COURSE REQUIREMENTS FOR THE PLANT SCIENCES MAJOR
FOR STUDENTS ENTERING PROGRAM IN FALL 2015 OR LATER

Beginning in the Fall 2015 term, Plant Sciences majors must complete coursework for the college and program that includes approximately two years of “core” or foundational coursework plus the required coursework in at least one concentration; develop an ePortfolio; and engage in an out-of-classroom experience related to the major. Core coursework in biology, chemistry, statistics and plant biology should be completed as early as possible, and transfer students should complete most of these courses before matriculating to Cornell.

**BIOLOGY (5-6 credits):**
PS majors must take one semester of introductory biology and one semester of an investigative lab in one of the following sequences:
1. Students **without AP Biology** or who **did not score >4 on the AP Biology exam** must take **BIOG 1140: Foundations of Biology** (4 credits, fall) + **BIOG 1500: Investigative Biology Laboratory** (2 credits, fall, spring, summer)
2. Students **who score >4 on the AP Biology exam** must take **BIOG 1500: Investigative Biology Laboratory** (2 credits, fall, spring, summer) and one of the following courses: **BIOG 1140: Foundations of Biology** (4 credits, fall) or **PLHRT 1115, The Nature of Plants** (3 credits, spring) or **BIOG 1440, Comparative Physiology** (3 credits, fall, spring, summer) or **BIOG 1530, Cell and Developmental Biology** (3 credits, fall, spring) or **BIOEE 1610: Ecology and the Environment** (3-4 credits, fall, spring).

**CHEMISTRY (7-15 credits):**
PS majors must take general and organic chemistry in one of the sequences below. Students **must obtain written permission** from the Plant Sciences Director of Undergraduate Studies before beginning sequence #3 or #4 below.
1. **AP Chemistry credit:** score of 5 (4 credits) + **CHEM 1570: Introduction to Organic and Biological Chemistry** (3 credits, spring, summer)
2. **CHEM 1560: Introduction to General Chemistry** (4 credits, fall, summer) + **PLBIO 1560: Application of CHEM 1560 to Plant Sciences** (1 credit, fall) + **CHEM 1570: Introduction to Organic and Biological Chemistry** (3 credits, spring, summer)
3. **CHEM 2070: General Chemistry I** (4 credits, fall, summer) + **PLBIO 2070: Application of CHEM 2070 to Plant Sciences** (1 credit, fall) + **CHEM 2080** (General Chemistry II (4 credits, spring, summer)) + **CHEM 1570: Introduction to Organic and Biological Chemistry** (3 credits, spring, summer)
4. **CHEM 2070: General Chemistry** (4 credits, fall, summer) + **PLBIO 2070: Application of CHEM 2070 to Plant Sciences** (1 credit, fall) + **CHEM 2080** (General Chemistry II (4 credits, spring, summer)) + **CHEM 3530: Principles of Organic Chemistry** (3 credits, fall) or **CHEM 3570: Organic Chemistry for the Life Sciences** (3 credits, fall, summer) and **CHEM 3580: Organic Chemistry** (3 credits, spring, summer)

**STATISTICS (4 credits):**
PS majors must take a course in introductory statistics from the list below. Other statistics courses must be approved by petition of the PSCC.
**AP Statistics credit:** score of 4-5 (4 credits) may be used to satisfy the introductory statistics course requirement.
**BTRY 3010/STSCI 2200:** Biological Statistics I (4 credits, fall). **Prereq:** one semester of college-level calculus.
**STSCI 2150:** Introductory Statistics for Biology (4 credits, fall, spring)
**CORE COURSEWORK (33 credits):**
PS majors must take all of the courses listed below:
1. **PLSCI 1101:** Plant Science and Systems (4 credits, fall)
2. **PLSCI 1110:** Collaboration, Leadership and Career Skills in the Plant Sciences (2 credits, fall)
   
   This leadership seminar is required of all new PS students, including transfers.
3. **PLBRG 2250:** Plant Genetics (4 credits, spring) or **BIOMG 2800:** Genetics and Genomics Lectures (3 credits, fall, spring, summer)
4. **PLBIO 2410:** Introductory Plant Biodiversity and Evolution (3 credits, fall)
5. **PLBIO 2440:** Evolutionary Plant Biology (3 credits, spring)
6. **PLBIO 2450:** Vascular Plant Systematics (4 credits, spring) or **PLBIO 2430:** Taxonomy of Cultivated Plants (4 credits, inactive)
7. **PLSCS 2600:** Soil Science (4 credits, fall)
8. **PLBIO 3420 + 3421:** Plant Physiology, Lecture and Laboratory, Lectures and Laboratory (5 credits, spring)
9. **PLSCI 4460 + 4461:** Plant Behavior and Biotic Interactions, Lecture and Laboratory (4 credits, spring)

**EXPERIENTIAL LEARNING REQUIREMENT (1 credit):**
**PLSCI 4900:** Reflection on PS Experience (1 credit, fall or spring)
PS students must complete this course to satisfy the experiential learning requirement in the program. Students may also enroll in **PLSCI 2990, PLSCI 4960, or PLSCI 4990**, although not required to do so.

**PLANT SCIENCES STUDENT SEMINARS (3 credits):**
1. **PLSCI 4925:** Plant Sciences Senior Portfolio (1 credit, fall, spring)
   PS students must complete this course before taking **PLSCI 4950** in their senior year.
2. **PLSCI 4950:** Senior Seminar in Plant Sciences (2 credits, spring)
   This course is required of all graduating PS students, including those who graduate early or in January/August.

**ePORTFOLIO:**
PS students will create an ePortfolio to track and highlight their learning in the program. PS students are expected to update their ePortfolio every semester they are enrolled in courses and to present it to their advisor to complete **PLSCI 4925** before graduating. Introduction to the ePortfolio will be done in **PLSCI 1110**.

**CONCENTRATION COURSEWORK (variable credit):**
PS students must declare one of the concentrations below by the end of the first semester of their junior year.
1. Ecology of Managed Landscapes (Ecology)
2. Organic Agriculture (Organics)
3. Plant Breeding & Genetics (Breeding)
4. Plant Computational Biology (Big Data)
5. Plant Evolution and Systematics (Evolution)
6. Plant Molecular, Cellular & Developmental Biology (Physiology)
7. Plant Pathology & Plant-Microbe Biology (Disease)
8. Plants and Human Health (Phytotherapy)
9. Soil Science (Soils)
10. Sustainable Plant Production (Sustainability)
11. Design Your Own Concentration (DYOC)

What is considered an odd or even year? For academic year 2018-2019, fall is the even year and spring, the odd. For academic year 2019-2020, fall is the odd year and spring, the even.