

**SAN DIEGO STATE UNIVERSITY
DEPARTMENT OF BIOLOGY**

WARNING: General Education Explorations courses, including Plants, Medicines & Drugs, must not be taken sooner than the semester in which you receive upper division standing (60 units passed). See Graduation Requirements in the General Catalog for more information.

The final university ADD/DROP date is Sept 22, 2008 at 6:00 pm deadline

Posting of Grades: How do I find out what grade I got on the exams and written assignment?

My Grade: The grades will be posted in the back of the room. You supply the PIN number-Do **not** use your social security number or school ID. Also on Blackboard.

Course: Plants, Medicines and Drugs **Schedule No. 04266**
Instructor: Dr. Bizzoco - Office LS 360 Lab LS 362 (South Life Sciences)
email: rbizzoco@sunstroke.sdsu.edu
(619) 594-5396 (Ans. machine) 45396 (on campus)
Office Hours: M & W 1100-1200 and by Appointment

Biology 326 Web Site :

<http://www-rohan.sdsu.edu/faculty/bizzoco/description.html>

email: rbizzoco@sunstroke.sdsu.edu

Practice exams web site: **<http://ecr.sdsu.edu/courseindex.asp>**

Textbook: Do Not Purchase this book several copies are on reserve in the library for optional reading (DO NOT BUY THIS BOOK).

Lewis, W.H. & Elvin-Lewis, M.P.F. Medical Botany, 1977;

At present this is the only available text. A new edition will soon be published

There is a good drug reference book in the library reserve desk under my name, Dr. Bizzoco. The book is by Ken Liska, "Drugs and the Human Body."

Required book: Mark Plotkin, "Tales of a shaman's apprentice" at KB Books."

Course Description: This course will present the relationship between plants and medicine. It will explore the origins of knowledge about medicinal plants, the mechanisms by which they bring about an effect in various diseases and finally what approaches are used today to obtain new medicinal plants for diseases such as diabetes, cancer, acne, etc. It is expected that this information will provide a background on medicinal plants, which will be useful for general knowledge and for health sciences. This is an upper division biology course designed for the non-science student with at least one prior college-level biology course. It is the nature and purpose of this course to increase knowledge and awareness of how medicinal plant use developed and how plant medicines and plant drugs are utilized for treatment of minor and major diseases.

***** WARNING *****

You will not receive upper division general education credit for this class unless you have

60 units

completed at the time you register for this class

A student may take explorations courses if 60 units will have been completed by the end of the semester in which she/he takes the course. See the current general catalog under IV. Explorations

***** WARNING *****

Course Information:

Biology 326 Classroom - NE 60 (North Education 60)

Time: M W F 1000-1050

Schedule No. 04266

Final Exam: Friday, **DEC** 19, 2008 0800-1000

0800-1000 – COM 207 --- Communication 207 at **eight** o'clock in the morning, not at the regular class time.

Final Exam Web Site

http://www.sdsu.edu/schedule/fall07/schedule_fes.html

Class Format: Lectures, slides, videos, and freshly collected medicinal plants used in demonstrations.

Text Assignments: The textbook reading is required for the Plotkin book only. The chapter assignments in the Lewis and Lewis, Medical Botany book are keyed to each lecture topic. The assigned material should be read prior to the lecture topic to provide an adequate background for the lecture. Only **Chapter 1 reading of the Lewis and Lewis** book is mandatory. The lectures will consider each topic in depth. One or two library articles are listed for a few lecture topics. If more information on a lecture topic is desired see the library articles which are listed by lecture topic. If references are needed, see the library list of references for each lecture topic. All library materials and articles are at the reserve desk: Walk into the library dome, then turn left and on the same floor, go down the only floor on the same level. You should be walking away from the direction of the freeway (i.e. south. The reserve desk is at the end of the hallway. Library articles are not required reading, but they sometimes give up-to-date and at the least, interesting if not useful information.

Grading and Evaluation: The two midterm exams are objective. The objective section of the exam consists of multiple choice, matching, and True/False questions. The final exam is also objective and identical in form to the two midterm exams. It covers only the last third of the semester i.e. it is not cumulative. There are 2 lecture exams, a final exam, and an in class writing assignment, included as part of exam 2. The exams and writing assignment are totaled as shown below. Copies of earlier exams appear in the syllabus. Don't ask for the answers, they won't be given to you. You may ask general questions, but not specific ones listed on the exams. You may not ask exam questions by email. So, plan ahead!

| | |
|--------------|------------|
| 2 exams | 200 Points |
| Final exam | 100 |
| Total Points | 300 Points |

Exams Require: NCS Large Green Answer Sheet (PO99B or O99B) with circles for answers; #2 pencil. All exams require a green answer sheet (PO99B or O99B) They are the same sheet, and #2 pencil. In-class writing on exam 2. Pencil or preferably pen. Space provided on the exam.

Make-up Exams: Prior arrangements must be made for a make-up exam. Only **exceptional** circumstances or a medical condition accompanied by a doctor's excuse will be accepted for a make-up exam.

All course work will be graded by letters. The decimal values of plus and/or minus are used in establishing the final course grade. The grades assigned follow the designations listed below.

- A Outstanding achievement, available only for the highest accomplishment.
- B Praiseworthy performance, definitely above average.
- C Average, awarded for satisfactory performance; the most common undergraduate grade.
- D Minimally passing; less than the typical undergraduate achievement.
- F Failing.
- U Incomplete: failing to take an exam without contacting instructor.

How to Prepare Your In Class Writing Assignment:

1. First organize your topic.
2. Second, prepare an outline and detail for yourself the major point(s) you wish to consider in the essay answer.
3. Third, write your essay answer in a coherent fashion by developing sentences and paragraphs which are designated to make a point that you wish to convey to the reader. Remember, you are writing so you can communicate your thoughts to a reader.
4. Finally, after you have finished your essay, if time permits, proofread it for spelling and grammatical errors. Then, if possible, have another individual read it for content and impact.

Grading Standards for Writing Assignments. Written essay answers will be graded on the following points: Ideas, significance, organization, coherence of presentation, clarity of thought, appropriateness of presentation, and impact of overall presentation.

In Class Writing Assignment

Goal. The goal of the General Education writing component of this course is to enable students to relate the class experience to everyday life. We seek to provide students with the ability to find value in the traditional healing practices and resources as they relate to the western way of life. Finally, students should be able to appreciate value in such traditional healing practices and communicate this value and their level of understanding in an organized fashion through a written assignment. The written component will offer an opportunity for testing a student's ability to tie together two or more ideas, especially as they relate to the general aspect of the western way of life and medical practice. The class writing assignment is therefore a test of student capacity to synthesize, associate, and apply knowledge presented in the lectures.

Grading Standards

The in class writing assignment will be graded on the following points: Originality of ideas, significance of topic, organization of topic, depth of literature search, coherence of presentation, clarity of thought, appropriateness of presentation, impact of overall subject.

All writing grades are by number. The grades assigned follow the designations listed below:

| | | |
|-------|---|---|
| 90+ | A | Outstanding achievement, available only for the highest accomplishment. |
| 80-89 | B | Praiseworthy performance, definitely above average. |
| 70-79 | C | Average, awarded for satisfactory performance; the most common undergraduate grade. |
| 60-69 | D | Minimally passing; less than the typical undergraduate achievement. |
| 50-60 | F | Failing. |

CRITERIA FOR GRADING

A writing assignment will have a well thought out introduction with a clear statement of the problem, subject or issue considered. It will relate the context of the problem being studied and will introduce all elements of the problem or question in a logical step-by-step fashion. The writing will be clear, use appropriate words that properly describe the content, context or subject under consideration. There will be few or no spelling errors, or phonetic substitutions.

Further, subject number will match predicate number. There will be no incomplete or run-on sentences; the grammar will consist of practices generally accepted for constructing correct English sentences. Also factoring into grading are 1) Content, as an example, one might discuss the significance of the rainforest. 2) Organization, the idea presented or the structure of the message. By this is meant, does the writer have the reader in mind and does the writer assume that the reader knows the subject, rather than provide the information that the writer wants the reader to have. Is the writer talking to himself, rather than his reader. This is a big mistake. Provide the reader with the information you want the reader to have at their disposal. Do not make any assumptions about the level or state of knowledge of the reader. Provide the necessary information to develop your point of view. 3) Creativity, do you have a fresh interesting subject that you are developing. Some writers simply have offered a summary of the Plotkin book. This represents a minimal output. 4) What is the nature of your message? Is it significant? Has it touched on life in some unique or interesting way? What is the main point of your writing?

The written assignment counts as follows:

30/100 points of exam 2 (30%)

30/300 = 10% of final grade

The writing component is a **mandated** part of all "Explorations" courses. The specific and **mandated** requirements of this course include an in-class written assignment. Based on the above calculations students should realize that the writing assignment will significantly affect the letter grade received in this course. Again, this is a CSU faculty senate **mandated component** of this class.

Posting of Grades

To obtain your grades after they are available, go to the back of the room NE 60.

Biology 326 Web Site: <http://www-rohan.sdsu.edu/faculty/bizzoco/description.html>

Past exams web site: <http://ecr.sdsu.edu/courseindex.asp>

Biology 326 Plants Medicines & Drugs

Fall 2007

Prerequisites: biological sciences course **Professor:** Rick Bizzoco

Lecture: Mon Wed Fri **1000-1050 COM 207 (Communication 207)**

Office: South LS 360 (South Life Sciences 360)

Office hours: M & W 11-12:00 and by appt.

Office Phone: (619) 594-5396

Email: rbizzoco@sunstroke.sdsu.edu

Contacting me: See or call me during office hours or by appointment. Leave messages, etc., in my Biology Department (LS 104) mailbox, the main biology office, North Life Sciences. Email a message, leave a voicemail.

COURSE LEARNING OBJECTIVES

- After taking this course students should be able to:
Apply basic concepts from plant biology (plant structure, development, production of medicinal components) to the area of herbal medicine – the use of plant components for healing purposes.
- Analyze the components of labeled herbal products or drugs to address the question – What purpose does a specific plant chemical or drug serve?
- Describe the basic aspects of the several features of healthy oral hygiene and understand how to intervene in order to prevent disorders of the teeth and gums at any age of oral maturity.
- Understand the process of aging and longevity in order to adjust activities to maximize both health and life span.
- Enumerate and comprehend the effects of vitamins, minerals and other supplements needed to support and sustain basic nutrition and health, and to correct health disorders.
- Evaluate the conceptual basis for the development of herbal medicines in the USA vs. the European continent and be able to answer questions about basic medical plant herbology.
- Appreciate the complexity and diversity of medicinal plants, where they come from, how they were discovered and how they differ from poisonous plants and other harmful natural products.
- Identify and distinguish between helpful and harmful plant products in order to appreciate the subtlety of plant medicines and how they can be used to restore or maintain health.
- Understand at a fundamental level the effect of distinct plant medicines on the nervous system and how such medicines bring about their specific effects on the body by means of interactions with the nervous system.
- Demonstrate an understanding of basic plant drug groups organized by their chemical principles or groups.

Date **Lecture Topic**

**Text Source:Medical Botany
Lewis & Lewis**

1. Historical Aspects of Medicinal Plants

Jan 23 Introduction: Overview of Class

Chap. 1 (all) required reading

Jan 26 Plants: Visible world

Jan 28 Plants: Invisible world

Jan 30 History of medicinal plants

Library ECR: Required

Reading, John Lust

Herb Book p. 3-5; 10-17;

Doctrine of Signatures

In-class demonstration

Feb 2 History of medicinal plants

Feb 4 Physical Properties: color and odor

Feb 6 Growth and preparation of herbal medicines

Feb 9 Growth and preparation of herbal medicines

In-class demonstration

Feb 11 Alternative Medicine: Plants vs. Drugs,

**Feb 11 last day to add/drop class
or change grading basis
6 pm**

Feb 13 Alternative Medicine:

Patent medicine vs. Generic drugs & laws

2. Toxic and Poisonous Plants

Feb 16 Poisonous Properties

Chap. 2:11-20

Feb 18 Poisonous Properties

(omit tables and figure)

Feb 20 The nervous system: The action of drugs, (Exam 1 review)
6

Chap.6:150-164;Figs 6-3, 6-5,6-6

Feb 23 Allergy

Chap. 3:64-68, 73-74, 76-78

Feb 25 **Exam 1 (Wednesday)**

Feb 27 Allergy drugs and treatments

Chap. 3: 81-82; 86

3. Indian Uses of Medicinal Plants

Mar 2 Plants of Mexico: Aztec Medicinal Plants

Mar 4 Plants of Mexico: Aztec Medicinal Plants

Mar 6 Medicinal Plants and Tropical rain forests

Read Plotkin Book

Shaman's Apprentice

See video: media reserve

Tales of a Shaman's

Apprentice

Mar 9 Medicinal Plants and Tropical rain forests

4. Herbal Medicines

Mar 11 Skin

Chap. 14:336-338,340,343,347 (bottom), 353, (top)

Mar 13 Skin

Chap. 14 (see above)

Mar 16 Oral Hygiene (teeth)

Chap. 10:226-230; 242-243, 246.

Mar 18 Oral Hygiene (teeth)

Omit Table10-2

Mar 20 Circulatory System

Chap. 7 (all)

| | | | |
|-----|----|---|-------------------------------|
| Mar | 23 | Plants of Witchcraft | Chap. 18:406,416-417, 419-424 |
| Mar | 25 | Birth Control | Chap. 13:316-321 |
| Mar | 27 | Birth control | |
| Mar | 30 | Spring Recess | |
| Apr | 1 | Spring Recess | |
| Apr | 3 | Spring Recess | |
| Apr | 6 | Aphrodisiacs (Exam 2 Review) | |
| Apr | 8 | Aphrodisiacs (Aphrodisiacs will be on Final exam, not Exam 2) | Chap. 13:324; 326-327,331-332 |
| Apr | 10 | Exam 2 (Friday) | |
| Apr | 13 | Vitamins | |
| Apr | 15 | Vitamins | |
| Apr | 17 | Longevity | |
| Apr | 20 | Longevity | |

5. Psychoactive Plants

| | | | |
|-----|----|---|------------------------|
| Apr | 22 | Psychoactive Plants: panaceas & cure-alls | Chap. 16: 372-373, 376 |
| Apr | 24 | Psychoactive Plants: Depressants | Chap. 19:437-442 |
| Apr | 27 | Psychoactive Plants: Depressants | |
| Apr | 29 | Psychoactive Plants: Stimulants | Chap. 17 |
| May | 1 | Psychoactive Plants: Stimulants | |
| May | 4 | Psychoactive Plants: Hallucinogens | Chap. 18:406,416-417, |
| May | 6 | Psychoactive Plants: Hallucinogens | 419-424 |
| May | 8 | Anesthetics: Xylocaine, Cocaine, etc. & Final Exam Review | Chap. 17:381-381 |
| May | 11 | Headaches and headache drugs | |
| May | 13 | Last day of class | |

May 15 **FINAL EXAM (Friday)** in NE 60

0800-1000

The final exam begins at 0800 (eight o'clock)

Explanation of reading sources: All library articles are listed under Biology 326 in the library reserve room which is just south (to the left) of the dome entrance to the library. The library reading is helpful, but only Chapter 1 of the Lewis & Lewis, Medical Botany book and all of the Mark Plotkin book, Tales of a Shaman's Apprentice and the Herb Book and Doctrine of Signatures (ECR document) are required reading. The pages that apply for optional readings in the Medical Botany book also appear on the class web site: <http://www-rohan.sdsu.edu/faculty/bizzoco/description.html>

The library electronic reserves with exams or articles can be accessed through a link on the web site for this class. You will need an Adobe PDF reader (www.adobe.com) and the password is available in class or from the instructor.

Practice exams at library Electronic Class Reserve ECR web site: <http://ecr.sdsu.edu/courseindex.asp>
Videos are in the Video Reserve room in the basement of the library under the dome. There are several videos on reserve, including the Plotkin video, Tales of a shaman's apprentice.

All text book pages are in Lewis and Lewis, Medical Botany and are resource reading. Material in (1) CHAPTER 1 and other readings, (2) Herb Book and (1) Doctrine of Signatures, are assigned reading and appear on exam 1. Look at the specific page assignments on the class web site. See above for the ECR URL, the so-called **uniform resource locator/universal resource locator**. **http** = hyper text transfer protocol.