PLANT SCIENCES MAJOR

http://psla.umd.edu/undergraduate/plant-sciences/

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Plant Sciences combines basic science courses with applied technical classes to prepare students for research, public sector, and industry careers. Students seeking a Plant Sciences degree must complete requirements in one of the following Areas of Concentration: **Plant Biology, Turf and Golf Course Management**, or **Urban Forestry**.

 Plant Biology is designed to prepare students for graduate or professional schools and/or a career in research. This area provides a strong foundation for postgraduate education and research careers in biotechnology, plant physiology and development, cell biology, molecular biology, plant genetics/genomics, conservation biology, ecology, and plant pathology.

Management Programs:

- Turf and Golf Course Management prepares students to succeed as a turfgrass professional in the golf course or sports turf industry, stressing an interdisciplinary approach to this career.
- Urban Forestry prepares students to manage urban trees and forests and enhance their sustainability. This program stresses tree biology, forest ecology and forest assessment and management tools and prepares students for careers with municipalities or government agencies as well as private industry such as power companies and the tree-care industry.
- A Landscape Management minor (https://academiccatalog.umd.edu/ undergraduate/colleges-schools/agriculture-natural-resources/plantsciences-landscape-architecture/landscape-management-minor/) is also available in the department.

Program Learning Outcomes

- 1. Students will develop technical and knowledge-based skills in the required areas of study.
- 2. Students will use technical and basic learned knowledge to collaborate, solve problems and then articulate conclusions.
- Students shall develop effective communication skills and demonstrate the ability to present ideas with clarity to an appropriate audience.
- 4. Students will connect and build relationships with external groups in the appropriate fields of study.

REQUIREMENTS

Course	Title	Credits	
Requirements for all Areas of Concentration ¹			
CHEM131	Chemistry I - Fundamentals of General Chemist	ry 4	
& CHEM132	and General Chemistry I Laboratory		
ENGL101	Academic Writing	3	
ENGL393	Technical Writing	3	
ENST200	Fundamentals of Soil Science	4	
MATH113	College Algebra and Trigonometry	3	
or MATH115	Precalculus		
PLSC110	Introduction to Horticulture	4	
& PLSC111	and Introduction to Horticulture Laboratory		
or PLSC112	Introductory Crop Science		
& PLSC113	and Introductory Crop Science Laboratory		
PLSC398	Seminar	1	
Select a specialization from the list below:		48-55	
Plant Biology			
Turf and Golf C	ourse Management		
Urban Forestry			
Total Credits		70-77	

¹ With the exception of ENGL101 and ENGL393, a grade of "C-" or better is required in the courses above.

Specializations: Plant Biology

Course	Title	Credits
Requirements		
BSCI337	Biology of Insects	4
BSCI442	Plant Physiology	4
or PLSC400	Plant Physiology	
CHEM231 & CHEM232	Organic Chemistry I and Organic Chemistry Laboratory I	4
CHEM241 & CHEM242	Organic Chemistry II and Organic Chemistry Laboratory II	4
MATH140	Calculus I	4
or MATH120	Elementary Calculus I	
PHYS121	Fundamentals of Physics I	4
PLSC201	Plant Structure and Function	3
PLSC206	Plant Structure and Function Laboratory	1
PLSC202		4
PLSC203	Plants, Genes and Biotechnology	3
PLSC271	Plant Propagation	3
PLSC399	Special Problems in Plant Science	1-3
PLSC420	Principles of Plant Pathology	4
Advanced Plant Science Electives		
Select one of the	following:	3-4
PLSC403		
PLSC430	Water and Nutrient Planning for the Nursery and Greenhouse Industry	d
PLSC432	Greenhouse Crop Production	
PLSC433	Technology of Fruit and Vegetable Production	

Total Credits		49-53
PHYS122	Fundamentals of Physics II	
ENST421	Soil Chemistry	
ENST417	Soil Hydrology and Physics	
ENST411	Principles of Soil Fertility	
or BSCI461		
BCHM261		
Select one of the	following:	3-4
Advanced Science	e Electives	
PLSC474		
PLSC456		
PLSC452	Environmental Horticulture	

Turf and Golf Course Management

Course	Title C	redits
Requirements		
AGST275	Fundamentals of Agricultural and Environmental Chemistry	3
BSCI170 & BSCI171	Principles of Molecular & Cellular Biology and Principles of Molecular & Cellular Biology Laboratory	4
BSCI160 & BSCI161	Principles of Ecology and Evolution and Principles of Ecology and Evolution Lab	4
BSCI337	Biology of Insects	4
COMM107	Oral Communication: Principles and Practices	3
PHYS121	Fundamentals of Physics I	4
INAG215	Business Management Principles for Turf Faciliti	es 3
or INAG204	Agricultural Business Management	
INAG235	Irrigation and Drainage	3
PLSC201 & PLSC206	Plant Structure and Function and Plant Structure and Function Laboratory	4
PLSC205	Introduction to Turf Science and Management	4
PLSC389	Internship	3
PLSC401	Pest Management Strategies for Turfgrass	3
PLSC402	Sports Turf Management	3
PLSC420	Principles of Plant Pathology	4
PLSC453	Weed Science	3
Total Credits		52

Urban Forestry

Course	Title	Credits
Requirements		
AREC240	Introduction to Economics and the Environmen	t 3
BMGT220	Principles of Accounting I	3
BSCI337	Biology of Insects	4
or BSCI497	Insect Pests of Ornamentals and Turf	
Select one of the	following:	3
CHEM105		
CHEM231	Organic Chemistry I	
& CHEM232	and Organic Chemistry Laboratory I	
ENST411	Principles of Soil Fertility	3
LARC160	Introduction to Landscape Architecture and Environmental Design	3

Total Credits		55
PLSC472	Capstone-Urban Forest Project Management	3
PLSC471	Forest Ecology	3
PLSC420	Principles of Plant Pathology	4
PLSC400	Plant Physiology	4
PLSC389	Internship	3
PLSC361		3
PLSC272	Principles of Arboriculture	3
PLSC254	Woody Plants for Mid-Atlantic Landscape II	3
PLSC253	Woody Plants for Mid-Atlantic Landscapes I	3
PLSC206	Plant Structure and Function Laboratory	1
PLSC201	Plant Structure and Function	3
PLSC171		3

Suggested General Education Courses and Electives for urban forestry

Course	Title	Credits
BIOM301	Introduction to Biometrics ¹	3
Select one of the	following:	3-5
BSCI460		
BSCI460 & BSCI461	and	
CHEM241 & CHEM242	Organic Chemistry II and Organic Chemistry Laboratory II ¹	4
CHEM271 & CHEM272	General Chemistry and Energetics and General Bioanalytical Chemistry Laboratory	, ¹
COMM107	Oral Communication: Principles and Practices	3
ENST415	Renewable Energy	3
ENST444		3
GEOG201	Geography of Environmental Systems	3
GVPT170	American Government	3
GVPT273	Introduction to Environmental Politics	3
LARC450		3
MATH120	Elementary Calculus I ¹	3
Select one of the	following:	8
PHYS121 & PHYS122	Fundamentals of Physics I and Fundamentals of Physics II ¹	
PHYS141 & PHYS142	Principles of Physics and Principles of Physics ¹	
PLSC200		2
PLSC203	Plants, Genes and Biotechnology	3
PLSC320		3
PLSC473	Woody Plant Physiology	3
PLSC475		3
SOCY100	Introduction to Sociology	3
SOCY105	Understanding Contemporary Social Problems - Frameworks for Critical Thinking and Strategies Solutions	- 3 s for
SOCY305		3
SPAN223		3
URSP100		3
URSP320		3
URSP372	Diversity and the City	3

¹ Suggested electives for students planning on graduate study in Forestry

GRADUATION PLANS

Click here (https://agnr.umd.edu/academics/advising/four-year-plans/) for roadmaps for graduation plans in the College of Agricultural and Natural Resources.

Additional information on developing a graduation plan can be found on the following pages:

- http://4yearplans.umd.edu
- the Student Academic Success-Degree Completion Policy (https:// academiccatalog.umd.edu/undergraduate/registration-academicrequirements-regulations/academic-advising/#success) section of this catalog