The Department of Botany provides an introduction to the living world: the diversity of its organisms; its historical origins through evolution; its principles of structure, function, and ecology; and its interactions, relationships, and effects on the nonliving world. Botany is the science of plants, algae, fungi, and bacteria—all living organisms except animals. Green plants and algae provide the photosynthetic energy for fueling all other life on earth and drive global water and carbon cycles. Fungi and bacteria are the fundamental recyclers of the earth.

The study of botany provides a broad background in the principles of modern biology and gives a solid foundation for careers in environmental studies, conservation biology, ecology, systematics, evolution, genetics, physiology, biotechnology, agriculture, and horticulture. Jobs requiring such preparation include teaching in secondary schools and colleges, research and development in industry and medicine, stewardship of our natural world through private and governmental programs, and research and teaching in academia.

HOW TO GET IN

Prospective botany majors should consult with the general undergraduate botany advisor by the beginning of the junior year to outline a course of study appropriate to the student's needs. Major Declaration may occur by meeting with the undergraduate advisor in the major.

To be accepted as a major in botany, a student must have a grade point average of 2.5 for all science courses taken during the freshman and sophomore years.

REQUIREMENTS

UNIVERSITY GENERAL EDUCATION REQUIREMENTS

All undergraduate students at the University of Wisconsin–Madison are required to fulfill a minimum set of common university general education requirements to ensure that every graduate acquires the essential core of an undergraduate education. This core establishes a foundation for living a productive life, being a citizen of the world, appreciating aesthetic values, and engaging in lifelong learning in a continually changing world. Various schools and colleges will have requirements in addition to the requirements listed below. Consult your advisor for assistance, as needed. For additional information, see the university Undergraduate General Education Requirements (http://guide.wisc.edu/undergraduate/requirementsforundergraduatetestudytext) section of the Guide.

COLLEGE OF LETTERS & SCIENCE BREADTH AND DEGREE REQUIREMENTS: BACHELOR OF ARTS (B.A.)

Students pursuing a bachelor of arts degree in the College of Letters & Science must complete all of the requirements below. The College of Letters & Science allows this major to be paired with either a bachelor of arts or a bachelor of science curriculum. View a comparison of the degree requirements here. (https://pubs.wisc.edu/home/archives/ug15/images/babs2009.pdf)

BACHELOR OF ARTS DEGREE REQUIREMENTS

Requirements Detail

<table>
<thead>
<tr>
<th>Mathematics</th>
<th>Fulfilled with completion of University General Education requirements Quantitative Reasoning a (QR A) and Quantitative Reasoning b (QR B) coursework. Please note that some majors may require students to complete additional math coursework beyond the B.A. mathematics requirement.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foreign Language</td>
<td>• Complete the fourth unit of a foreign language; OR • Complete the third unit of a foreign language and the second unit of an additional foreign language Note: A unit is one year of high school work or one semester/term of college work.</td>
</tr>
<tr>
<td>L&amp;S Breadth</td>
<td>• Humanities, 12 credits: 6 of the 12 credits must be in literature • Social Sciences, 12 credits • Natural Sciences, 12 credits: must include one 3+ credit course in the biological sciences; must include one 3+ credit course in the physical sciences</td>
</tr>
<tr>
<td>Liberal Arts and Science Coursework</td>
<td>108 credits</td>
</tr>
<tr>
<td>Depth of Intermediate/Advanced work</td>
<td>60 intermediate or advanced credits</td>
</tr>
<tr>
<td>Major</td>
<td>Declare and complete at least one (1) major</td>
</tr>
<tr>
<td>Total Credits</td>
<td>120 credits</td>
</tr>
<tr>
<td>UW-Madison Experience</td>
<td>30 credits in residence, overall</td>
</tr>
<tr>
<td>Experience</td>
<td>30 credits in residence after the 90th credit</td>
</tr>
</tbody>
</table>
Minimum GPAs
2.000 in all coursework at UW–Madison
2.000 in intermediate/advanced coursework at UW–Madison

NON–L&S STUDENTS PURSUING AN L&S MAJOR
Non–L&S students who have permission from their school/college to pursue an additional major within L&S only need to fulfill the major requirements and do not need to complete the L&S breadth and degree requirements above.

REQUIREMENTS FOR THE MAJOR
MATH, CHEMISTRY, AND PHYSICS

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>STAT 301</td>
<td>Introduction to Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>or STAT 371</td>
<td>Introductory Applied Statistics for the Life Sciences</td>
<td></td>
</tr>
<tr>
<td>STAT 371</td>
<td>Introductory Applied Statistics for the Life Sciences</td>
<td>3</td>
</tr>
</tbody>
</table>

General Chemistry
CHEM 103 General Chemistry I
& CHEM 104 and General Chemistry II
or CHEM 109 Advanced General Chemistry

Organic Chemistry
CHEM 341 Elementary Organic Chemistry
or CHEM 343 Introductory Organic Chemistry

Physics
PHYSICS 115 Energy (preferred)
PHYSICS 103 General Physics
PHYSICS 104 General Physics
PHYSICS 201 General Physics
PHYSICS 202 General Physics
PHYSICS 207 General Physics
PHYSICS 208 General Physics
PHYSICS 247 A Modern Introduction to Physics
PHYSICS 248 A Modern Introduction to Physics
PHYSICS 249 A Modern Introduction to Physics

Total Credits 14-20

1 PHYSICS 115 is the best choice if one course is to be taken. It is recommended that two semesters of PHYSICS be taken (PHYSICS 103/PHYSICS 104 or PHYSICS 201/PHYSICS 202 or PHYSICS 207/PHYSICS 208). Please note PHYSICS 107 and PHYSICS 109 do not fulfill this requirement.

BIOLOGY AND BOTANY REQUIREMENTS

30 credits from:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTANY/ BIOLOGY 130</td>
<td>General Botany</td>
<td>5-10</td>
</tr>
</tbody>
</table>

Option A, Recommended

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTANY/ BIOLOGY 130</td>
<td>General Botany</td>
<td>5-10</td>
</tr>
</tbody>
</table>

Option B: Introductory Biology

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTANY/ BIOLOGY/ AMER IND/ ANTHRO 474</td>
<td>Plant Systematics</td>
<td>5-10</td>
</tr>
</tbody>
</table>

Independent Research Experience—choose one:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOTANY 691 &amp; BOTANY 692</td>
<td>Senior Thesis and Senior Thesis</td>
<td>4</td>
</tr>
<tr>
<td>BOTANY 681 &amp; BOTANY 682</td>
<td>Senior Honors Thesis and Senior Honors Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>
Students nearing completion of the major should seek out research opportunities with their advisor or faculty supervisor, and register for their project at the end of the junior year.

**RESIDENCE AND QUALITY OF WORK**

- 2.000 GPA in all BOTANY and major courses
- 2.000 GPA on 15 upper-level major credits, taken in residence
- 15 credits in BOTANY, taken on the UW–Madison campus

**HONORS IN THE MAJOR**

Students may declare Honors in the Botany Major in consultation with the Botany undergraduate advisor.

**REQUIREMENTS**

To earn the B.A. or B.S. degree with Honors in the Major in Botany, students must satisfy the requirements for the major and the following additional requirements:

1. Earn a 3.300 overall university GPA
2. Earn a 3.400 GPA in all BOTANY and courses accepted in the major
3. A Senior Honors Thesis in BOTANY 681 and BOTANY 682, for a total of 6 credits, and
4. 12 credits in Intermediate/Advanced BOTANY, taken for Honors

**UNIVERSITY DEGREE REQUIREMENTS**

**LEARNING OUTCOMES**

1. Acquire and demonstrate foundational understanding of the basic properties of plant life from the subcellular to the ecosystem level of organization.
2. Acquire and demonstrate basic understanding in chemistry, physics, and mathematics to interpret biological phenomena.
3. Acquire and demonstrate detailed knowledge in at least five of these core areas of plant biology: Genetics, Physiology, Structural biology, Ecology, Systematics, Evolution, Cryptogamic biology.
4. Explore these core areas in the context of the laboratory and/or the field.
5. Engage in plant biology research (to include algae, photosynthetic bacteria, and fungi): develop hypotheses, acquire scientific information, and interpret results in the context of the historical scientific literature in one or more specialized botanical subdisciplines.
6. Develop an appreciation of communicating scientific information, especially in written form.

**ADVISING AND CAREERS**

**ADVISING**

The Department of Botany encourages our majors to begin working on their career exploration and preparation soon after arriving on campus. We partner with the L&S Career Services office to help you leverage the academic skills learned in your major and liberal arts degree, explore and try out different career paths, participate in internships, prepare for the job search and/or graduate school applications, and network with professionals in the field (alumni and employers).

**Career Resources:**

- Why the liberal arts? (http://ls.wisc.edu/about/why-liberal-arts)
- Set up a Career Advising Appointment (http://careers.ls.wisc.edu/Undergraduate-Advising.htm)
- L&S Career Services (http://careers.ls.wisc.edu/students.htm): We launch our students higher, sooner
- INTER-LS 210 L&S Career Development: Taking Initiative (1 credit, targeted to first and second-year students)
- Learn how we’re transforming career preparation: L&S Career Initiative (http://ls.wisc.edu/about/lscci?p=careerinitiative.html)
- Career Advising is also available in the Botany Department: Botany Department Advising Page (http://www.botany.wisc.edu/declaration-and-advising.htm)

**PEOPLE**

Professors Ane, Baum, Cameron (chair), Emshwiller, Fernandez, Gilroy, Givnish, Graham, Hotchkiss, Larget, Otegui, Spalding, Sytsma, Waller

Associate Professor Pringle

Assistant Professors Keefover-Ring, Maeda, McCulloh

Majors will eventually choose from the faculty a Senior Thesis advisor, who then will be the student’s undergraduate advisor. Prospective majors should contact the general advisors directly.