

Herbal Medicines and Nutraceuticals
30:715:453
Syllabus, Fall 2008
Monday and Wednesday, 5:15-6:10
Room 115 William Levine Hall

Lectures 1-9: Sept 3.–October 6

Class Introduction, Expectations and Overview: Relevance for Pharmacists

- Lecture 1.** Principles of Absorption, Distribution, Metabolism, and Excretion (ADME)
- Lecture 2.** Water-Soluble Vitamins; Lipid-Soluble Vitamins, Minerals
- Lecture 3.** Natural Products Chemistry – Alkaloids and Terpenes, LaVoie
- Lecture 4.** Shikimic acid and polyketide (acetogenins) derived Natural Products
- Lecture 5.** Herbal Formulations
- Lecture 6.** Herbal Products for Estrogen Replacement and Benign Prostate Hyperplasia
- Lecture 7.** GI Distress and Digestive aids
- Lecture 8.** Analgesics
- Lecture 9.** Depression and Cognitive Function

Wednesday, October 8th Hourly Exam # 1

Lectures 10-17: October 13-November 5

- Lecture 10** Definitions, Nutrients/Nutraceuticals/Dietary Supplements and DSHEA
- Lecture 11** Enhancement of General “Well-Being” and Chinese Medicinals
- Lecture 12** Impotence and Diminished Sexual Performance
- Lecture 13** Remedies for Fatigue, Agents for Enhancement of Physical Performance
- Lecture 14.** Rheumatoid Arthritis and Osteoarthritis
- Lecture 15** Herbs used with Respiratory Tract Problems
- Lecture 16** Diabetes
- Lecture 17** Antioxidants and Human Health Benefits

Monday, November 10th Hourly Exam # 2

Lectures 18-25: November 12-December 8

- Lecture 18** Hypercholesteremia
- Lecture 19** Weight Control and Obesity
- Lecture 20** Stimulants
- Lecture 21** Cancer Prevention and Cancer Chemotherapeutics from Plants
- No Class Wed. Nov. 26 and Thursday-Friday, Nov. 27 and 28: Thanksgiving Holidays**
- Lecture 22** Anxiety and Insomnia
- Lecture 23** Stimulation/Regulation of the Immune System
- Lecture 24** Overview: Quality Control of Botanicals
- Lecture 25** Federal Research Initiatives on Botanicals and Sources of Information for the Pharmacist: NCCAM, ODS, NIH and Industry

Third Hourly exam to be scheduled during exam week

Course Coordinators: Professor Edmond LaVoie, School of Pharmacy, Department of Medicinal Chemistry and Professor James Simon, Professor, Department of Plant Biology and Pathology.

Attendance/Participation: Attendance is required. Absenteeism will adversely affect your grade. Active class participation and contribution to class discussions may, in special circumstances, increase your grade. Laptops are welcome for taking notes, however, no internet usage is permitted. All cell phones are to be turned-off during class.

Office Hours: Both Professors will welcome discussions during the week. Appointments are recommended.

Course Grades: Each of the three hourly exams will count for 25% of your semester grade.

A research project will be assigned to each student and will count for 25% of your semester grade. The research project will involve the development of a PowerPoint presentation on an assigned topic. The presentation should be prepared using a plain white background and black text. Pictures or diagrams can be pasted into the presentation. These can be in color (preferred) or in black and white. Grading will be based on content and clarity of the presentation, and not on advanced technical expertise in the use of PowerPoint. Students are encouraged to work together and share information and resources. Grading will **NOT** be based on comparisons with peer submissions. We may select a few of the best presentations to be shown and used in the course.

Research Projects are Due no later than October 1st and should be submitted on a CD disk.

Each presentation should include at least the following elements:

Pictures of live plant and/or dried plant material (i.e. root, bark, leaves etc.) along with a citation of source- whether it is from a book, scientific article or the web, etc.

An Introductory Slide

A List of the Herbs Traditional Uses- along with citations

Dosage(s) and Formulation(s)

Structure of chemical components believed to be associated in part with pharmacologic activity (use ChemDraw for all chemical structures and paste into presentation).

Adverse Effects and Toxicity (if any)

Drug Interactions (if any)

Contraindications (if any)

Slide Providing a Summary of Literature Sources (clear linkage to topics or items in the presentation preferred-be careful in your research not to copy text verbatim as this is plagiarism) and cite as appropriate.

Be sure to provide the full URL cite for any web-based citations. Except for imported pictures, reliance on popular sources rather than scientific sources is unacceptable. Your presentations need to be based upon the use and critical review of the available scientific literature (Published books or Journals Articles) should be cited. We also want to know your final conclusion as to whether the herb, plant, medicinal or dietary supplement should 'work' or not based upon the availability of scientific evidence. That is, does modern science bear out the plant's or herbal's traditional applications? If so, how? If not, what is missing? PowerPoint presentations may be posted on the Medicinal Chemistry website and may form the basis for future lectures in **Herbal Medicines and Nutraceuticals**. Students who develop an exceptional PowerPoint presentation may, at their option, be permitted to present it during class.