



REQUIREMENTS FOR PLANT SCIENCES MAJORS IN THE COLLEGE OF AGRICULTURE & LIFE SCIENCES AT CORNELL UNIVERSITY



Students majoring in Plant Sciences must complete a minimum of 40 credits from the following list of courses or equivalents taken at other institutions in subject matter areas determined by the faculty to be essential for the major. Courses that are **no longer offered** are “grandfathered” as far as satisfying a requirement for current students.

CHEMISTRY - General Chemistry - a minimum of **6 credits** from one of the following sequences:

- Chem 2070 and Chem 2080 *or* Chem 2070 and Chem 1570 (organic) *or* Chem 1560 and Chem 1570 (organic)

MATHEMATICS / STATISTICS - Plant Sciences majors must take one course in introductory statistics *or* transfer credit from an approved* statistics course where the grade earned was a “C” or better. Taking one of the courses listed below will fulfill both the college requirement, (to complete any math course at Cornell, except Math 1000) and the plant sciences requirement.

***Pre-approval forms for transfer credit are available in the CALS Registrar’s Office – 140 Roberts Hall.**

- BTRY 3010/NTRES 3130, fall 4 cr; AEM 2100, spring, 4 cr.
- Math 1710 fall, spring, summer, 4 cr.
- PAM 2100, fall & spring; ILRST 2120 fall & spring, 4cr.

INTRODUCTORY BIOLOGY - Minimum **6 credits** from the following list or equivalents:

- BioG 1101-1103, 1102-1104; or BioG 1105, 1106 or
- BioG 1109,1110 or BioG 1107,1108, summer

PLANT BIOLOGY - Minimum of **8 credits** from the following list:

- Introductory Botany, BioPI 2410, fall or BioPI 2450 summer, 3 cr.
- Plant Function and Growth, BioPI 2420 + 2421, spring, 5 cr. *or*
- Plant Physiology, Bio PI 3420+3421, spring, 5 cr.

Note: Students are also strongly encouraged to take one or more of the following courses to strengthen their understanding of form and function in plants:

- Molecular Biology and Genetic Engineering of Plants, BioPI 3430+3470, spring, 4 cr.
- Physiology of Vegetables & Flowers, HORT 4620, spring – odd years, 4 cr.
- Plant Biochemistry, BioPI 4620, spring, 3 cr.
- Plant Cell Biology, BioPI 4440, fall, 4 cr.
- Plant Cell and Tissue Culture, PIBr 4010/HORT 4030, fall, 3 cr.
- Plant Cell and Tissue Culture Lab, PIBr 4020/HORT 4040, fall, 1 cr.

SYSTEMATICS/TAXONOMY, EVOLUTION - Minimum of **3 credits** from the following list, with taxonomy/systematics strongly recommended.

- Evolutionary Biology, BioEE 2780, fall or spring, 3-4 cr.
- Molecular Systematics, BioPI 4470, fall – odd years, 3 cr.
- Phylogenetic Systematics, BioPI 4400, spring – odd years, 4 cr.
- Plant Evolution & the Fossil Record, BioPI 4480, spring – odd years, 3 cr.
- Principles of Historical Biogeography, BioPI 4530/Entom 4530, fall – odd years, 3 cr.
- Taxonomy of Cultivated Plants, BioPI 2430/HORT 2430, fall – even years, 4 cr.
- Taxonomy of Vascular Plants, BioPI 2480, spring – even years, 4 cr.

PLANT/PEST OR PLANT/PLANT INTERACTIONS - Minimum of **3 credits** from this list:

- Insect Biology, Entom. 2120, fall, 4 cr.
- Insect Pest Management for Practitioners, Entom. 2410, spring, 3 cr.
- Integrated Pest Management, Entom. 4440/CSS 4440, fall, 4 cr.
- Pathology of Trees and Shrubs, PIPa 4430, fall – even years, 4 cr.
- Biology and Management of Plant Diseases, PIPa 3010, fall, 4 cr.
- Weed Biology and Management, CSS 3150, fall, 4 cr.

GENETICS - Minimum of **3 credits** from the following list:

- Genetics, BioGD 2810 fall, spring or summer, 5 cr.
- Genetics lec. BIOGD 2800 fall or spring, 3 cr. & PIBr 2250 2 cr.
- Plant Genetics, PIBr 2250, spring, 3-4 cr.

SOIL SCIENCE - Minimum of **3 credits**:

- Soil Science, CSS 2600, fall, 4 cr.
- Other CSS soil science courses are also recommended

ECOLOGY/ENVIRONMENTAL BIOLOGY - Minimum of **3 credits** from this list:

- Chemical Ecology, BioEE 3690, spring, 3 cr.
- Cropping Systems Ecology, HORT 4600, spring – even years, 3 cr.
- Ecology and the Environment, BioEE 2610, fall or summer, 4 cr.
- Ecology of Agricultural Systems, HORT 4730/BioEE 4730, fall, 3 cr.
- Environmental Conservation, NTRES 2010, spring 3 cr.
- Forest Ecology, NTRES 4200, fall, 3 cr.
- Introduction to Conservation Biology, BioEE 2670, fall, 3 cr.
- Physiological Plant Ecology, BioEE 4660, 4661, spring – odd years, 5 cr.
- Plant Ecology and Population Biology, BioEE 4630, 4650, fall – odd years, 4 cr.
- The GMO Debate: Environmental Impacts of Environmental Biotechnology, CSS 4100, spring, 3 cr.

APPLIED PLANT SCIENCE - Minimum of **3 credits** from this list:

- Berry Crops, HORT 4420, fall – even years, 3 cr.
- Care of Plants in the Landscape HORT, 435, **no longer offered**, fall, 4 cr.
- Creating the Urban Eden: Woody Plant Selection, Design, & Landscape Establishment, HORT 4910/LA 4910, fall, 4 cr.
- Ecological Orchard Management, HORT 4450, spring – even years, 3 cr.
- Field Crop Systems, CSS 2110, fall, 4 cr.
- Field Crop Systems, CSS 4050, fall, 4 cr.
- Genetic Improvement of Crop Plants, PIBr 4030, fall, 3 cr.
- Golf & Sports Turf Management I, HORT 3300, spring, 3 cr.
- Herbaceous Plant Materials, HORT 3000, fall, 3 cr.
- Mineral Nutrition of Crops & Landscape Plants – 5 modules, HORT 4551-4555/CSS 4551-4555, spring – even years, 3-5 cr.
- Nursery-Crop Production, HORT 4200, fall – odd years, 3 cr.
- Plants, Genes, and Global Food Prod., PIBr 2010, fall, 3 cr.
- Plant Propagation, HORT 4000, spring, 3 cr.
- Postharvest Biology of Horticultural Crops, HORT 4250, fall – odd years, 3 cr.
- Practicing Sustainable Landcare HORT 2200, fall – odd years 2-3 cr.
- Practicum in Forest Farming as an Agroforestry System, HORT 4260/CSS 4260/NTRES 4260, fall, 2 cr.
- Production & Marketing of Greenhouse Crops, HORT 3100, spring – odd years, 4 cr.
- Public Garden Management, HORT 4850, spring – even years, 3 cr.
- Seed Science and Technology, CSS 3170/HORT 3170, fall – odd years, 3 cr.
- Sustainable Agriculture CSS 1900 fall, 3 cr.
- Tropical Cropping Systems, CSS 4140, fall, 3 cr.
- Viticulture & Vineyard Management-I, HORT 4430, fall, 3 cr.
- Viticulture & Vineyard Management-II, HORT 4440, spring, 3 cr.

What is considered an odd or even year? For academic year 2009-2010, Fall is odd and Spring, even. Likewise, Fall 2010, even and Spring 2011, odd - for academic year 2010-2011.