

Some Things to Review for 3402L Exam

Know your floral anatomy and the functions of the following: anther, filament, petal, sepal, stigma, style, ovary, stamen, and pistil, pollen grain, ovule

Be able to define, perfect flower, monoecious, dioecious, self-incompatible, self-compatible

Know what pollen vectors are (biotic and abiotic) and the basis for their relationship with plants. Be able to define and differentiate generalist and specialist pollination strategies.

Know what a pollination syndrome is and the GENERAL features of the major syndromes; bee, moth, butterfly, bird, bat, wind, deceit

Know the applied significance of pollination biology.

Be able to define science and hypothesis clearly and completely

Know what the scientific method is and be able to explain why science never proves anything

Be able to define inbreeding, outcrossing, geitonogamy, and xenogamy

Know the advantages and disadvantages of selfing and outcrossing

Be able to list and define floral adaptations that promote selfing and outcrossing; herkogamy, dichogamy, protandry, protogyny, self-incompatibility

Be able to define and explain the basic premise for optimal foraging theory. Know how the theory relates to pollination biology and what features of pollination systems contribute to costs and benefits of foraging. Know how to use data to test hypothesis about optimal foraging theory.

Know the essential elements of an experiment: treatment / control, replication, randomization

Understand observational and experimental tests of hypothesis and what the advantages and disadvantages of each approach are.

Know and be able to describe or define the essential elements of experimental design

Be able to define and/or distinguish discrete nominal, discrete ordinal, and continuous data, and the terms variable, observation, population and sample.

Know how best to summarize different kinds of data, and how to construct hypotheses (null and alternative)

Be able to define and interpret t-test, critical value, Chi-square goodness of fit and contingency tests, linear regression, scatter plot

Understand the meaning of statistical significance

For all statistical analyses, know when to apply each, the general procedure for application, and how to use the results to decide whether to reject your null hypothesis

Know the purpose and content of a research proposal.

Know how to correctly cite and search the scientific literature

Be able to solve problems like those in the practice problem set

Be able to design an experimental test of a hypothesis that I provide

(You do not need to memorize specific examples I used in lecture)

(You do not need to know the formulae for test statistics)