

Appendix B: Comparison of topic learning goals addressed within Learning Goal 1 in both non majors and majors genetics.

Learning Goal 1: Deduce information about genes, alleles, and gene functions from analysis of genetic crosses and patterns of inheritance.

Topic learning goals	Non majors (# classes)	Majors (# classes)
Draw a pedigree based on information in a story problem.	1	1
Distinguish between dominant, recessive, autosomal, X-linked, and cytoplasmic modes of inheritance.	1	1
Calculate the probability that an individual in a pedigree has a particular genotype.	2	1
Define the terms incomplete penetrance, variable expressivity, and sex-limited phenotype, and explain how these phenomena can complicate pedigree analysis.	1	1
Design genetic crosses to provide information about genes, alleles, and gene functions.	1	1
Interpret the results of epistasis tests, comparing the phenotypes that result from single mutations in two different genes with the phenotype of the double mutant.	0	1
Use statistical analysis to determine how well data from a genetic cross or human pedigree analysis fits theoretical predictions.	0	1
Interpret complementation tests to determine whether two mutations affect the same gene, and explain the requirements and the basis for these tests.	0	1