g., as "(Smith, 1973)") and in a Literature Citation section at the end of the paper. Primary sources of information include books, journals, and personal communications.
Tentative Schedule

Jan. 22  Introductions, Syllabus review (DS/BT); Review of basic plant biology

Jan. 29  Ecology of Plants; History of Medicinal Botany (DS)
  - Plants in Medicine (DS)
  - Human impact on secondary compounds (BT)
  - Evolutionary forces (BT)

Feb. 5  Traditional Knowledge and Plant Discovery
  - Medical Ethnobotany (DS)
  - General uses of plants (BT)
    - Complementary and Alternative Medicines
    - Injurious Plants
    - Remedial Plants
    - Psychoactive Plants

Feb. 12 Guest Speaker- Dr. Toney?; Movie- Introduction to Medicinal Botany

Feb. 19 Native American Botany (DS)

Feb. 26 Native American Medicine Preparation (DS) Hands-on activity

March 5 Chinese and Indian Homeopathy, Other countries (DS)

March 12 **Midterm Examination**

March 19 Spring Break

March 26 Phytochemistry, Pharmacology I: Alkaloids (BT)
  - Guest Speaker __________?
  - Cancer Therapy

April 2  Phytochemistry, Pharmacology II: Steroids (Glycosides) (BT)

April 9  Psychoactive plant-derived drugs (DS/BT); **Term Paper is due**

April 16 Field Trip I

April 23 Field Trip II

April 29 Future of Medicinal Botany (DS/BT)

May 7 **Final Examination**