

The purpose of this Review Guide is to orient your study of the topics we have encountered so far but from a more comprehensive (“bird’s eye view) viewpoint so that you can identify major themes and principles. By this approach, you will hopefully be able to identify the targets needing your consideration as you use your study time effectively.

- I. COURSE OBJECTIVES – Consult the Syllabus, p.1, to reread the following key objectives:
 - A. Knowledge – Obj. #1 and 2 (morphology and family recognition), and 4 (e.g. OSU trip)
 - B. Skills – Objectives #5, 6, and 7 (lab work), and 8 (e.g. OSU trip-related & other websites).
 - C. Attitudes-Values – (#9-12) sensitive to developing these in your study & prep. for future.

- II. COVERAGE – All topics listed in the ‘Lecture/Lab Schedule’ for this unit of study
 - A. Lecture – Text, Chapters 10-11, and 12-16 as support for selected families we’ve studied
 - B. Laboratory – Review notes from visual contact with the plant taxa involved in A (above)

- III. STUDY RESOURCES:
 - A. Text, Lecture notes/handouts/quizzes, and PowerPoint slides
 - B. Laboratory – Lab worksheets, dissection notes, herbarium & preserved specimens

- IV MAJOR PERFORMANCE GOALS:
 - A. Gymnosperms:
 1. List scientific name of each of the gymnosperm families, give one or two common genera included in each family, and explain what distinguishes each.
 2. Review morphological terminology necessary to distinguish each family.

 - B. Angiosperms -- Master definitions and apply terminology describing the following
 1. Flower Morphology
 - a. Generalized flower
 - b. Perianth and variations – number, sepal-petal variations, conation, symmetry
 - c. Androecium – stamen parts, number, conation, adnation
 - d. Gynoecium – number, conation, placentation, position
 - e. Floral formulae and floral diagrams
 2. Inflorescence Types
 - a. Indeterminate – e.g. spike, raceme, panicle, corymb, umbel, head
 - b. Determinant – cymes of various forms similar to the indeterminate inflorescences
 3. Fruit Types
 - a. Fleshy ovary walls at maturity – name and distinguish types of fleshy fruits
 - b. Dry fruits have dry walls at maturity, some splitting and some nonsplitting

 - C. Plant Taxonomy and Systematics – continuation of our study of theory of taxonomy
 1. Angiosperm Family Recognition:
 - a. Distinguishing families such as Liliaceae, Scrophulariaceae, Brassicaceae, and Araceae based upon principal morphological characters noted in Part B.
 - b. Family comparison using techniques such as floral formulae and floral diagrams
 - c. Application of B.1. thru 3. (above) to selected families we have discussed (list from your notes and slides and know family scientific names and identifying features; some are more prominent than others at this point).

2. Classification Challenges:
 - a. Discontinuity Systematics – see Frair article and two application articles on the BIO 3520 Baraminology page
 - i. Make a case to defend against the accusation that *discontinuity systematics* (D.S.) is biased by presuppositions and not “moved by the data?” Could the accusation be “turned around” and applied to the critics? Explain.
 - ii. In what sense is *baraminology* more presuppositionally influenced than D.S.?
 - iii. How are the concepts of *monobaramin*, *apobaramin*, and *polybaramin* consistent with the goal of baraminology to identify boundaries of holobaramins. Illustrate your answer using the case of *Schistosoma* or *Flaveria*. What support is there for Wood’s concept of “mediated design?”

3. Ohio State Univ. Trip;
 - a. Not greatly emphasized on the exam but will provide tangible examples and support for what we have been learning.
 - b. Example: How might one account for the genetic, enzymatic, and pigment differences among species of orchids of the genus *Corallorhiza*...
 - i. ...from the standpoint of adaptive fitness and economy of resources?
 - ii. ...from a creationist or phylogenetic perspective?