BOTANY, B.A.

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/#requirementsforundergraduatestudytext) section of the Guide.

General Education
- Breadth—Humanities/Literature/Arts: 6 credits
- Breadth—Natural Science: 4 to 6 credits, consisting of one 4- or 5-credit course with a laboratory component; or two courses providing a total of 6 credits
- Breadth—Social Studies: 3 credits
- Communication Part A & Part B *
- Ethnic Studies *
- Quantitative Reasoning Part A & Part B *

* The mortarboard symbol appears before the title of any course that fulfills one of the Communication Part A or Part B, Ethnic Studies, or Quantitative Reasoning Part A or Part B requirements.

COLLEGE OF LETTERS & SCIENCE 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.

BACHELOR OF ARTS DEGREE REQUIREMENTS

Mathematics Complete the University General Education Requirements for Quantitative Reasoning A (QR-A) and Quantitative Reasoning B (QR-B) coursework.

Foreign Language
- 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.

L&S Breadth
- 12 credits of Humanities, which must include 6 credits of literature; and
- 12 credits of Social Science; and
- 12 credits of Natural Science, which must include one 3+ credit Biological Science course and one 3+ credit Physical Science course.

<table>
<thead>
<tr>
<th>Code/Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>STAT 301 Introduction to Statistical Methods</td>
<td>3</td>
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<tr>
<td>STAT 302 Accelerated Introduction to Statistical Methods</td>
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<tr>
<td>STAT 324 Introductory Applied Statistics for Engineers</td>
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<tr>
<td>STAT 371 Introductory Applied Statistics for the Life Sciences</td>
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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. They do not need to complete the L&S Degree Requirements above.

REQUIREMENTS FOR THE MAJOR

MATH, CHEMISTRY, AND PHYSICS

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<tr>
<td>CHEM 103 General Chemistry I</td>
<td>5-9</td>
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<tr>
<td>CHEM 104 &amp; General Chemistry II</td>
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<tr>
<td>CHEM 115 Chemical Principles I</td>
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<td>CHEM 116 &amp; Chemical Principles II</td>
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<tr>
<td>CHEM 109 Advanced General Chemistry</td>
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<tr>
<td>CHEM 341 Elementary Organic Chemistry</td>
<td>3</td>
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<tr>
<td>or CHEM 343 Organic Chemistry I</td>
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<tr>
<td>PHYSICS 115 Energy (preferred)</td>
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<tr>
<td>PHYSICS 103 General Physics</td>
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<td>PHYSICS 104 General Physics</td>
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<td>PHYSICS 201 General Physics</td>
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<td>PHYSICS 202 General Physics</td>
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<td>PHYSICS 207 General Physics</td>
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<td>PHYSICS 208 General Physics</td>
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<tr>
<td>PHYSICS 247 A Modern Introduction to Physics</td>
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<tr>
<td>PHYSICS 248 A Modern Introduction to Physics</td>
<td></td>
</tr>
</tbody>
</table>
PHYSICS 249  A Modern Introduction to Physics

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<th>Course</th>
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<tbody>
<tr>
<td>STAT 371</td>
<td>A Modern Introduction to Statistics</td>
</tr>
<tr>
<td>MATH 211</td>
<td>Calculus</td>
</tr>
<tr>
<td>MATH 221</td>
<td>Calculus</td>
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</tbody>
</table>

Total Credits: 14-20

CHEM 109 is the best option for chemistry if only one course is to be taken. However, for students who are preparing for graduate school, and depending on their post-graduate goals (CHEM 103-CHEM 104 or CHEM 115-CHEM 116) is strongly recommended as some graduate programs may require a sequence of organic chemistry courses.

CHEM 341 is the best option for organic chemistry if only one course is to be taken. However, for students who are preparing for graduate school, the three-course organic chemistry sequence (CHEM 343-CHEM 344-CHEM 345) is strongly recommended instead of CHEM 341, as some graduate programs may require a sequence of organic chemistry courses.

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).

### BIOLOGY AND BOTANY REQUIREMENTS

30 credits from:

| Code         | Title                                      | Credits |
|--------------|--------------------------------------------|
| BOTANY/BIOL  | General Botany                             | 1       |
| BOTANY/BIOLOGICAL  |   | 130                  |
| BOTANY/ZOOLOGY | Introductory Biology                       | 151     |
| BOTANY/ZOOLOGY | Introductory Biology                       | 152     |
| BIOCORE 381  | Evolution, Ecology, and Genetics           |         |
| BIOCORE 382  | Evolution, Ecology, and Genetics Laboratory|         |
| BIOCORE 383  | Cellular Biology                           |         |
| BIOCORE 384  | Cellular Biology Laboratory                |         |
| BIOCORE 485  | Principles of Physiology                   |         |
| BIOCHEM 621  | Plant Biochemistry                         |         |
| BOTANY/ENVIR/ | Conservation Biology                      |         |
| F&W ECOL/BIOL | Plant Microbe Interactions: Molecular and   |         |
| ZOOLOGY      | Ecological Aspects                         |         |
| BOTANY/AMER/ | Ethnobotany                                |         |
| ANTHRO       |                                           |         |
| BOTANY/ENTOM/ | Plant-Microbe Interactions: Plant Microbe |         |
| ZOOLOGY      | Interactions: Molecular and Ecological     |         |
| PL PATH      |                                           |         |
| PL PATH      |                                           |         |
| BOTANY/AMER/ | Ethnobotany                                |         |
| AMER IND/    |                                           |         |
| ANTHRO/      |                                           |         |
| BIOCHEM 501  | Introduction to Biochemistry               |         |
| BIOCORE 486  | Principles of Physiology Laboratory        |         |
| BIOCORE 587  | Biological Interactions                    |         |

- **Introductory Biology (Complete one option):**
  - **Option A, Recommended**
    - BOTANY/BIOL 130
  - **Option B: Introductory Biology**
    - BOTANY/BIOLOGICAL 130
    - ZOOLOGY 151
  - **Option C: BIOCORE**
    - BIOCORE 381
    - BIOCORE 382
    - BIOCORE 383
    - BIOCORE 384
    - BIOCORE 485

- **Botany Distribution - Five courses, to include at least one course in these areas:**
  - **Cell, Molecular, Physiology (1 course required):**
    - BOTANY 300
    - BOTANY 500
  - **Ecology (1 course required):**
    - BOTANY 305
    - BOTANY 330
    - BOTANY 340
    - BOTANY 400
    - BOTANY 401

- **Genetics, Evolution (1 course required):**
  - BOTANY/ANTHRO/ZOOLOGY 410
  - AGRONOMY/HORT 338
  - GENETICS 466
  - GENETICS 467
  - GENETICS 468

- **Diversity**
  - BOTANY 305
  - BOTANY 330
  - BOTANY 340
  - BOTANY 400
  - BOTANY 401

- **Optionally, 1 of the 5 required courses may come from this list, or students may take a second course from any area listed above:**
  - BOTANY/GEOG 338
  - BOTANY/AGRONOMY/HORT 339
  - BOTANY/AGRONOMY/SOIL SCI 370
  - BOTANY/F&W ECOL 402
  - BOTANY 403
  - BOTANY 422
  - BOTANY 450
  - BOTANY/ENTOM/ZOOLOGY 473
  - BOTANY/AMER IND/ANTHRO 474
  - BOTANY/ENTOM/PL PATH 505
  - BOTANY 563
  - BOTANY/ENVIR/BIOL/ECOL/BIOL 651
  - BOTANY/AMER/ENTOM/ZOOLOGY 501
  - BIOCHEM 501
  - BIOCORE 486
  - BIOCORE 587

- **The Vegetation of Wisconsin**
  - General Ecology
  - Evolutionary Biology
  - Plant Breeding and Biotechnology
  - Principles of Genetics
  - General Genetics
  - General Genetics 2
  - Plant Morphology and Evolution
  - Fungi
  - Vascular Flora of Wisconsin
  - Environmental Biogeography
  - Plant Biotechnology: Principles and Techniques I
  - Grassland Ecology
  - Dendrology
  - Field Collections and Identification
  - Plant Geography
  - Midwestern Ecological Issues: A Case Study Approach
  - Plant-Insect Interactions
  - Ethnobotany
  - Plant-Microbe Interactions: Molecular and Ecological Aspects
  - Phylogenetic Analysis of Molecular Data
  - Plant Biochemistry
  - Conservation Biology

- **Additional Course Requirements:**
  - **Total Credits: 14-20**
  - **Required Courses:**
    - PHYSICS 249
    - STAT 371
    - MATH 211 or MATH 221
  - **Recommended Courses for Graduate School:**
    - CHEM 109
    - CHEM 341
    - PHYSICS 115
  - **Botany Distribution:**
    - 5 courses
    - At least one course in each of the following areas:
      - Cell, Molecular, Physiology
      - Ecology
  - **Genetics, Evolution:**
    - 1 course
  - **Additional Requirements:**
    - 1 course from the following:
      - BOTANY/ANTHRO/ZOOLOGY 410
      - AGRONOMY/HORT 338
      - GENETICS 466
      - GENETICS 467
      - GENETICS 468
  - **Diversity Courses:**
    - 1 course
    - 1 course from any area listed above
  - **Optional Courses:**
    - 1 course from the following:
      - BOTANY/GEOG 338
      - BOTANY/AGRONOMY/HORT 339
      - BOTANY/AGRONOMY/SOIL SCI 370
      - BOTANY/F&W ECOL 402
      - BOTANY 403
      - BOTANY 422
      - BOTANY 450
      - BOTANY/ENTOM/ZOOLOGY 473
      - BOTANY/AMER IND/ANTHRO 474
      - BOTANY/ENTOM/PL PATH 505
      - BOTANY 563
      - BOTANY/ENVIR/BIOL/ECOL/BIOL 651
      - BOTANY/AMER/ENTOM/ZOOLOGY 501
      - BIOCHEM 501
      - BIOCORE 486
      - BIOCORE 587

- **Additional Notes:**
  - Recommended courses for graduate school.
  - Some programs may require a sequence of organic chemistry courses.
  - Students should consult with academic advisors for specific requirements.

- **Additional Recommendations:**
  - Students preparing for graduate school should consider taking additional courses beyond the required credits.
  - Students may need to consult with their academic advisors to tailor their course selections to their specific goals.

- **Contact Information:**
  - Academic Advising
  - Graduate Programs
  - Departmental Contacts

- **Important Dates:**
  - Registration Deadlines
  - Exam Dates
  - Grading Policies

- **Resources:**
  - Course Syllabi
  - Library Resources
  - Online Learning Tools
F&W ECOL 415  Tree Physiology
MICROBIO 303  Biology of Microorganisms
ZOOLOGY 570  Cell Biology

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<tr>
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<tbody>
<tr>
<td>Independent Research Experience—choose one:</td>
<td>3-6</td>
<td></td>
</tr>
<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>
<tr>
<td>BOTANY 699</td>
<td>Directed Study</td>
<td>3-4</td>
</tr>
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1 In addition to BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY 101 and/or ZOOLOGY/BIOLOGY 102 will count towards 30 credits of Botany major.

2 Completion of the BIOCORE sequence also satisfies the Genetics, Evolution area (BIOCORE 381 & BIOCORE 382 & BIOCORE 383 & BIOCORE 384 & BIOCORE 485).

3 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

1 BOTANY 300–699 are considered upper level.

**HONORS IN THE MAJOR**

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

**HONORS IN THE MAJOR IN BOTANY: REQUIREMENTS**

To earn Honors in the Major in Botany, students must satisfy the requirements for the major (above) and the following additional requirements:

3.300 University GPA
3.400 GPA in all BOTANY and major courses
Complete a Senior Honors Thesis in BOTANY 681 & BOTANY 682, for a total of 6 credits
12 additional credits in Intermediate/Advanced level BOTANY, taken for Honors

1 Excluding BOTANY 681 and BOTANY 682.