About this Program

- **College**: Agricultural and Life Sciences
- **Degree**: Bachelor of Science
- **Credits for Degree**: 120
- **Specializations**: General Botany | Botanical Research
- **Additional Information**
- **Related Botany Programs**

To graduate with this major, students must complete all university, college, and major requirements.

Small classes are taught by faculty who have a commitment to undergraduate education. Students participate in mentored research, assisting faculty with research projects on campus and abroad. The major prepares students for careers in industry and government agencies, for graduate and professional schools, and for teaching jobs in high schools.

The general botany specialization is for students who may not intend to pursue a graduate degree but are interested in a career in plant biology. This specialization provides some flexibility in tailoring the courses needed in order to pursue specific interests. Students are encouraged to consult with an advisor and botany faculty member when deciding on which courses to take.

The botanical research specialization is for students who intend to pursue a graduate degree and requires research with a faculty member. This specialization provides some flexibility in tailoring the courses needed in order to pursue specific interests. Students are encouraged to consult with an advisor and botany faculty member when deciding on which courses to take.

Coursework for the Major

Required coursework is dependent upon the specialization. Coursework for each specialization can be found below under Critical Tracking and Model Semester Plan.

Relevant Minors and/or Certificates

Students majoring in botany can minor in most other disciplines, and this is a good way to organize students’ electives around areas of interest. Note that botany majors cannot minor in biology, nor can biology majors minor in botany (the curricula for the botany and biology majors are too similar).

UFTeach Program

More Info

There is a severe shortage of qualified secondary science teachers in Florida and nationwide. Students interested in becoming part of this high-demand profession should see a botany advisor or the UFTeach advisor. UFTeach students complete the UFTeach minor in science teaching with their B.S. in botany and have the coursework and preparation for professional teacher certification in Florida when they graduate.

Research

More Info

Botany majors are strongly encouraged to participate in research, and research is required for the Botanical Research specialization. Research experience is valuable on many levels: it diversifies the college experience; it teaches students how scientists apply the knowledge gained in the classroom to real world questions; it provides the opportunity to work with and get to know researchers who are the best in their field; it introduces students to cutting edge scientific questions and techniques; it can enhance a student’s resume/CV when applying to graduate or professional school; and finally it is essential in helping students determine if science is a good career choice.

CALS botany majors may participate in research for course credit, as a scholar (e.g., University Scholar, Science for Life Scholar, Beckman Scholar), as a volunteer, or, in rare cases, as a paid research assistant. Please visit Undergraduate Research for information regarding course credit. Students who plan to enroll for course credit must contact potential research mentors, develop a project, and turn in the required application and proposal no later than the week before drop/add. If the window is missed, students should still contact potential research mentors, if only to discuss upcoming opportunities.

Related Botany Programs

- Combined Degree
- Bachelor of Science in Botany, CLAS
- Botany minor

General Botany

This option is intended for students who do not plan to attend graduate or professional school, but are planning a career in government, public service, or secondary education. A student must achieve a minimum grade of C in all required courses for the major.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tr>
<td>Select one of the following:</td>
<td>4-7</td>
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<tr>
<td>BOT 2010C &amp; BOT 2011C</td>
<td>Introductory Botany and Plant Diversity (preferred) ¹</td>
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<td>BSC 2010 &amp; 2010L</td>
<td>Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1</td>
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<tr>
<td>BSC 2011 &amp; 2011L</td>
<td>Integrated Principles of Biology 2 and Integrated Principles of Biology Laboratory 2</td>
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<tr>
<td>CHM 2045 &amp; 2045L</td>
<td>General Chemistry 1 and General Chemistry 1 Laboratory</td>
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<tr>
<td>CHM 2046 &amp; 2046L</td>
<td>General Chemistry 2 and General Chemistry 2 Laboratory</td>
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<tr>
<td>MAC 1147 or MAC 2311</td>
<td>Precalculus Algebra and Trigonometry Analytic Geometry and Calculus 1</td>
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<td>Select one of the following:</td>
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<tr>
<td>STA 2023</td>
<td>Introduction to Statistics 1</td>
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</table>
Semester 1

- Complete 1 of 5 critical-tracking courses, including lab:
  BSC 2010/BSC 2010L or BOT 2010C, BSC 2111/BSC 2111L or MAC 1147, MAC 2311 or STA 2023
  - 2.0 UF GPA required

Semester 2

- Complete 1 additional critical-tracking course, including labs
  - 2.0 UF GPA required

Semester 3

- Complete 1 additional critical-tracking course, including labs, with a 2.5 GPA required for all critical-tracking courses
  - 2.0 UF GPA required

Semester 4

- Complete 1 additional critical-tracking course, including labs, with 2.5 GPA required for all critical-tracking courses
  - 2.0 UF GPA required

Semester 5

- Complete all critical-tracking courses, including labs, with 2.5 GPA required for all critical-tracking courses
  - 2.0 UF GPA required

Students are expected to complete the writing requirement while in the process of taking the courses below. Students are also expected to complete the general education international (GE-N) and diversity (GE-D) requirements concurrently with another general education requirement (typically, GE-C, H or S).

To remain on track, students must complete the appropriate critical-tracking courses, which appear in bold. These courses must be completed by the terms as listed above in the Critical Tracking criteria. This semester plan represents an example progression through the major. Actual courses and course order may be different depending on the student’s academic record and scheduling availability of courses. Prerequisites still apply.

### Course Table

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<tr>
<td>BSC 2010</td>
<td>Integrated Principles of Biology 1 and Integrated Principles of Biology Laboratory 1 (Critical Tracking; Gen Ed Biological Sciences)</td>
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<tr>
<td>&amp; 2010L</td>
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<tr>
<td>BOT 2010C</td>
<td>Introductory Botany (Critical Tracking; Gen Ed Biological Sciences)</td>
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<tr>
<td>IUUF 1000</td>
<td>What is the Good Life (Gen Ed Humanities)</td>
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<tr>
<td>Select one:</td>
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<td>MAC 2311</td>
<td>Analytic Geometry and Calculus 1 (Critical Tracking; State Core Gen Ed Mathematics)</td>
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State Core Gen Ed Composition; Writing Requirement 3

BSC 1920 First Year Introduction: Biology at UF (recommended elective) 1

### Credits

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<th>Semester One</th>
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**Notes:**

1. Students who choose BOT 2011C to fulfill the foundation requirements may not use BOT 2011C to fulfill the biodiversity breadth requirements for the major.

Critical Tracking records each student’s progress in courses that are required for entry to each major. Please note the critical-tracking requirements below on a per-semester basis.

Equivalent critical-tracking courses as determined by the State of Florida Common Course Prerequisites may be used for transfer students.
BSC 2011 & 2011L Integrated Principles of Biology 2 and Integrated Principles of Biology Laboratory 2 (Critical Tracking; Gen Ed Biological Sciences)

BOT 2011C Plant Diversity (Critical Tracking; Gen Ed Biological Sciences)

CHM 2045 & 2045L General Chemistry 1 and General Chemistry 1 Laboratory (Critical Tracking; State Core Gen Ed Biological and Physical Sciences)

Gen Ed Composition; Writing Requirement 3
State Core Gen Ed Social and Behavioral Sciences 3

Credits 14

Semester Four

Select one: 3-4
AEB 2014 Economic Issues, Food and You (Gen Ed Social and Behavioral Sciences)
AEB 3103 Principles of Food and Resource Economics (Gen Ed Social and Behavioral Sciences)
ECO 2023 Principles of Microeconomics (Gen Ed Social and Behavioral Sciences)
PHY 2004 Applied Physics 1 & 2004L and Laboratory for Applied Physics 1
Select one: 3
STA 2023 Introduction to Statistics 1 (Gen Ed Mathematics)
COP 2800 Computer Programming Using JAVA (or equivalent)
COP 3275 Computer Programming Using C (or equivalent; Gen Ed Mathematics)
BSC 2891 Python Programming for Biology
Gen Ed Social and Behavioral Sciences 3

Credits 13-14

Semester Five

Select one: 3-4
PCB 4043C General Ecology
PCB 3601C Plant Ecology
BOT 3151C Local Flora of North Florida
BSC 3307C Climate Change Biology
PCB 4674 Evolution
Gen Ed Humanities 3

Credits 14-15

Semester Six

AEC 3030C Effective Oral Communication
AGR 3303 Genetics or PCB 3063
BOT 2710C Practical Plant Taxonomy
BOT 4935/5225C Special Topics (Plant Anatomy) or PCB 3023

Select one: 3-4
AGG 3501 Environment, Food and Society
AGR 4304 Plant Chromosomes and Genomes
AGR 4320 Plant Breeding
AGR 4512 Physiology and Ecology of Crops
ALS 4163 Challenges in Plant Resource Protection
BCH 5045 Grad Survey Biochem (online)
BCH 3023 Elementary Organic and Biological Chemistry (online)

Credits 17-18

Semester Seven

BOT 3503 Physiology and Molecular Biology of Plants & 3503L and Physiology and Molecular Biology of Plants Laboratory
Select one: 3-4
PCB 4043C General Ecology
PCB 3601C Plant Ecology
BOT 3151C Local Flora of North Florida
BSC 3307C Climate Change Biology
Approved botany electives 6
Elective 3

Credits 16

Total Credits 120

Gen Ed Mathematics 1

Credits 3

Semester Eight

BSC 4936 Critical Analysis of Biological Research 2
Biology breadth courses 4
Electives 10

Credits 16

Code | Title | Credits
--- | --- | ---
AGG 3501 | Environment, Food and Society | 3
AGR 4304 | Plant Chromosomes and Genomes | 3
AGR 4320 | Plant Breeding | 3
AGR 4512 | Physiology and Ecology of Crops | 3
ALS 4163 | Challenges in Plant Resource Protection | 3
BCH 5045 | Grad Survey Biochem (online) | 4
BCH 3023 | Elementary Organic and Biological Chemistry (online) | 3
BOT 2800C | Plants in Human Affairs | 3
BOT 4053 | Practical Experience in Teaching Botany | 2
BOT 4621 | Plant Geography | 2
BOT 4935 | Special Topics (Botany) | 2-4
BOT 4935/5305 | Special Topics (Paleobotany) | 3
BSC 2862 | Global Change Ecology and Sustainability | 3
BSC 3402 | Theory and Practice in the Biological Sciences | 2
ENY 4161 | Insect Classification | 3
FNH 3131C | Dendrology/Forest Plants | 3
FOR 2662 | Forests for the Future | 3
FOR 3004 | Forests, Conservation and People | 3
FOR 3153C | Forest Ecology | 3
FOR 3342C | Tree Biology | 3
FOR 4060 | Global Forests | 3
HOS 3305 | Introduction to Plant Molecular Biology | 3
HOS 4304 | Horticultural Physiology | 3
HOS 4313C | Laboratory Methods in Plant Molecular Biology | 2
HOS 4341 | Advanced Horticultural Physiology | 3
MCB 4304 | Genetics of Microorganisms | 3
MCB 4320C | The Microbiome | 3
MCB 4503 | General Virology | 3
MCB 4652 | Environmental Microbiology | 3
ORH 3513C | Environmental Plant Identification and Use | 3
ORH 3773 | Public Gardens | 2
ORH 3815C | Florida Native Landscaping | 3
PCB 4553 | Population Genetics | 4
PCB 5338 | Principles Ecosystems | 3
The botany major is offered by both the College of Liberal Arts and Sciences and the College of Agricultural and Life Sciences. This major provides a foundation in the life sciences with emphasis on plant systems. Students will learn the diversity of life, the structure of organisms and ecosystems and how they function (i.e., the acquisition, flow, organization and uses of information, energy and nutrients in living systems). Students will learn the scientific method and how it facilitates the discovery of new knowledge in botany and biology, including how to critically evaluate hypotheses and conclusions.

### Before Graduating Students Must
- Achieve acceptable performance in all required botany courses.
- Complete requirements for the baccalaureate degree, as determined by faculty.

### Students in the Major Will Learn to

#### Student Learning Outcomes (SLOs)

**Content**
1. Identify, describe and explain the basic terminology, concepts, methodologies and theories used within the biological sciences.

**Critical Thinking**
2. Analyze biological information and develop reasoned solutions to problems using the processes and applications of scientific inquiry.
3. Discriminate ethical behavior from unethical behavior in scientific research.

**Communication**
4. Communicate knowledge, ideas and reasoning clearly and effectively in written or oral forms appropriate to the biological sciences.

### Curriculum Map

*I = Introduced; R = Reinforced; A = Assessed*

<table>
<thead>
<tr>
<th>Courses</th>
<th>SLO 1</th>
<th>SLO 2</th>
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<td>BOT 2710C</td>
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### Assessment Types
- Major field test for biology
- Bioethics quiz
- Scientific paper