PLANT SCIENCES MAJOR

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/courses/agriculture-natural-resources/plant-sciences-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.
3. 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

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Requirements</td>
<td></td>
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</tr>
<tr>
<td>CHEM131 &amp; CHEM132</td>
<td>Chemistry I - Fundamentals of General Chemistry and General Chemistry I Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>ENGL101</td>
<td>Academic Writing</td>
<td>3</td>
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<tr>
<td>ENGL393</td>
<td>Technical Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENST200</td>
<td>Fundamentals of Soil Science</td>
<td>4</td>
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<tr>
<td>MATH113 or MATH115</td>
<td>College Algebra and Trigonometry or Precalculus</td>
<td>3</td>
</tr>
<tr>
<td>PLSC100 or PLSC101</td>
<td>Introduction to Horticulture or Introductory Crop Science</td>
<td>4</td>
</tr>
<tr>
<td>PLSC398</td>
<td>Seminar</td>
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</table>

Select a specialization from the list below: 48-55

- **Plant Biology**

**Turf and Golf Course 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**

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<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>Requirements</td>
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</tr>
<tr>
<td>BSCI337</td>
<td>Biology of Insects</td>
<td>4</td>
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<tr>
<td>BSCI442 or PLSC400</td>
<td>Plant Physiology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM231 &amp; CHEM232</td>
<td>Organic Chemistry I and Organic Chemistry Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHEM241 &amp; CHEM242</td>
<td>Organic Chemistry II and Organic Chemistry Laboratory</td>
<td>4</td>
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<tr>
<td>MATH140 or MATH120</td>
<td>Calculus I and Elementary Calculus</td>
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<tr>
<td>PHYS121</td>
<td>Fundamentals of Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PLSC201</td>
<td>Plant Structure and Function</td>
<td>4</td>
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<tr>
<td>PLSC202</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>PLSC203</td>
<td>Plants, Genes and Biotechnology</td>
<td>3</td>
</tr>
<tr>
<td>PLSC271</td>
<td>Plant Propagation</td>
<td>3</td>
</tr>
<tr>
<td>PLSC399</td>
<td>Special Problems in Plant Science</td>
<td>1-3</td>
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<tr>
<td>PLSC420</td>
<td>Principles of Plant Pathology</td>
<td>4</td>
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</tbody>
</table>

Advanced Plant Science Electives

Select one of the following: 3-4

- PLSC403
- PLSC430 Water and Nutrient Planning for the Nursery and Greenhouse Industry
- PLSC432 Greenhouse Crop Production
- PLSC433 Technology of Fruit and Vegetable Production
- PLSC452 Environmental Horticulture
- PLSC456
- PLSC474

Advanced Science Electives

Select one of the following: 3-4

- BCHM261
- or BSCI461 Plant Ecology Laboratory
- ENST411 Principles of Soil Fertility
- ENST417 Soil Physics and Hydrology
- ENST421 Soil Chemistry
- PHYS122 Fundamentals of Physics II

Total Credits 49-53

**Turf and Golf Course Management**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>Requirements</td>
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</tr>
<tr>
<td>BSCI170 &amp; BSCI171</td>
<td>Principles of Molecular &amp; Cellular Biology and Principles of Molecular &amp; Cellular Biology Laboratory</td>
<td>4</td>
</tr>
</tbody>
</table>
BSCI160 Principles of Ecology and Evolution 4
&BSCI161 and Principles of Ecology and Evolution Lab 4
BSCI337 Biology of Insects 4
CHEM104 4
COMM100 Foundations of Oral Communication 3
or COMM107 Oral Communication: Principles and Practices 3
ENBE237 1
PHYS117 4
or PHYS121 Fundamentals of Physics I 1
PLSC305 Introduction to Turf Management 3
PLSC389 Internship 1-3
PLSC400 Plant Physiology 4
PLSC401 Pest Management Strategies for Turfgrass 3
PLSC402 Sports Turf Management 3
PLSC410 Commercial Turf Maintenance and Production 3
PLSC420 Principles of Plant Pathology 4
PLSC453 Weed Science 3
Total Credits 48-50

Urban Forestry

Course Title Credits
Requirements
AREC240 Introduction to Economics and the Environment 3
BMGT220 Principles of Accounting I 3
BSCI337 Biology of Insects 4
& BSCI497 Insect Pests of Ornamentals and Turf 4
Select one of the following: 3
CHEM105
CHEM231 Organic Chemistry I 1
& CHEM232 and Organic Chemistry Laboratory I 1
ENST411 Principles of Soil Fertility 3
LARC160 Introduction to Landscape Architecture 3
PLSC171 Introduction to Urban Forestry 3
PLSC201 Plant Structure and Function 4
PLSC253 Woody Plants for Mid-Atlantic Landscapes I 3
PLSC254 Woody Plants for Mid-Atlantic Landscape II 3
PLSC272 Principles of Arboriculture 3
PLSC361 3
PLSC389 Internship 1-3
PLSC400 Plant Physiology 4
PLSC420 Principles of Plant Pathology 4
PLSC471 Forest Ecology 3
PLSC472 Capstone-Urban Forest Project Management 3
Total Credits 53-55

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 Plant Ecology 1

Four Year Plan

Click here (http://www.gened.umd.edu/for-students/forstudents-4yearplans-agnr.html) for roadmaps for four-year plans in the College of Agricultural and Natural Resources.

Additional information on developing a four-year academic plan can be found on the following pages:

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