



## BIOL 2300

**Division:** Natural Science and Mathematics

**Department:** Biology

**Course:** BIOL 2300

**Title:** Plant Taxonomy

**Catalog Description:**

This course introduces general principles of taxonomy and use of manuals (Floras) with emphasis on the identification and classification of common families and genera of flowering plants and selected other vascular plants.

**General Education Requirements:** Individual Choice

**Semesters Offered:** Fall

**Credit/Time Requirement:** Credit: 3; Lecture: 3; Lab: 0

**Clock/Hour Requirements:** 0

**Offered for Non-Credit:** No

**Prerequisites:** None

**Corequisites:** BIOL 2305 (Plant Taxonomy Lab)

**Justification:**

BIOL 2300 is designed to fulfill the in-depth general education requirements in the Life Sciences for the Associate of Science degree for majors.

BIOL 2300 is required/recommended for majors in Biology, Botany, Natural Resources (Forestry, Range Science and Wildlife Resources) and other plant sciences such as horticulture. Some students take this course as an elective because they are interested in nature and want to know more about the flowers and other plant life around them. It is particularly helpful for those in Elementary Education (SUU recommends this course for elementary teachers), and agricultural areas.

Equivalent courses are taught at USU (Biol 4420, Plant Taxonomy); WSU (Bot 3624, Taxonomy of Vascular Plants); DSC (Biol 4200, Plant Taxonomy), and BYU (Bot 430, Plant Classification).

**Student Learning Outcomes:**

1. To learn the fundamentals of plant classification.
2. To become familiar with the common Flora of Utah.
3. To learn the distinctive traits and characteristics, ecologic and economic importance and phylogenetic relationships of selected angiosperm families, genera, and species.

4. To learn how to collect, identify, and press plant specimens.

4. To achieve these objectives, field collection trips are scheduled to collect, press, and identify plant specimens.

### **Content:**

This course will include: 1. The aims of Plant Taxonomy. 2. The construction and use of dichotomous keys for plant classification. 3. Concepts of Taxa. 4. The use of the Binomial Nomenclature. 5. Field and herbarium methods: collecting and pressing plant specimens. 6. Techniques in plant identification. 7. Phytography and Terminology: roots, stems, buds, leaves, color, and surface characters. 7. Flowers and flower variations. 8. Inflorescences. 9. Floral formulas. 10. Fruits and seeds. 11. Review of historical development of classification systems. 12. Angiosperm (Magnoliophyta) classification. 13. Selected monocot (Liliosida) families: - Alismaceae -Liliaceae -Iridaceae -Orchidaceae -Cyperaceae -Graminaceae 14. Selected dicot (Magnoliopsida) families: Group A, Thalamiflorae: -Magnoliaceae -Ranunculaceae -Malvaceae -Geraniaceae -Cruciferaeae - Polygonaceae -Chenopodiaceae -Cucurbitaceae -Cactaceae -Salicaceae -Fagaceae -Betulaceae -Jungladaceae - Aceraceae Group B: Carolliflorae: -Polemoniaceae -Solanaceae -Scrophulariaceae -Hydrophyllaceae - Boraginaceae -Labiatae Group C: Calyciflorae: -Rosaceae -Leguminaseae -Umbelliferae -Onagraceae - Group D: Ovariflorae: -Caprifoliaceae -Asteraceae (Compositae)

### **General Education Outcomes:**

7) Apply scientific reasoning to a variety of contexts.

Students will gain an appreciation for plants and how we depend on these photoautotrophs (producers) in relation to us as heterotrophs (consumers). They will also understand this intricate plant-animal relationship. This will be assessed by the assignments.

### **Key Performance Indicators:**

1. Daily quizzes will be given at the beginning of class (15% of grade); Attendance (5% of grade) will be taken into consideration; a mid-term (40% of grade) and a final exam (40% of grade) for a total of 100% of the grade. These percentages are approximate.

### **Representative Text and/or Supplies:**

1. Judd, et al. Plant Systematics -A Phylogenetic Approach. Current edition. Sinauer Associates, Inc. Sunderland, Massachusetts.2. Welsh, S.L., N.D. Atwood, S, Goodrich, and L.C. Higgins. Current edition. A Utah Flora. Brigham Young Univ., Provo, Utah.

**Optimum Class Size: 15**

**Maximum Class Size: 24**

**Signatures:**

I hereby submit this course syllabus:

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Allan Stevens, , Professor

I hereby find this course consistent with the goals and resources of the Biology Department:

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Allan Stevens, , Professor, Chair

I hereby find this course consistent with the goals and resources of the Natural Science and Mathematics Division:

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Dan Black, EdD, Associate Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)