

**Eastern Illinois University
Revised Course Proposal
BIO 1002G, Practical Botany**

4/26/07 CAA, effective Spring 2008

Course description revised to "This course will introduce students to the importance of plants in their daily lives. General botanical principles will be taught with emphasis on instructing students in methods of identification, growth and maintenance of plants used in landscaping, gardening, and interiorscaping. Does not count toward the Biological Sciences major or minor. Credit for BIO 1002G will not be granted if the student already has credit for or registration in BIO 1092G or BIO 1200G."

1. Catalog Description

- a. Bio 1002-G
- b. Practical Botany
- c. 2-2-3
- d. F, S, Su
- e. Practical Botany
- f. This course will introduce students to the importance of plants in their daily lives. General botanical principles will be taught with emphasis on instructing students in methods of identification, growth and maintenance of plants used in landscaping, gardening, and interiorscaping. Does not count toward the Biological Sciences major or minor.
- g. No prerequisite
- h. Spring Semester, 2004

2. Objectives and Evaluation of the Course

- a. The objective of this course is to teach students skills in growing, maintaining, propagating and identifying plants. These are life long skills that the student will have that can enrich their lives. These skills can lead to career opportunities for the students in agricultural, landscaping, interiorscaping or plant nursery fields. These same skills can allow the student to one day have that perfect vegetable or flower garden (gardening is the number one leisure activity in America); a well maintained yard with a pest free lawn and well chosen trees and shrubs for energy conservation and beauty; houseplants that are the envy of all their friends. Because of their ability to identify and their understanding of the importance of several plants the students will derive greater enjoyment from their next walk in the woods or stroll around their neighborhood.
- b. Students will develop an understanding for the vital roles that plants have in the ecosystem and the significance of saving plant genetic diversity (responsible citizenship): develop an understanding of the scientific method and appreciate its utility as a problem solving tool for use in many situations (critical thinking); perform numerical calculations as they analyze laboratory data as well as present and interpret data through preparation and interpretation of graphs (critical thinking); learn the responsible use of chemicals such as fertilizers and pesticides (responsible citizenship); sharpen their reasoning abilities as they interpret and analyze the data collected in the laboratory exercises (critical thinking); participate in class discussions and give oral presentation of experimental data and results to practice effective speaking skills (effective speaking); be exposed to proper writing styles in the textbook and supplemental reading materials which will help the students develop effective writing techniques (effective writing); convey their opinions and understanding of botanical information through various writing active assignments such as laboratory reports, essay type exam questions and written class projects (effective writing)
- c. Three hourly exams will cover material from both lectures and laboratories. Exams will include objective, short answer and essay types of questions.

Twelve to fourteen laboratory reports will include specific essay type questions that require proficient writing skills and critical thinking. Some of the reports will require simple mathematical analysis of data and possibly graphing of analyzed data.

One written project will be a short paper (two to three pages) on a social issue involving plants. Suggested topics could be: feeding the growing human population; the importance of saving plant genetic diversity; how plant biomass could solve the world energy crisis; plant solutions to pollution; genetically modified foods; ground water contamination from lawn and farm chemicals. Students will be encouraged to "discover" their own topic.

The Final Examination will be comprehensive and will contain material from both the lectures and laboratories. The format will include objective, short answer and essay questions.

d. This course is not numbered 4750-4799.

e. The course is writing active

3. Outline of the Course - 15 weeks of thirty 110 minute class periods

One Week

Examinations

One Week

Introduction to the class; historical information on the field of botany and horticulture's role in the botanical sciences; importance of plants in daily life and plant classification; importance of maintaining plant biodiversity and techniques used to maintain genetic diversity

Laboratory exercise on the use of botanical keys; campus tour and /or greenhouse tour with an emphasis on classification

Three Weeks

Plant morphology, anatomy and life cycles

Laboratory exercises on flowers, fruits, seeds, vegetative structures and modified plant structures

One Week

Plant physiology; environment factors and how these factors effect plant growth and plant physiology

Laboratory exercise on the effects of various light intensities, temperatures and watering on plant growth , development and seed germination

Two Weeks

Soil characteristics - including soil structure, pH, soil minerals, water relationships, soil microbes, commercial or natural fertilizers and composting

Laboratory exercises on soil testing for pH, texture, and mineral deficiencies; environmentally sound methods of fertilizer application; composting

One Week

Identification of plant pests and the environmentally and socially responsible use of pesticides; alternative strategies for pest management including genetic engineering for resistance

Laboratory exercise on weed and insect pest identification; identification of plant diseases caused by bacteria, viruses and fungi; interpretation of pesticide labels.

One Week

Regulation of plant growth via hormones and pruning

Laboratory exercise on pruning techniques for woody and fleshy plants; hormone application experiment

One Week

Landscape design with woody evergreens and deciduous plants; including tree and shrub planting techniques

Laboratory exercises on the identification and selection of woody landscape plants and the development of a landscape plan for a commercial building, park or home

One Week

Interiorscaping with emphasis on plants used in commercial buildings and private homes

Laboratory exercise on the identification and care of plants used in the field of interiorscaping; floral design; use of terrariums

Two Weeks

Principles involved with successful vegetable, herb, fruit and/or flower gardening; methods for the selection of suitable annuals, biennials, perennials, ground covers, vines, etc. for the garden location; growing plants from seeds vs nursery stock

Laboratory exercise on the identification of plant materials, seed gardening project and landscape design project

One Week

Lawns from seed or sod; planting and maintenance of home lawns and commercial lawns (golf courses, parks, etc.)

Laboratory exercise on the identification of lawn grasses for full sun vs shade and heavy use vs light use; methods for maintaining a healthy lawn including trimming, watering, fertilizing, pest control, and seeding

4. Rationale

a. Purpose and need:

This course meets the requirements of the biological sciences component of the Scientific Awareness segment of the general education core and it provides a laboratory experience. Students will learn basic facts and principles of the botanical sciences, including plant structure, classification, reproduction and physiology. This botanical knowledge will help them understand basic cultural principles related to plant propagation, soil, water, fertilizers, pest and the environment. This applied science information will show students how to use plants successfully for personal enjoyment and possible career opportunities. During the hands-on laboratory experiences, students will learn how scientific method is used to aid understanding in the botanical sciences. The historical importance of plants will be used to relate to current environmental and social concerns.

b. This is an introductory course with no prerequisites so it is appropriate for a freshman level course.

c. Some topics may overlap with Biology 3312 - Horticulture - but this is a majors' class, with in-depth material. It is a 3000 level course with a prerequisite of Biology 1100, so the class will not serve the needs of the same students. This is not a new course. No courses will be deleted. No program modifications are required.

d. This course is not required for any specific program, major or minor.

5. Implementation

- a. Janice Coons, Nancy Coutant, Cheryl Laursen, Gordon Tucker
- b. A \$10.00 lab fee will be charged and an additional fee up to \$5.00 dollars will be charged if the instructor includes an off campus field trip in the class. This additional \$5.00 fee will be used to pay for university van rental to transport students on the field trip.
- c. Textbook: *Practical Horticulture* by Laura Williams Rice and Robert P. Rice, Jr., Fifth edition, Prentice Hall, Upper Saddle River, New Jersey, 2003.
Laboratory handouts or manual: laboratory handouts or manual will be prepared by the instructor.

6. A community college course may be judged equivalent to this course.

7. Date approved by the department or school April 13, 2003

8. Date approved by the college curriculum committee May 2, 2003

9. Date approved by CAA August 28, 2003