



COURSE CALENDAR DESCRIPTION:

A botanical and historical survey of medicinal, hallucinogenic and poisonous plants used in various cultures.

INSTRUCTOR:

N. Kenkel, Professor
Room 432, Buller Building
Office telephone: 474-6889
Email: kenkel@cc.umanitoba.ca
Website: <http://home.cc.umanitoba.ca/~kenkel/>

LECTURES:

Tuesdays and Thursdays, 1:00 - 2:15 PM (Fall term)

OFFICE HOURS:

By email appointment.

TEXTBOOK:

There is no textbook for this course. A copy of the **BIOL 3290 Course Notes** should be purchased from the *University Bookstore*.

MARKING SCHEME:

Midterm Exam* (35 minutes)	30%
Final Exam** (2 hours)	70%

* *During class time, in lecture classroom.*

** *Date, time and location scheduled by University.*

Both examinations are multiple choice:

- Midterm exam, 40 questions.
- Final exam, 100 questions.

The final examination will include only material covered *after* the midterm.

MATERIAL COVERED BY EXAMS:

You are responsible for all material covered in the **BIOL 3290 Course Notes** and in lecture. In addition, "**Internet Assignments**" will occasionally be given at the beginning of class. You are responsible for Internet Assignment material as well; questions related to this material will appear on the examinations.

ATTENDANCE:

The University of Manitoba Academic Regulations state that "Regular attendance is expected of all students in all courses".

PLAGIARISM AND CHEATING:

Plagiarism, cheating or impersonation in the completion of assignments, and at examinations, are very serious offences. Refer to the University of Manitoba Academic Regulations for definitions and penalties.

DISCLAIMER:

This course offers a botanical and historical survey of medicinal, hallucinogenic and poisonous plants used by various societies and cultures. The course is **not** intended as a guide to the personal use of medicinal, hallucinogenic or poisonous plants. The ingestion or use of many of the plant products discussed in this course can be dangerous, even fatal.

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COURSE OUTLINE:

HISTORY OF MEDICINAL PLANTS

- Medicine and pharmacology: European, Chinese, Arabic, Ayurvedic (Indian Hindu).

HISTORY OF PSYCHOACTIVE PLANTS: ENTHEOGENS

- Entheogens in history.

PLANT BIOCHEMISTRY

- Secondary products: alkaloid, terpenoid, phenolic.

POISONOUS FUNGI AND PLANTS

- Fungi: fungal molds; ergot; death cap mushroom.
- Vascular plants: monkshood; poison hemlock; water hemlock; castor bean; rosary pea.

DETERRENTS FROM FUNGI AND PLANTS

- Fungal antibiotics: penicillin.
- Insecticides: pyrethrum; neem; rotenone; mint oils.

MEDICINAL PLANTS: CANCER TREATMENTS

- Rosy periwinkle; Pacific yew; mayapple; tree of joy; bush willow; dysoxylum; white birch; plum yew.

MEDICINAL PLANTS: ADAPTOGENS, OPHTHALMOLOGY, METABOLISM & IMMUNE SYSTEM

- Adaptogens: ginseng.
- Ophthalmology: calabar bean; jaborandi.
- Metabolism: colchicine.
- Immune system: echinacea.

MEDICINAL PLANTS: HEART & CIRCULATORY SYSTEMS

- Hypertension: Indian snakeroot.
- Cardiotonic: foxglove.
- Anti-malarials: quinine; artemisinin.

MEDICINAL PLANTS: GASTROINTESTINAL & UROGENITAL SYSTEMS

- Urogenital system: wild yam; saw palmetto.
- Gastrointestinal tract: senna; cascara; ipecac.

MEDICINAL PLANTS: MUSCOSKELETAL SYSTEM

- Muscle relaxants: curare.
- Other arrow poisons.

MEDICINAL PLANTS: CENTRAL NERVOUS SYSTEM

- Analgesics: white willow; capsicum pepper, pincushion plant.
- Hypnotics and sedatives: valerian.
- Anti-depressants: St. John's wort.
- Memory loss: ginkgo; caucasian snowdrop.

PLANT STIMULANTS: ORAL & SMOKED STIMULANTS

- Definitions: stimulants, depressants, hallucinogens.
- Oral & smoked stimulants: betel; tobacco; khat; coca.

PLANT STIMULANTS: AMPHETAMINES & CONVULSANTS

- Amphetamines: ephedra.
- Convulsants: strychnine.

PLANT STIMULANTS: CAFFEINE

- Caffeinated beverages: coffee, tea, yerba maté, guayusa, cocoa, cola, guarana.

PLANT DEPRESSANTS

- Tranquilizers: Indian snakeroot; kava.
- Opiates: opium poppy.
- Alcohol: ethanol.

HALLUCINOGENS: SEROTONIN ENHANCERS

- Psilocybin mushrooms; snuffs (virola, yopo, cébil); ayahuasca; ololiuqui; ergot and LSD; iboga.

PLANT STIMULANTS: NOREPINEPHRINE & GABA ENHANCERS

- Norepinephrine enhancers: peyote; San Pedro cactus.
- GABA enhancers: fly agaric mushroom.

HALLUCINOGENS: DELIRIANTS

- Solanaceous plants; henbane and belladonna; mandrake; datura; brugmansia; pituri.

NON-ALKALOID HALLUCINOGENS

- Nutmeg; marijuana; salvia; absinthe.

