7-17-2013

BOT4850 : Plants and Human Health. Course Proposal, Effective : 2013 : 07 : 17

University of South Florida St. Petersburg.

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USF St. Petersburg
NEW Undergraduate Course Proposal Form
(non-Gen Ed)

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<th>Date/Term Change is Requested to Become Effective</th>
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<td>1/13/2012</td>
<td>Fall 2013</td>
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<table>
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<tr>
<th>Contact Person</th>
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<th>Email</th>
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<tbody>
<tr>
<td>Melanie Whitmore</td>
<td>(727) 873-4834</td>
<td><a href="mailto:mariedin@mail.usf.edu">mariedin@mail.usf.edu</a></td>
</tr>
</tbody>
</table>

Do the attached changes mirror changes to USF Tampa Curriculum?  Yes

Comments: Changes are independent of USF Tampa

Description of Change (attach supporting documents if necessary):
The Biology degree program will offer BOT 4850 Plants and Human Health as an elective.

Estimated Impact on University Resources:

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<tr>
<td>Equipment</td>
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<tr>
<td>Faculty/Staff</td>
<td>Thomas J. Whitmore will teach this course as a part-time faculty member.</td>
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<td>Other</td>
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APPROVALS  (if Disapprove, Note and attach Comments)

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<th>Title (print name)</th>
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<th>Approve</th>
<th>Date</th>
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<td>Chair, College Academic Programs Comm.</td>
<td>[Signature]</td>
<td>Yes/No</td>
<td>2/20/12</td>
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<tr>
<td>College Dean</td>
<td>[Signature]</td>
<td>Yes/No</td>
<td>3/11/12</td>
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<tr>
<td>Chair, USFSP UGC Committee</td>
<td>[Signature]</td>
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<td>4/11/12</td>
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<td>USFSP Regional V.C. Academic</td>
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USFSP NEW Undergraduate Course Proposal Form (non-Gen Ed)

46. Department and Contact Information

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<td><a href="mailto:mariedin@mail.usf.edu">mariedin@mail.usf.edu</a></td>
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47. Course Information

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<tr>
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<td>Plants and Human Health</td>
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If yes, Maximum Number of Times? Maximum Number of Credits?

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<td>Regular grades</td>
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Total Clock Hours: 45
Abbreviated Title (30 characters maximum): Plants and Human Health

82. Prerequisites

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<th>Test and Minimum Grade</th>
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<td>BSC 2010 BSC 2011</td>
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<td>C-</td>
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83. Co-requisites

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<th>Course</th>
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84. Registration Restrictions
85. Course Description (255 character maximum for state submission)

This course is a study about the natural history and nature of plant chemical constituents, and about the historic, present, and future roles of plants in human health.

86. Gordon Rule

Does this course meet the writing portion of the Gordon Rule?  
Yes  No

If you indicated "yes" above, specify how the 6,000 words will be covered (exams, papers).

Does this course meet the computation portion of the Gordon Rule?  
Yes  No

87. Justification

a. Indicate how this course will strengthen the Undergraduate Program. Is this course necessary for accreditation or certification?

This course is an elective for Biology majors. It is not necessary for accreditation or certification.

b. What specific area of knowledge is covered by this course which is not covered by courses currently listed?

This course relates plants and their chemical constituents to human health issues, and to human physiology.

c. What is the need or demand for this course? (Indicate if this course is part of a required sequence in the major.) What other programs would this course service?

This course introduces students to the how plants have been, and can be used, to address human health issues. It will be of broad interest to students interested in premedicine, pharmacology, health sciences, and plant biology.  
This course may be of interest to students in other programs within the College of Arts and Sciences.

d. Has this course been offered as Selected Topics/Experimental Topics course? If yes, what was the enrollment?

Yes, Fall 2011. Enrollment was ~ 14 students.
e. How frequently will the course be offered? What is the anticipated enrollment?

Once every other year in the fall semester until demand requires each year; 24

f. What effect will this new course have on the program (major, minor, cognate, etc.)?

This course is an elective for Biology majors, and will enhance the choice of electives available to students. It serves as a bridge between botany and human physiology topics.

g. What effect will this new course have on the students currently in the program?

The biology program is scheduled to begin Fall 2012, so there are currently no students officially in the program.

h. What qualifications for training and/or experience are necessary to teach this course? (List minimum qualifications for the instructor.)

Master’s Degree in Biology or related science with a minimum of 18 hours of graduate course credit in biology, with some course work or research in botany or physiology.

88. Other Course Information

A. Objectives

Students will learn about natural selection of plant chemical constituents as defense mechanisms, about their potential as poisons, and how humans have learned to adapt the use of plant secondary chemicals as medicines by understanding their physiological effects. The course will explore the traditional use of plants as medicines, and the potential for important future discoveries of plant secondary chemicals in medicine. Topical issues will be addressed including plant conservation, and potential health effects of genetically modified plant foods and agricultural practices.

B. Learning Outcomes

At the completion of the course, students will be able to discuss the families of plants that are important with respect to traditional and modern medicinal practice, and about the poisonous potential for plants in many common edible plant families. They will understand the chemical groups of active constituents in plants, and be able to describe their general effects as poisons and uses in medicine. Students will be able to recognize the potential for accidental poisoning by common plants, and will gain understanding about the poisonous potential of wild-gathered plants. Students will learn about the efficacy of chemical constituents in popular herbal medicines, about the potential of herbal medicines for adverse health effects, and about the need to work closely with health professionals when using unregulated herbal products. The class will provide students with understanding about important conservation and ecological issues that arise from the growing use of wild-harvested plants for herbal medicines, and how conservation and cultivation...
I programs are important for mitigating ecological damage in future.

u. Major Topics
See Syllabus:

v. Textbooks

89. **Proposed UG Catalog Language**

This course is a study about the natural history and nature of plant chemical constituents, and about the historic, present, and future roles of plants in human health.

90. **Syllabus**

**BOT 4850, Plants and Human Health, Fall 20XX**

**Instructor:** Thomas J. Whitmore, Ph.D.
**Class meets:** Tuesday and Thursdays, 2:00 pm – 3:25 pm, STG 115
**Office hours:** Tuesdays and Thursdays 11:00 am – 12:30 pm or by appointment.
**Office:** STG 217  **Phone:** 727-873-4834  **E-mail:** whitmore@mail.usf.edu

**Course description:** This course is a study about the natural history and nature of plant chemical constituents, and about the historic, present, and future roles of plants in human health.

**Course prerequisites:** BSC 2010 and BSC 2011 or consent of instructor. Minimum Grade: C.

**Required Text:**

**Course objectives:**
This course is intended to provide understanding about the various roles of plants in human health. Students will learn about the natural history of plants with respect to production of their chemical constituents. We will examine issues related to adverse effects of plants on human health, as well as the historical roles of plants in nutrition, in health management, and as the basis for development of modern pharmaceuticals. We will discuss plant products in contemporary conventional and alternative medical treatments. The class will cover issues about medicinal plant conservation, and topics related to modern agricultural practices and human health. Readings from the text will be assigned and discussed each week. This course is not intended to provide any information regarding medical diagnosis or treatment, and professional medical advice should be sought for any health concern or when using plant products for self care.
Course learning outcomes:
At the completion of the course, students will be able to discuss the families of plants that are important with respect to traditional and modern medicinal practice, and about the poisonous potential for plants in many common edible plant families. They will understand the chemical groups of active constituents in plants, and be able to describe their general effects as poisons and uses in medicine. Students will be able to recognize the potential for accidental poisoning by common plants, and will gain understanding about the poisonous potential of wild-gathered plants. Students will learn about the efficacy of chemical constituents in popular herbal medicines, about the potential of herbal medicines for adverse health effects, and about the need to work closely with health professionals when using unregulated herbal products. The class will provide students with understanding about important conservation and ecological issues that arise from the growing use of wild-harvested plants for herbal medicines, and how conservation and cultivation programs are important for mitigating ecological damage in future.

Tentative Schedule of Topics

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>Introduction to the course. The historic role of plants in human diet.</td>
</tr>
<tr>
<td>Week 2</td>
<td>The natural history of plant chemicals, and plants as poisons.</td>
</tr>
<tr>
<td>Week 3</td>
<td>Plant chemistries and physiological effects.</td>
</tr>
<tr>
<td>Week 4</td>
<td>Plant chemistries, cont'd, and plants as allergens.</td>
</tr>
<tr>
<td>Exam 1</td>
<td></td>
</tr>
<tr>
<td>Week 5</td>
<td>Common plant families and their chemical constituents. Poisons and medicinals: a matter of scale</td>
</tr>
<tr>
<td>Week 6</td>
<td>Edibles and medicinals through history in various cultures.</td>
</tr>
<tr>
<td>Exam 2</td>
<td></td>
</tr>
<tr>
<td>Week 7</td>
<td>Progressive development of systematic plant uses in medicine.</td>
</tr>
<tr>
<td>Week 8</td>
<td>Development of modern pharmacology from traditional plant uses.</td>
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<tr>
<td></td>
<td>Significant plant medicine discoveries in the past, and the development of semi-synthesized and synthesized medicines.</td>
</tr>
<tr>
<td>Week 9</td>
<td>Recent discoveries and innovations in plant medicines.</td>
</tr>
<tr>
<td></td>
<td>Future directions in the development of plant-derived medicines.</td>
</tr>
<tr>
<td>Exam 3</td>
<td></td>
</tr>
<tr>
<td>Week 10</td>
<td>Medicinal plants in nature, harvesting, and conservation issues.</td>
</tr>
<tr>
<td>Week 11</td>
<td>The role of botanical gardens in medicinal plant conservation. Herbalism and food supplements, herbal interactions with medicines, and caveats.</td>
</tr>
<tr>
<td>Week 12</td>
<td>Topical issues including genetically modified agricultural plants and human pesticide exposure through plant foods.</td>
</tr>
<tr>
<td>Week 13</td>
<td>Topical issues cont'd and student presentations.</td>
</tr>
<tr>
<td>Week 14</td>
<td>Student presentations.</td>
</tr>
<tr>
<td>Week 15</td>
<td>Final Exam.</td>
</tr>
</tbody>
</table>

Examinations
Four exams will be given. Each will be worth 100 points, and will consist of a mixture of short-answer and short-essay questions. The final exam is not comprehensive.

**Student presentation**

About midway in the semester, I will identify topics that can serve as the basis for group presentations. Students will work individually or in groups, and each student/group will select a topic and prepare a presentation for the class on their topic. The topics need to be approved by the instructor by a deadline that will be announced. Each student/group must participate in the presentation and discussion of their topic. The presentation by each student must last ~15-20 minutes, followed by questions or brief discussion. Presentations should be based on peer-reviewed literature or other authoritative sources. Each group will present a Powerpoint presentation, and will provide the students in the audience with a bibliography that identifies their sources, and a 1-2 page abstract of their presentation. Presentations will be graded based on 1) overall organization, 2) depth of detail, 3) quality and quantity of content, 4) cohesiveness and clarity of presentation 5) individual preparedness and presentation.

**Course Policies**

1) **Academic Conduct**

   *All work must be your own, original, independent work.* Cheating in any form will not be tolerated, and students suspected of cheating will not receive credit for the assignment. Evidence of cheating will be submitted to the Assistant Dean of the College of Arts and Sciences for Academic Misconduct review. Please refer to the Student Handbook for information on the University policy on academic dishonesty and its consequences.

2) **Attendance**

   Attendance is required and expected for all lectures and exams.

   I understand that circumstances occasionally might result in a student missing a lecture.

   **If you miss a lecture, you are responsible for obtaining missed notes, handouts, announcements etc. from me or from another student.** It is strongly encouraged that students who must miss significant blocks of material (lectures, exams), or who anticipate that they regularly will not be able to arrive on time or must leave early, should consider withdrawing from the course. Excessive unexcused absences (three or more) may result in lowering of the final grade.

3) **Use of electronic devices in the classroom and note taking.**

   **Use of computers, cell phones, and text messaging are not permitted in the classroom because of their tendency to distract students and the instructor, and students who fail to observe this policy will be asked to leave the classroom.**

   Students are asked to take class notes using a 3-ring binder, to date their notes, and to add handouts in chronological sequence. Each student's notebook will be evaluated by the instructor later in the course as partial evidence of the student's regular attendance and participation in the classroom.
4) Grading
The total course points = 500. Each of the four examinations will represent 100 points for a total of 400 exam points, i.e., the exams will represent 80% of the final grade. Student presentations will represent 75 points, or 15% of the final grade. Attendance and constructive participation in classroom discussions will represent 25 points, or 5% of the final grade. Readings assigned the previous class often will be discussed for a short time at the beginning of the next class.

The following grading scale will be used in assigning final grades:
A+ = 98-100%
A = 94-97%
A- = 90-93%
B+ = 87.5-89%
B = 84-87%
B- = 80-83%
C+ = 77.5-79%
C = 74-77%
C- = 70-73%
D = 60-69%
F = < 60%
USF St. Petersburg - NEW Undergraduate Course
BOT 4850 – Plants and Human Health
Effective 201305
Banner Documentation

### Base Course Record

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<th>Subject:</th>
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#### Course Details

- **From Term:** 201305
- **Copy:**
- **To Term:** 999999
- **Course Title:** Plants and Human Health
- **College:** AP ▼ Arts and Sciences USFSP
- **Division:**
- **Department:** BIO ▼ Biology
- **Status:** A ▼ Active
- **Approval:**
- **CIP:** 260301 ▼ Botany, General
- **Prerequisite Waiver:**
- **Duration:**
- **Hours:**
  - CEU or Credit: 3.000
  - Billing: 3.000
- **Lecture:**
- **Lab:**
- **Other:**
- **Contact:**

#### Repeat Details

- **Limit:**
- **Maxim Repeat Status:**

#### Course Level Record

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**Course Supplemental Data Record**

**Subject:** BOT ▼ Botany  
**Course Title:** Plants and Human Health

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**Account Number:** USF01STP51120910000  
**Occupational Course:** ▼
**Classification:** ▼
**Cooperative Education:** □

- **Course Identifier:**  
- **Credit Category:**

**Institutional Reporting**
- **Element 1:** F ▼ Fixed title
- **Element 2:**
- **Element 3:** 050 ▼ 50 - Primary
- **Element 4:**

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**Course Description Record**

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**Description**

- This course is a study about the natural history and nature of plant chemical constituents, and about the historic, present, and future roles of plants in human health.
Course Pre-requisite Record

Subject: BOT Botany
Course Title: Plants and Human Health

Course Test Score and Prerequisite Restrictions

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Contact Person: crossman
Phone: 7278734143
Email: crossman@usfsp.edu

2. Course Information

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<tr>
<td>BOT</td>
<td>4850</td>
<td>Plants and Human Health</td>
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Is the course title variable? N
Is a permit required for registration? N
Are the credit hours variable? N

Credit Hours: 3
Section Type: Class Lecture (Primarily)
Grading Option: Regular

Abbreviated Title: Plants and Human Health

Prerequisites
BSC 2010 / C- OR BSC 2011 / C-

Corequisites
none

Co-Prequisites
none

Course Description
This course is a study about the natural history and nature of plant chemical constituents, and about the historic, present, and future roles of plants in human health.

3. Gordon Rule

Does this course meet the writing portion of the Gordon Rule?
N

If you checked "yes" above, specify how the 6,000 words will be covered (exams, papers).
N/A

Does this course meet the computation portion of the Gordon Rule?
4. **Justification**

A. Indicate how this course will strengthen the Undergraduate Program. Is this course necessary for accreditation or certification?
This course is an elective for Biology majors. It is not necessary for accreditation or certification.

B. What specific area of knowledge is covered by this course which is not covered by courses currently listed?
This course relates plants and their chemical constituents to human health issues, and to human physiology.

C. What is the need or demand for this course? (Indicate if this course is part of a required sequence in the major.) What other programs would this course service?
This course introduces students to the how plants have been, and can be used, to address human health issues. It will be of broad interest to students interested in premedicine, pharmacology, health sciences, and plant biology. This course may be of interest to students in other programs within the College of Arts and Sciences.

D. Has this course been offered as Selected Topics/Experimental Topics course? If yes, what was the enrollment?
Yes, Fall 2011. Enrollment was ~ 14 students.

E. How frequently will the course be offered? What is the anticipated enrollment?
Once every other year in the fall semester until demand requires each year; 24

F. Do you plan to drop a course if this course is added? If so, what will be the effect on the program and on the students? (Please forward the nonsubstantive course change form regarding the course to be deleted to the Council secretary.)
No

G. What qualifications for training and/or experience are necessary to teach this course? (List minimum qualifications for the instructor.)
Graduate degree and 18 hours of graduate course credit in biology, with some course work or research in botany or physiology.

5. **Other Course Information**

A. Objectives
Students will learn about natural selection of plant chemical constituents as defense mechanisms, about their potential as poisons, and how humans have learned to adapt the use of plant secondary chemicals as medicines by understanding their physiological effects. The course will explore the traditional use of plants as medicines, and the potential for important future discoveries of plant secondary chemicals in medicine. Topical issues will be addressed including plant conservation, and potential health effects of genetically modified plant foods and agricultural practices.

B. Learning Outcomes
At the completion of the course, students will be able to discuss the families of plants that are important with respect to traditional and modern medicinal practice, and about the poisonous potential for plants in many common edible plant families. They will understand the chemical groups of active constituents in plants, and be able to describe their general effects as poisons and uses in medicine. Students will be able to recognize the potential for accidental poisoning by common plants, and will gain understanding about the poisonous potential of wild-gathered plants. Students will learn about the efficacy of chemical constituents in popular herbal medicines, about the potential of herbal medicines for adverse health effects, and about the need to work closely with health professionals when using unregulated herbal products. The class will provide students with understanding about important conservation and ecological issues that arise from the growing use of wild-
harvested plants for herbal medicines, and how conservation and cultivation programs are important for mitigating ecological damage in future.

C. Major Topics
Introduction to the course; The historic role of plants in human diet; The natural history of plant chemicals, and plants as poisons; Plant chemistries and physiological effects; Plants as allergens; Common plant families and their chemical constituents; Poisons and medicinals: a matter of scale; Edibles and medicinals through history in various cultures; Progressive development of systematic plant uses in medicine; Development of modern pharmacology from traditional plant uses; Significant plant medicine discoveries in the past, and the development of semi-synthesized and synthesized medicines; Recent discoveries and innovations in plant medicines; Future directions in the development of plant-derived medicines; Medicinal plants in nature, harvesting, and conservation issues; The role of botanical gardens in medicinal plant conservation; Herbalism and food supplements, herbal interactions with medicines, and caveats; Topical issues including genetically modified agricultural plants and human pesticide exposure through plant foods.

D. Textbooks

6. Syllabus (Anatomy of a Syllabus)

Your college will forward an electronic copy of your syllabus to Undergraduate Studies when your course is approved for submission.

7. Liberal Arts Certification

   General Course Requirements
   ○ N/A

   Exit Requirements
   ○ N/A

   Skills and Dimensions
   ○ N/A