Introduction to Ethnobotany SYLLABUS

Spring 2013

Course number: 11:776:205

Credits: 3

Lectures: Tuesdays and Thursdays 10:55-12:15 PM in 138A Foran Hall

Course web page: www.rutgersonline.com

Textbook: Plants and Society, edition 5, by Levetin and McMahon, McGraw-Hill. © 2008, ISBN-13 9780077221256 (There is a newer edition but we will primarily be using this edition and so the chapters and page numbers may vary between editions. The book is available at the Barnes and Noble bookstore on Cook College campus, and several copies available at the RU bookstore on Easton Avenue, and you can also buy it in on-line format for significantly less (see course website). You will need the book for the course, it is not optional.

Quiz dates: See schedule. There is no midterm or final exam; instead we have three quizzes (20 min each). Quizzes might also include practical components such as identification of common fruits, spices, herbs, and vegetables (see Species to Know list). Quizzes will include textbook reading, additional assigned reading or activities (all on course website), and lectures (also posted on website).

Additional reading and activities: All non-textbook reading and activities (pdfs, online video, podcasts, etc.) will be posted on the course website and is mandatory unless stated otherwise. Even if optional, read, listen, and watch these since they will help you understand the subject and provide a broader coverage and knowledge base for you. There is a reading list fill the function as a resource list for your independent projects.

Independent projects: See instructions on separate sheet. Projects are independent, i.e., NOT group projects. All text that is handed in will be run through turn-it-in.com to check for plagiarism (purposeful and nonintended) and other problems.
Grading:
Quizzes, 3 at 20 points each 60 points
Project 1: Ask grandma and grandpa 20 points
Project 2: Paper on edible ethnic produce 20 points
Project 3: Weight-loss pill 20 points
Project 4: Independent essay 30 points
Online-self assessments* Provide extra credit
TOTAL 150 points *

For projects, points will be taken off for misspellings, wrongly formatted text, sloppiness and similar mistakes, and all plagiarism will be reported to the Dean. If you participate significantly and constructively in classroom discussions and with questions we will strongly consider raising your grade further. Grades are A (90% and over), B+ (85-90%), B (80-85%), C (70-80%), D (60-70%), and F (below 60%). We will use the gradebook on the course website so you can check your current grade at all times. Any issues with grades, your performance and other issues, see Prof. Simon.

Online-self assessments
* You can get extra credit for doing such assessments, but will not be graded on your performance. You can retake assessments and they are at-home, open-book exams to aid in your learning and understanding of the subject.

Instructors:
Dr. James Simon jimsimon@rci.rutgers.edu; and jesimon123@hotmail.com
Office hours: By appointment. Office: 396C Foran Hall, 59 Dudley Road

Plus guest lecturers as shown in syllabus

Course website support:
Dr. Priscilla Hockin-Brown, hockin@aesop.rutgers.edu
**Schedule**

**Introduction to Ethnobotany 2013**

*Class: Tuesdays and Thursdays  
Time: 10:55AM-12:15PM  
Location: Foran Hall 131A, SEBS  
*SSchedule is subject to change (topic, order, lecturer)*

<table>
<thead>
<tr>
<th>Date</th>
<th>Unit and Main Topic</th>
<th>Topic</th>
<th>Reading, on-line activity (see course website for additional on-line materials)</th>
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<tbody>
<tr>
<td>Jan 22, Tuesday</td>
<td>Unit 1: Plants and Society</td>
<td>Introduction to ethnobotany, its history; introduction to course website; and introduction to Project 1 “Ask Grandma and Grandpa” (Jim Simon)</td>
<td>Textbook: chapter 1. Log in at rutgersonline.net and explore the course website; read about academic integrity, how to write projects for class and how to find information on a subject</td>
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<tr>
<td>January 24, Thursday</td>
<td>Unit 2: Intro to Plant Life</td>
<td>No class</td>
<td>Textbook, chapters 2, 3 and 4. Plan out your series of questions for project 1 and submit your draft interview questions online.</td>
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<td>January 29, Tuesday</td>
<td>Unit 2: Intro to Plant Life</td>
<td>Back to the Basics - Plant Anatomy and Physiology (Jim Simon)</td>
<td>Textbook: chapters 2, 3, 4, 5 and 6. Website: review plant morphology terms.</td>
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<tr>
<td>January 31, Thursday</td>
<td>Unit 2: Intro to Plant Life</td>
<td>Back to the Basics - Plant Chemistry and benefits to plants and humans in the wide array of produced natural products (Jim Simon)</td>
<td>Textbook: chapter 4.</td>
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<tr>
<td>February 5,</td>
<td>Unit 2: Intro to Plant Life</td>
<td>Back to the Basics - Genetics, DNA, evolution,</td>
<td>Textbook: chapter 7, 8, 9.</td>
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| Tuesday             | Plant Life            | naming and classification (Lena Struwe)                             |                                                                .popup-content-iframe { display: inline-block; border: 1px solid; border-radius: 4px; overflow: hidden; width: 612px; height: 792px; position: relative; text-align: center; color: black; background-color: white; padding: 5px; border-color: black; border-radius: 4px; overflow: hidden; width: 100%; height: 100%; z-index: 1; }
<p>| February 7, Thursday | Unit 2: Intro to Plant Life | Lecture/Demo: Supermarket botany aka Major plant families in ethnobotany and fieldtrip/hands-on demonstration: Rutgers’ greenhouse (meet outside greenhouse at 11:00am- Greenhouses across from Marine Biology- corner of Dudley and College Farm Road (Jim Simon). |                                                                 | chapter 9-14.     |
| February 8, Friday  | Unit 1: Plants and Society | DEADLINE: project 1 “Ask Grandma and Grandpa” (hand in hard copy into Prof. Simons mailbox, 2nd floor Foran Hall) | Upload project 1 on course website as a WORD document or pdf. Use doc-share as needed on Ecompanion.                                                                                                          |                   |
| February 19, Tuesday | Unit 3: Plants as a source of food | Wheat, rice, and corn (Lena Struwe) | Textbook: chapter 12.                                                                                                                                                                                  |                   |</p>
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<tr>
<th>Date</th>
<th>Unit/Unit 3</th>
<th>Topic</th>
<th>Textbook References</th>
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<tr>
<td>February 26, Tuesday</td>
<td>Unit 3: Plants as a source of food</td>
<td>Ethnic Vegetables, Greens and Herbs and Foods for the Future (Jim Simon)</td>
<td>Textbook: chapter 15. Upload project 2 on course website as a PowerPoint document or pdf.</td>
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<tr>
<td>March 5, Tuesday</td>
<td>Unit 4: Commercial Products</td>
<td>The spice trade and world discovery (Jim Simon, Rodolfo Juliani)</td>
<td>Textbook: chapter 17.</td>
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<td>March 12, Tuesday</td>
<td>Unit 4: Commercial Products</td>
<td>Fabrics and natural crafts and products (Jim Simon)</td>
<td>Textbook: chapter 18.</td>
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<tr>
<td>March 14, Thursday</td>
<td>Unit 4: Commercial Products</td>
<td>Hemp and marijuana (Jim Simon)</td>
<td>Textbook: chapter 18, 20.</td>
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<td>March 18-22</td>
<td>Spring Break</td>
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<tr>
<td>March 26, Tuesday</td>
<td>Unit 4: Commercial Products</td>
<td>Chocolate and cacao (Tom Gianfagna)</td>
<td>Textbook: chapter 16.</td>
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<tr>
<td>April 02,</td>
<td>Unit 5: Plants and</td>
<td>Lecture: Medicinal Plants (Jim Simon);</td>
<td>Textbook: chapter 19.</td>
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<td>Date</td>
<td>Unit 1: Plants and Human Health</td>
<td>Lecture/Discussion: Sustainability and natural ecosystems (Jim Simon)</td>
<td>Textbook: chapter 9, 26.</td>
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<td>April 04, Thursday</td>
<td>Unit 5: Plants and Human Health</td>
<td>Lecture/ hands-on demo: Methods to Identify Bioactivity in Plants &amp; Introduction to Global institute of bioexploration (GIBEX; Jim Simon). Demonstration of Screens-To-Nature of medicinal plants (TBD)</td>
<td>Textbook: chapter 19. <a href="http://www.gibex.com">www.gibex.com</a> and additional on-line materials</td>
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<td>April 17, Wednesday</td>
<td>Unit 5: Plants and Human Health</td>
<td>DEADLINE: Hand in project 3 “Safety and contents of a weight loss pill”. (Hand in hard copy in Jim Simon’s mailbox, 2nd floor Foran Hall)</td>
<td>Upload project 3 on course website as a WORD document or pdf.</td>
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<td>April 18, Thursday</td>
<td>Unit 6: Algae and Fungi</td>
<td>Edible, medicinal and psychoactive mushrooms (Qingli Wu); and Introduction to project 4 “Independent essay”</td>
<td>Textbook: chapter 20, 23-25.</td>
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<tr>
<td>April 23, Tuesday</td>
<td>Unit 7: Plants and the Environment</td>
<td>Lecture/Discussion: Global warming and feeding the planet (Lena Struwe);</td>
<td>Textbook: chapter 26.</td>
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<tr>
<td>April 25,</td>
<td>Unit 7: Plants and Human Health</td>
<td>Lecture/Discussion: Biofuels (Jim Simon)</td>
<td>Textbook: chapter 18, 26.</td>
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<tr>
<td>Date</td>
<td>Unit</td>
<td>Events</td>
<td>Textbook: chapter 22-25, On course website.</td>
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<tr>
<td>April 26, Friday</td>
<td>Unit 6: Algae and Fungi</td>
<td>DEADLINE: On-line self assessment on Unit 6</td>
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<tr>
<td>April 30, Tuesday</td>
<td>Unit 7: Plants and the Environment</td>
<td>Modern medicines vs. herbals, patenting and bioexploration (Jim Simon)</td>
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<tr>
<td>May 02, Thursday</td>
<td>Unit 5+6+7</td>
<td>Part 1: QUIZ 3: 20 min quiz in class.</td>
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<td></td>
<td>Unit 7: Plants and the Environment And</td>
<td>Group debate on environmental sustainability (Jim Simon)</td>
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<tr>
<td>May 06, Monday</td>
<td>Last day of Spring 2013 classes Unit 7: Plants and the Environment And Unit 1-7</td>
<td>DEADLINE: On-line self assessment on Unit 7 for extra credit And DEADLINE: Final version due on project 4 “Independent essay”</td>
<td>Textbook: chapter 26. On course website. And Upload project 3 on course website as a WORD document or pdf.</td>
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*Syllabus is subject to change relative to topical order of presenting the materials, instructor and specific lecture.*
Independent Ethnobotany Projects 2013

All projects will be introduced in class. All have to be handed in using the drop box on the course website and as a hard-copy printout in Jim Simons mailbox (2nd floor Foran Hall). Projects that are more than one day late will get a reduced grade. All project reports have to include a list of References and follow the correct citation format (see instructions). Name your files YourName_project1.doc (or YourName_project1.pdf), etc.

Good luck!

1. “Ask Grandma and Grandpa”
   Research question: Do home remedies work?
   How: Contact an older relative or other older person and ask them for an herbal remedy they have used or can recommend for some medical problem. Write down the contents and the procedures for using this remedy and from which area of the world it comes from. Research the different plant ingredients for any scientific evidence of efficiency using different sources (library, on-line, Google Scholar, PubMed – see instructions) for scientific evidence. Should the remedy work? Or is it dangerous? Draw conclusions on the effectiveness and cultural origin of the herbal remedy. Key question is whether traditional recipe works based upon modern scientific evidence and to what level does a home remedy need such scientific validation.
   Report: Write a report on your findings, at least 2 pages long. Single-spaced text, your name on top, no cover page. Include all references at end (follow referencing format).

3. The contents of a detox or weight-loss pill
   Research question: Are these pills safe and/or effective?
   How: Go to your local supermarket, grocery, or a local drugstore and select a weigh-loss pill for sale that includes at least four (4) different plants. Copy down all information about the pill and include this as an appendix to your report (or use a digital camera). Research the different plants that are included in the pill as to their safety and effectiveness using scientific publications. Is there any standardization as to how much of the active ingredients are needed to be included in each pill to be effective? Does the company provide any safety information or guarantee that the pill includes the compounds listed? Is there any way to know what the dosage is? Research the pill and company online – any reports of fraud? Give your own opinion on if you would trust the safety of this product. Look for adverse and/or and side effects/toxicity from the ingredients.
   Report: Write a report on your findings, at least 2 pages long. Single-spaced text, your name on top, no cover page. Include all references at end (follow referencing format).

2. Paper on an edible plant species
   This year’s theme: Ethnic edible plants (this includes spices and herbs, ethnic fresh produce that is not the traditional mainstream common American vegetables, fruits, grains, legumes. It can include any edible plants, even wild ones – as long as at least some part of the plant used as food or for flavor. All students will need to study and write about a different species, and one that you have not written about in a previous course. Fungi are allowed, even if they aren’t plants. Only specific species are allowed, not whole genera or single cultivars.
Include in your paper summaries under the following headings: 1) Taxonomy (what family it belongs to, how the plant looks like, where it grows wild), 2) Economic use (details on its cultivation and use, cultural information, products made from the plant), 3) Chemistry (nutrition, any toxicity, taste). You can include additional information and headings as well, but these three headings have to be included on the poster.

Figures and images: Make sure you cite the source and that you have permission to use them (see instructions)

4. Independent essay
Write an essay on one of these topics
   A. Essay on the historical or contemporary ethnobotany of a particular country, region, or people (pick one).
   B. Essay on problems and opportunities in the future production of food, energy, medicines, fibers, or herbs and spices (pick one).
   C. Essay on the sustainability of plant resources locally or globally
Give an introduction to the topic, outline what is known, problems and potential solutions, and discuss what areas that needs more research, money. The writing style is free form, but should include references to data sources and your paper must support your hypothesis and/or objectives and title of the paper.

Report: Write a report on your findings, minimum length is 5 pages (including reference list and optional figures). Single-spaced text, name on top, no cover page. Include all references at end (follow referencing format).

Any questions- contact Prof. Simon or Prof. Struwe
Spring, 2013.
There are many ways of citing sources of information. The format often depends on where you want to publish your work. In this class, we use a common format used for many scientific journals, which includes the author and the year of a citation in the text. We don’t use footnotes, or numbered citations (these are common in other types of journals) in the body of the report. It is important to cite the reference in your text when you use information from the reference and not simply list all the references at the end of your report. The reader (and the instructors) needs to understand where you are getting your facts from as you write and cannot judge the merit of the reference source if the sentence or paragraph from which the information came from is not cited.

Also be sure you use the appropriate reference for the citation. That is, a reader will not have much confidence when citing a popular magazine as the factual source for the name of an actual genus and species identification or origin rather than a more appropriate botanical listing source as a more authoritative reference. One does not often cite a paper on horticulture when describing a medicinal or pharmacological study. Use the most appropriate source as your citation.

For each source you need to know:
For each article: Author(s) with initials, year of publication, title, page numbers, journal, volume number.
For each book chapter: Author(s) with initials, year of publication, book chapter title, page numbers in book, book title, book editor(s) with initials, publisher, place of publication (city, state).
For each book: Editor(s)/author(s) with initials, year of publication, book title, publisher, place of publication (city, state).
For internet resources: Author's name (last name, first and any middle initials) [if available, otherwise publisher or organization]. Date of Internet publication (date it was put on the web). Document title. <URL> or other retrieval information. Date of access (when you saw it).
For illustrations and images: Copyright holder, source (website, journal article, book, etc.). For all images, READ THE COPYRIGHT before use. If you include an image that isn’t your own in your report, you need to put the citation for the image in the figure caption.

Citation in text
Example of text with citations:

“Sipapoantha is a mountain genus endemic to the Guayana Highlands (Figure 2). Pollen characters show large variation in this genus (Struwe et al., 2002). Pollen is spiny in Sipapoantha ostrina and was considered by Maguire and Boom (1989) to be similar to the pollen found in Chelonanthes. Nilsson (2002) suggested that Sipapoantha pollen is more similar to Prepusa and Senaea than to Chelonanthes.”

Note how citations are inside parentheses, unless they are part of the running sentence, example:

…..(Table 1)… (Figure 18)…. (Struwe et al., 2002).

If part of a running sentence, the year of the publication is in parenthesis, example:

…..Maguire and Boom (1989)…..

1. Cite each figure and table you include in the text, several times if necessary.
2. Include only references cited in text in the Literature Cited/References section. Please double-check the spellings of authors’ names and dates of publication.
3. Within parentheses, use a semicolon between different citations; for example, "(Fig. 4; Table 2)" or "(Jones, 1950; Smith and Doe, 1967)."
4. Within parentheses, use commas rather than connecting words for a series; for example, "(Smith, 1952, 1959, 1962; Jones, 1962, 1965)." Several references in a series within parentheses should be arranged chronologically (beginning with the earliest date).
5. Examples of author citations in text
   a. Two authors: Smith and Jones (1960) or (Smith and Jones, 1960)
   b. Three authors or more: Doe et al. (1958) [et al. means ‘and others’ in Latin]

Figures and tables in text
Figures are drawings and images that is one piece, whereas tables are text arranged in rows and columns that can be edited. The figure mentioned first in the text will be Figure 1, the next Fig.2, etc., same for Tables. Figures and tables are numbered with regular numbers (1, 2, 3..) and independently from each other. They can be cited either in parenthesis or in the sentence itself.

Examples:
   “In Figure 2, the distribution of Nymphaea in northern Europe is shown.”
   “The distribution of Nymphaea in northern Europe is extensive (Fig. 2).”

Figures of many file-formats can be inserted in Word, but take note of file sizes. You don’t want to insert a very large file into your document – instead make it smaller in Photoshop or Illustrator or a similar program. Let me know if you have any problems and I will help out.

Writing the reference list
This is simply a list of all the references you have cited in your report. They need to follow a standard format. These formats also differ between different journals, and the one you should use for this project is outlined here. All references are listed alphabetically by the first author. If several works by the same author is present, then his/her works are listed chronologically (beginning with the earliest).

More information on referencing can be found here:
Citation in Biological Articles: [http://www.bedfordstmartins.com/online/cite8.html](http://www.bedfordstmartins.com/online/cite8.html)
[the name-year system is the one you should use = type 2]

Journal article
[=Author with initials. Year. Title of article. Journal (you can abbreviate the title or write it out in full, but be consistent in your essay). Issue number: Page-Page.]

Book chapter
[=Author with initials. Year. Title of book chapter. Pages-Pages. In: Editor with initials. Book Title. Publisher, City of publication.]

Book
[=Author with initials. Year. Title of book. Publisher, City of publication.]

Online resources (web pages, databases)

Prof. L. Struwe
Spring 2009.
* These may be available in Chang Library as Reserve or in the Reference Collection; if not you will have to borrow from the library and are listed here only as suggestions for additional readings.

**General Topics:**

**Edible plants and seasonings:**
History of agriculture and crops:
D'Aluisio, F. 2005. Hungry planet: what the world eats. Ten Speed Press. [a fantastic coffee table-type book showing what different families around the world eats in a week]

Medicinal botany and sacred plants:

**Dyes, fibers, etc.**

**Fungi**

**Conservation of natural resources, biotechnology, future of food, etc.**

**On-line Resources:**
See course website’s webliography.

Compiled by Prof. Struwe and Prof. Simon
Spring 2009.
How to find information about a subject in ethnobotany
– a short introduction to Rutgers Libraries and different search methods

GOOGLE, etc.

Use Google Scholar, Google Images, or regular Google searches. Try out different combinations of keywords. Another possibility to explore is to search for keywords in Amazon.com – this can lead to pages inside books that talk about your subject. Do not rely on Google and Amazon to find all the information – most information is hidden in publications not accessible by these resources. You will find out most if you use a variety of search strategies. Also, DO NOT RELY on websites for correct information, always go to the published source (journal article, book, etc.)

RUTGERS LIBRARIES

1. Go to www.libraries.rutgers.edu

You can use the library services off-campus if you log in.
2. On the left side, click on “How do I…” to get short answers to the most common questions.
3. Take the Searchpath tutorial (also on the left side of the homepage of the libraries). This takes a little while, but is worth the effort.
4. Search using keywords in databases, and these databases are recommended:
Agricola
BIOSIS Previews
BioOne
Chemical Abstracts
Natural Medicines Comprehensive Database
PubMed
SciFinder

Keywords can be the name of the plant (in Latin or English), the region, any noun, and the region. Try different combinations to limit and focus your results.

Also, you can search all of Rutgers holdings at the same time (but this does not find articles):
5. The databases only give you the reference and sometimes the abstract. Some link to electronic versions of the full article, and for others you will have to write down the reference and then use IRIS (the library catalog) to order the article or the Electronic Journal list to find the article. Remember, a lot of material is not available in electronic form, and then you will have to request a loan of that publication, either a book or a journal, which you can also do on-line. Articles are usually sent as pdf files directly to your e-mail, and books will show up after a few days.

6. If you have trouble with library-related things, make an appointment with the librarians in the Chang Science Library. They will be happy to help you.

/L.Struwe, 2009