

## Agronomy 519

Introduction – the suggested topics and number of lectures are suggestions only. The amount of time devoted to specific topics will depend, on part, the input from the class, the relative importance of the topic in a changing agriculture, and the amount of discussion generated by the class.

### General topics and proposed lecture periods

- 1) Introduction and discussion of course procedures, herbicide families, and herbicide classification (one lecture)
- 2) Herbicide absorption and translocation – general review of proposed mechanisms, strategies, and implications (three lectures)
- 3) Herbicide metabolism – general discussion of importance with regard to plant selectivity, mechanisms, and impact of environment. Specific discussion about mixed function oxidases (MFOs). (two lectures)
- 4) Herbicide resistance – theory and implications (two lectures)
- 5) Herbicide families – properties, mechanisms of action, and metabolism. Some discussion about use and implications in agriculture. (24 lectures)
  - a. Triazines, triazones, and other PS inhibitor herbicides (three lectures)
  - b. Diphenylethers (two lectures)
  - c. Bipyridiliums (one lecture)
  - d. Imidazolinones (two lectures)
  - e. Sulfonylureas (one lecture)
  - f. Trizolopyrimidines (one lecture)
  - g. Aryloxyphenoxy propionates (two lectures)
  - h. Cyclohexanediones (one lecture)
  - i. Dintroanilines (two lectures)
  - j. Phenoxy (two lectures)
  - k. Benzoic and pyridine carboxylic acids (one lecture)
  - l. Glyphosate and glufosinate (two lectures)
  - m. Thiocarbamates and chloroacetamides (two lectures)
  - n. Chlorophyll and carotenoid biosynthesis inhibitors (one lecture)
  - o. Future herbicide development – design and approach (one lecture)