

College of San Mateo

Course Outline

- New Course
 Update/No change
X Course Revision (Minor)
 Course Revision (Major)

Date: Nov. 2010

Department: Biology

Number: 220

Course Title: General Botany Units: 5.0

Total Semester Hours Lecture: 48 Lab: 96 Homework: 96 By Arrangement: 0

Length of Course

- X Semester-long
 Short course (Number of weeks ___)
 Open entry/Open exit

Grading

- X Letter
 Pass/No Pass
 Grade Option (letter or Pass/No Pass)

Faculty Load Credit (To be completed by Division Office; show calculations.): 7.8
lecture: $48/16 = 3$ lab: $0.8*96/16 = 4.8$; total = 7.8

1. **Prerequisite** (Attach Enrollment Limitation Validation Form.)
Math 120 or Math 123 or equivalent.

2. **Corequisite** (Attach Enrollment Limitation Validation Form.) None.

3. **Recommended Preparation** (Attach Enrollment Validation Form.)

Completion of READ 830 with a grade of C or higher and concurrent enrollment in READ 400 or 405 OR appropriate skill level as indicated by the reading placement tests or other measures; successful completion of a BIOL 110 or 195 or equivalent biology course with lab and CHEM 192 or 210 or 410 or equivalent chemistry course with a lab.

4. **Catalog Description** (Include prerequisites/corequisites/recommended preparation. For format, please see model course outline.)

220 General Botany (5) Minimum of 48 lecture and 96 lab hours per term. Prerequisite: Math 120 or Math 123 or the equivalent. Recommended Preparation: completion of READ 830 with a grade of C or higher and concurrent enrollment in READ 400 or 405 OR appropriate skill level as indicated by the reading placement tests or other measures; successful completion of a BIOL 110 or 195 or equivalent biology course with a lab and CHEM 192 or 210 or 410 or equivalent chemistry course with a lab. Principles of biology as illustrated by plants with emphasis on structure, physiology, evolution, diversity, and reproduction in green plants. One or more field trips may be required. Extra supplies may be required. A materials fee in the amount shown in the Schedule of Classes is payable upon registration. (AA: Area E5a, CSU: Area B2/B3, UC: Area 5B)

5. **Class Schedule Description** (Include prerequisites/corequisites/recommended preparation. For format, please see model course outline.)

BIOL 220 GENERAL BOTANY

Biology principles illustrated by plants, emphasizing structure, physiology, diversity, and reproduction in green plants. One or more field trips may be required. Extra supplies may be required. A \$___ materials fee is payable upon registration. Prerequisite: Math 120 or Math 123 or the equivalent. Recommended Preparation: completion of READ 830 with a grade of C or higher and concurrent enrollment in READ 400 or 405 OR appropriate skill level as indicated by the reading placement tests or other measures; successful completion of a BIOL 110 or 195 or equivalent biology course with lab and CHEM 192 or 210 or 410 or equivalent chemistry course with a lab. (AA: Area E5a, CSU: Area B2/B3, UC: Area 5B)

6. **Student Learning Outcomes** (Identify 1-6 expected learner outcomes using active verbs.)

Upon successful completion of the course, the student will be able to:

1. Demonstrate understanding of the environmental and ecological importance of plants
2. Recognize members of the major phyla and classes of plants (diversity), and demonstrate proficiency in the use of a dichotomous key to identify plant at the family and genus level
3. Demonstrate understanding of mitosis, meiosis, and plant reproduction and life cycles
4. Demonstrate understanding of the principles of evolution as demonstrated by plants
5. Perform, document, and analyze scientific experiments, and apply critical thinking to explain laboratory results
6. Demonstrate understanding of plant structure, developmental processes, and function at different levels from molecular to cellular to organismal; including the understanding of primary and secondary metabolic processes in plants
7. Demonstrate proficiency in the use of the compound microscope in the examination of plant tissues and structures

7. **Course Objectives** (Identify specific teaching objectives detailing course content and activities. *For some courses, the course objectives will be the same as the student learning outcomes. In this case, "Same as Student Learning Outcomes" is appropriate here.*)

Same as student learning outcomes.

8. **Course Content** (Brief but complete topical outline of the course that includes major subject areas [1-2 pages]. Should reflect all course objectives listed above. In addition, a sample course syllabus with timeline may be attached.)

Course content attached

9. **Representative Instructional Methods** (Describe instructor-initiated teaching strategies that will assist students in meeting course objectives. Describe out-of-class assignments, required reading and writing assignments, and methods for teaching critical thinking skills. **If hours by arrangement are required, please indicate the additional instructional activity which will be provided**)

during these hours, where the activity will take place, and how the activity will be supervised.)

- Lecture accompanied by computerized demonstrations and presentation materials, transparencies, and other supplementary visual material
- Laboratory work with fresh and preserved plant material, prepared slides, and experiments
- Discussions
- Videos; computer simulations, and animations
- Field Trips to local parks, botanical gardens, tidepools, and other natural settings suitable for the observation and study of plants
- Field Trip written reports; homework reports
- Laboratory reports
- Studies of Fast Plants[®] as model organisms for understanding genetics inheritance in plants

10. **Representative Methods of Evaluation** (Describe measurement of student progress toward course objectives. Courses with required writing component and/or problem-solving emphasis must reflect critical thinking component. If skills class, then applied skills.)
- lecture exams consisting of multiple-choice questions, fill-in questions, matching, and short answer and essay questions.
 - lab practical examinations
 - poster and oral presentation illustrating a plant family and its evolutionary features
 - individual field trip reports; lab reports; homework assignments; and a report on selected campus trees

11. **Representative Text Materials** (With few exceptions, texts need to be current. Include publication dates.)
Introductory Plant Biology. K. R. Stern, J. Bidlack and S. Jansky. McGraw -Hill. 2010;
Botany: An Introduction to Plant Biology. James D. Mauseth. Jones & Bartlett Publishers. 2008

Prepared by: _____
(Signature)

Email address: beliz@smccd.edu

Submission Date: _____