Crop Science Concentration in the Plant Sciences Major

The **crop science concentration** in the Plant Sciences major is designed to provide students with basic training in the plant sciences with special emphasis on the field crops. The requirements include more basic science and botany than does the agronomy concentration. In addition to the college requirements, a student with a concentration in crop science is expected to complete the following courses:

(A) At least 12 credits in biology and related subjects selected from the following courses, or the equivalent:

Plants, Genes, and Global Food Production (PL BR 201)
Plant Cell and Tissue Culture (PL BR 401-402)
Introductory Botany (BIOPL 241)
Plant Function and Growth (BIOPL 242-244) or Plant Physiology (BIOPL342-344)
Taxonomy of Cultivated Plants (BIOPL 243) or Taxonomy of Vascular Plants (BIOPL 248)
Ecology and the Environment (BIOEE 261)
Genetics (BIOGD 281)
General Microbiology (BIOMI 290-291)
Plant Anatomy (BIOPL 345)
Crop Evolution, Domestication and Diversity (BIOPL 404)
Plant Cell Biology (BIOPL 444)
Plant Cytogenetics Laboratory (PL BR 446)
Physiological Plant Ecology (BIOEE 466, 488)
Community Ecology (BIOEE 458)

(B) At least 18 credits in applied crop science selected from the following courses, or the equivalent:

Field Crop Systems (CSS 211 or CSS 405)
Forage Crops (CSS 312)
Weed Biology and Management (CSS 315)
Seed Science and Technology (CSS/HORT 317)
Tropical Cropping Systems: Biodiversity, Social, and Environmental Impacts (CSS/IARD 414)
Microclimatology (EAS 334)
Ecology of Agricultural Systems (HORT/BIOEE 473)
Environmental Biophysics (CSS/EAS 483)
Water Status in Plants and Soils (CSS 608)
Physiology of Environmental Stresses (CSS 610)
Seed Biology (CSS 612)

Physiology and Ecology of Yield (CSS 613)
Weed Ecology and Management (CSS 614)
Mineral Nutrition: from Plants to Humans (CSS/BIOPL 642)
Applied Plant-Microbe Interactions (CSS 666)
Modeling the Soil-Plant-Atmosphere System (CSS/EAS 675)

(C) At least 12 credits of chemistry and biochemistry.

(D) At least 6 credits of plant protection selected from the following courses, or the equivalent:

Insect Biology (ENTOM 212)
Insect Pest Management for Practicioners (ENTOM 241)
Integrated Pest Management (CSS/ENTOM 444)
Biology and Management of Plant Diseases (PLPA 401)

(E) At least 6 credits of soil science.

Soil Science (CSS 260)
Soil Morphology (CSS 362)
Soil Genesis, Classification, and Survey (CSS 363)
Environmental Chemistry: Soil, Air, and Water (CSS 365)
Nutrient Management in Agroecosystems (CSS 372)
Whole Farm Nutrient Management (CSS /ANSC 412)
Soil and Water Management (CSS 421)
Soil Ecology (CSS /HORT 466)
Nutrient Management and Research in Agroecosystems (CSS 472)
Environmental Biophysics (CSS /EAS 483)

Additional courses beyond those listed above will be selected by the student in consultation with the academic advisor. (Certification by ARCPACS as a Crop Scientist requires in addition 6 credits of mathematics, 3 credits of physics, 3 credits of statistics, 6 credits of economics or agricultural economics, 3 credits of speech, and 3 credits of technical writing.)