

PLANT SCIENCE STUDENT RESOURCE MANUAL



TABLE OF CONTENTS

Part 1: Department Information	1
DEPARTMENT HEAD WELCOME	1
ACADEMIC ADVISOR.....	1
DEPARTMENT FACTS	2
DEPARTMENT CONTACT INFORMATION.....	2
Part 2: General Information	3
STUDENT RESPONSIBILITIES	3
SCHOLARSHIPS.....	4
AWARDS	4
TEACHING OPPORTUNITIES.....	5
BOTANY AMBASSADORS	5
STUDENT ORGANIZATIONS	5
STUDENT RESOURCES.....	6
UNDERGRADUATE TIMELINE.....	7
Part 3: Curriculum Information	8
FACULTY MENTORS	8
QUESTIONS TO ASK FACULTY MENTORS.....	9
PLANT SCIENCE PLAN OF STUDY	10
COURSE PREREQUISITES.....	11
UNIVERSITY CORE REQUIREMENTS.....	12
COLLEGE OF AGRICULTURE REQUIREMENTS	12
FOCUS SELECTIVE LIST	13
BOTANY (BTNY) COURSE LIST	16
MINORS	19
GRADES.....	21
ACADEMIC PROBATION POLICY.....	22
Appendices	Error! Bookmark not defined.
APPENDIX A - GRADUATE SCHOOL APPLICATION TIMELINE.....	23
APPENDIX B - INFORMATIONAL INTERVIEWING	24
APPENDIX C - BOILER DICTIONARY	26



DR. CHRISTOPHER STAIGER

Department Head &
Distinguished Professor

staiger@purdue.edu

DEPARTMENT HEAD WELCOME

Dear Plant Science Students:

Welcome to the Department of Botany and Plant Pathology! We hope that you find your time as student in our program both rewarding and stimulating. Our faculty and staff are here to assist with both your short- and long-term career aspirations and provide a challenging, yet nurturing environment.

Plant and microbial science research are at the cutting edge of providing technological solutions to real world problems. Our faculty conduct innovative, world-class research that spans the spectrum of fundamental to applied, providing students with myriad opportunities to engage in research opportunities outside the classroom.

For the 2019-20 academic year, undergraduate majors will find that we have extensively revamped our curriculum and course offerings. Most notably, we have developed a new, 2-semester freshman core BTNY120/121 *Principles of Plant Biology I & II* that replaces the old 110/111 series for majors. Numerous other changes should benefit upperclassmen and freshmen alike.

Good luck with your studies and we very much look forward to helping you develop as both a student and a person.

Best regards,
Chris



Darcy Allen

Academic
Advisor

darcyallen@purdue.edu

ACADEMIC ADVISOR

Darcy Allen is the academic advisor for the Department of Botany and Plant Pathology. She is here to help you succeed at Purdue. She can help you with scheduling the classes you need, finding resources for academic and social success, choosing a minor, and with navigating a new environment. Make an appointment via Boiler Connect or by email.

Students can expect their Advisor to:

- Help guide students through their plan of study and give advice about course requirements.
- Inform students of the required prerequisites for subsequent courses in their program.
- Assist with long- and short-term goal setting.
- Talk with students about their strengths, interests, and abilities.
- Educate students on various policies and procedures necessary to navigate the University.
- Refer students to additional campus resources or services as needed.

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DEPARTMENT FACTS

- The Department of Botany and Plant Pathology was founded in 1887.
- The very first Ph.D. degree awarded from Purdue University was to a student in our department in 1897 named Daniel MacDougal for his thesis titled, “Curvature of Roots”.
- Today the department consists of 37 faculty member who perform research in Plant Pathology, Plant Biology, and Weed Science.
- We have 59 graduate students and 55 undergraduate students.
- Our department also manages the Joseph C. Arthur Herbarium, the Plant and Pest Diagnostic Lab, and Purdue Pesticide Programs.
- Our undergraduate program consists of one major; Plant Science. This major has built in Focus Selective classes that allow each student to select classes based on their unique interests and goals.
- We also offer three minors for Plant Science majors:
 - Plant Biology
 - Plant Pathology
 - Weed Science



DEPARTMENT CONTACT INFORMATION

Department of Botany and Plant Pathology
Lilly Hall of Life Sciences, Room 1-446
915 W. State Street
West Lafayette, IN 47907

765-494-0352
plants@purdue.edu

STUDENT RESPONSIBILITIES

Success in college requires that you take ownership for your educational and professional development. Your academic advisor and faculty mentor will inform you of deadlines, help you meet degree requirements, and give advice. However, you are ultimately responsible for meeting those deadlines and keeping track of your degree progress. You should also do the following:

CHECK YOUR PURDUE.EDU EMAIL

Your purdue.edu email is the official method of communication used by the University, the department, and your advisor. You are responsible for the materials and information sent to your email, even if you choose not to read them.

If you choose not to use the Purdue University email system as your primary email account, be sure to have your email forwarded and regularly check your email so you receive information in a timely fashion. Periodically check your purdue.edu email to make sure all messages have forwarded correctly.

UNDERSTAND YOUR DEGREE REQUIREMENTS

It is your responsibility to read and understand this manual and the requirements within. If you have questions, please do not hesitate to ask.

KEEP TRACK OF YOUR DEGREE PROGRESS

You should regularly maintain and update your own advising file and plan of study.

TAKE ACTION

You are required to follow up on any academic or financial actions that have been requested. Failure to do so can result in termination of your registration or a hold placed on your account. Remember, it is easier to remain in good standing than to try to correct oversights for the simple reason that some may not be correctable.

SCHOLARSHIPS

Scholarships can be awarded at the university, college, or departmental level. You can view a full list of scholarships and application information on the College of Agriculture Scholarship website ag.purdue.edu/oap/pages/scholarships.aspx. Applications for most scholarships become available in the fall semester on October 1.

Department Scholarships

Application deadline: February 1, 2020

Botany Scholarship

Awarded to selected students in each grade level.

John Robert Mitchell, Sr. Memorial Scholarship

Created in 2012 by former Botany employee, Robert Mitchell, Jr., in memory of his father. This scholarship is awarded to selected in-state students in the Plant Science major.

AWARDS

Outstanding Student

One student from each grade level (freshman, sophomore, junior, senior), will be selected as the department Outstanding Students. These four students will move on for consideration in the college level Outstanding Student awards.

Best Undergraduate Poster

Undergraduate level research posters submitted to the Department Research Showcase in November are judged by a group of faculty and/or graduate students. The top student receives a cash award and certificate.

College of Agriculture Scholarship application for the 2020-21 academic year will open on October 1, 2019.

TEACHING OPPORTUNITIES

During the Fall and Spring semesters the Department of Botany and Plant Pathology hires graduate students and undergraduate students to serve as teaching assistants in some of the Botany (BTNY) courses. These are paid positions and can give you valuable experience in teaching.

Teaching assistants may grade papers, administer exams, and even teach a lab section. Experienced TAs may be asked to teach a class in a teacher's absence. If you are interested in becoming a TA please speak with John Cavaletto, the department lab coordinator.

JOHN CAVALETTO

Department Lab
Coordinator
LILY 1-418
cavalett@purdue.edu

BOTANY AMBASSADORS

Ambassadors communicate with applicants, blog, give tours, and assist in department events. Students may apply to be an ambassador in the spring semester after their 4th semester.

2019-2020 Ambassadors

Alex Angel, Senior

Krista Johnson, Senior

Monica Haughan, Senior

Josh Randall, Senior

Cayla Haupt, Senior

Ethan Smiley, Sophomore

STUDENT ORGANIZATIONS

Purdue University has over 1,000 clubs covering a massive variety of interests.

boilerlink.purdue.edu

Botany Club

Open to all majors, this club brings together those students with a passion for plants. Activities and fundraisers take place throughout the year.

2019-2020 Botany Club Officer Team

President

Vice President

Treasurer

Monica Haughan

Anjali Byappanahalli

Natalie Carter

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abyappan@purdue.edu

carte247@purdue.edu

STUDENT RESOURCES

Purdue has many resources available for students to use. Many are provided without cost. Visit www.purdue.edu/purdue/current_students for a full list.

EMOTIONAL HEALTH RESOURCES

Counseling and Psychological Services, or CAPS, allows you access to therapists and psychologists who are specifically trained in college mental health. Students are entitled to 6 free visits a semester.

www.purdue.edu/CAPS/
765-494-6995

PHYSICAL HEALTH RESOURCES (PUSH)

The Purdue University Student Health center, or PUSH, is a doctor's office and Urgent Care facility right on campus.

www.purdue.edu/PUSH/
765-494-1700

OFFICE OF DEAN OF STUDENTS (ODOS)

ODOS can assist you in many ways. The most common is helping you notify professors of an absence due to illness or the death of a relative. They also assist students who are withdrawing from the university or need short term, interest free loans.

www.purdue.edu/odos/
765-494-1747

DISABILITY RESOURCE CENTER (DRC)

The DRC ensures qualified students with disabilities equal access to all University programs, services, and activities. Services include exam accommodations, note takers, closed captioning, and more.

www.purdue.edu/drc

STUDENT SUCCESS

The Student Success office provides students with resources, workshops, and study sessions. They run a peer mentoring program and match students with tutors.

www.purdue.edu/studentsuccess

JOB PLACEMENT ASSISTANCE

The Center for Career Opportunities, or CCO, offers workshops, resume writing help, job counseling, and job placement assistance.

www.cco.purdue.edu
765-494-3981

OFFICE OF MULTICULTURAL PROGRAMS (OMP)

ag.purdue.edu/omp

UNDERGRADUATE TIMELINE

FRESHMAN YEAR - SELF-EXPLORATION

Fall Semester

- Review your online presence with future employers in mind
- Revise your online profiles or adjust privacy settings
- Be mindful of future comments you make and pictures added
- Create a resume and your myCCO account
- CCO or your advisor can help with this
- Attend the Agriculture Career Fair
- Join clubs and organizations; Get Involved!
- Ask about research opportunities in a lab, field, and/or greenhouse

Spring Semester

- Evaluate your workload
 - How did you do 1st semester?
 - Do you need to drop some club involvements or responsibilities?
 - Should you take fewer credits a semester?
- If you are undecided in your career, visit CCO
- Finalize your summer plans; work, internship, classes

SOPHOMORE YEAR - CAREER EXPLORATION

Fall Semester

- Evaluate your summer job/internship
- Identify likes/ dislikes
- Update your resume
- Attend the Agriculture Career Fair
- Perform Informational Interviews to learn about jobs
See Appendix B for forms

Spring Semester

- Work with your advisor to form a semester plan for your last two years
- Continue performing Informational Interviews to learn about jobs
- Finalize your summer plans; work, internship, classes

JUNIOR YEAR - GAINING EXPERIENCE

Fall Semester

- Evaluate your summer job/internship
- Identify likes/dislikes o Compare to last summer
- Consider what jobs might incorporate your “likes”
- Update your resume
- Attend the Agriculture Career Fair
- Look for Out-of- State internships

Spring Semester

- Take a serious look at your career interests
- Evaluate the job market and research the industry
- Decide if you want to attend Graduate School
- If yes, see Appendix A for a Graduate School Timeline
- Finalize your summer plans; work, internship, classes

SENIOR YEAR - JOB SEARCHING

Fall Semester

- Evaluate your summer job/internship
- Was this job closer to what you want to do?
- Update your resume
- Attend Agriculture Career Fair
- Take this career fair seriously, employers are more selective and interviews are tougher for full time jobs vs. internships
- Visit CCO for interviewing tips or workshops
- Fill out Graduate School applications

Spring Semester

- Follow up with companies, schedule interviews
- Research competitive pay levels and benefits
- Learn to negotiate and compare job offers
- Prepare for the “real world”
- Talk to your parents, get advice
- Should you rent an apartment or buy a house
- How do you make a budget
- How should you save for retirement
- When can you no longer use your parents’ insurance
- Monitor Graduate School applications
- Visit schools Talk to professors about working in their labs

FACULTY MENTORS

In addition to meeting with Wendy Madore each semester, you will also meet with a faculty mentor. These faculty members serve as a mentor for the research and professional development side of your Purdue career.



DR. JODY BANKS
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banksj@purdue.edu



DR. LEONOR BOAVIDA
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DR. MIKE MICKELBART
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oakleyc@purdue.edu



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DR. BRYAN YOUNG
LILY 1-347
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DR. YUN ZHOU
LILY B-472
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QUESTIONS TO ASK FACULTY MENTORS

FRESHMAN YEAR

Fall

- What types of careers can I get with my degree?
- How can I get more involved in research as a freshman?

Spring

- Should I get a minor in anything? Will it be beneficial?
- What type of BTNY or plant science electives should I take?

SOPHOMORE YEAR

Fall

- What should I look for in an internship or summer job?
- Are there any professional organizations or groups that I should join?

Spring

- My interests are in_____. My goal is_____. Can we discuss my options and how I can reach my goals?
- For undergraduate research, which professor's work would best fit with my interests?

JUNIOR YEAR

Fall

- Do you think Graduate School would be a good option for me?
- What are the advantages/disadvantages of getting a MS or PhD degree?

Spring

- What are the differences between working for government and private companies?
- Should I take some graduate level courses?

SENIOR YEAR

Fall

- I've been looking at jobs and wanted to talk about my job search plan.
- Are there any opportunities for me to publish or show off my research results?

PLANT SCIENCE PLAN OF STUDY

Plant Science Bachelor of Science in Agriculture (120 Credits) *Effective Fall 2019 (202010)*

Student Name: _____

Beginning Semester: _____

<i>Freshman Year</i>					
First Semester			Second Semester		
0.5		AGR 10100 Intd to Agr And Purdue	4		BTNY 12100 Principles of Plant Biology II
1		AGR 12500 Intro to Plant Science Programs	3		BTNY 20700 The Microbial World
4		BTNY 12000 Principles of Plant Biology I	3		CHM 11200 General Chemistry
3		CHM 11100 General Chemistry	3		COM 11400 Fund of Speech or COM 21700
4		ENGL 10600 First Year Composition or ENGL 10800	3		Unrestricted Elective
3		MA 16010 Applied Calculus I			
15.5			16		

<i>Sophomore Year</i>					
Third Semester			Fourth Semester		
1		BTNY 20800 Introcuton to Plant Science Research	3		AGRY 32000 Genetics
3		BTNY 26200 Plant Structure and Tissue Biology	1		AGRY 32100 Genetics Lab
4		CHM 25700 Organic Chemistry	3		BTNY 30200 Plant Ecology
1		CHM 25701 Organic Chemisty Lab	3		PHYS 21400 The Nature of Physics
3		Focus selective	3		Science, Technology, & Society Selective
3		UCC Humanities selective	3		Focus selective
15			16		

<i>Junior Year</i>					
Fifth Semester			Six Semester		
3		BCHM 30700 Biochemistry	4		HORT 30100 Plant Physiology
3		BTNY 30500 Plant Evolution and Taxonomy	3		STAT 30100 Elementary Statistical Methods or STAT 50300
3		Economics selective	3		BTNY 42000 Plant Cellular and Developmental Biology
3		Focus selective	3		Humanities or Social Science selective
1		BTNY 49700 Research Seminar	3		Unrestricted Elective
13			16		

<i>Senior Year</i>					
Seventh Semester			Eighth Semester		
3		BTNY 49800 Research in Plant Science	3		Written or Oral Communication Selective
3		Focus selective	3		Focus selective (300+)
3		Humanities or Social Science selective (300+)	3		Humanities or Social Science selective
3		Unrestricted Elective	3		Focus selective
3		Unrestricted Elective	1.5		Unrestricted Elective
15			13.5		

Required Number of Credits: 120

Number of Credits Earned:

COURSE PREREQUISITES

AGRY 320	(Undergraduate level BIOL 11000 Minimum Grade of D- and Undergraduate level BIOL 11100 Minimum Grade of D-) or (Undergraduate level BIOL 11000 Minimum Grade of D- and Undergraduate level BTNY 11000 Minimum Grade of D-) or (Undergraduate level BTNY 11000 Minimum Grade of D- and Undergraduate level BTNY 11100 Minimum Grade of D-) or (Undergraduate level BIOL 11100 Minimum Grade of D- and Undergraduate level BTNY 11000 Minimum Grade of D-) or (Undergraduate level HORT 30100 Minimum Grade of D- and Undergraduate level BTNY 11000 Minimum Grade of D-)
AGRY 321	Undergraduate level AGRY 32000 Minimum Grade of D- [may be taken concurrently]
BCHM 307	Undergraduate level CHM 25600 Minimum Grade of D- or Undergraduate level CHM 26200 Minimum Grade of D- or Undergraduate level CHM 25700 Minimum Grade of D- or Undergraduate level CHM 26605 Minimum Grade of D- or Undergraduate level MCMP 20500 Minimum Grade of D-
BTNY 207	Undergraduate level BTNY 11000 Minimum Grade of D- or (Undergraduate level BIOL 11000 Minimum Grade of D- and Undergraduate level BIOL 11100 Minimum Grade of D-)
BTNY 302	Undergraduate level BIOL 11000 Minimum Grade of D- or Undergraduate level BIOL 11100 Minimum Grade of D- or Undergraduate level BTNY 11000 Minimum Grade of D-
BTNY 305	Undergraduate level BIOL 11000 Minimum Grade of D- or Undergraduate level BIOL 11100 Minimum Grade of D- or Undergraduate level BTNY 11000 Minimum Grade of D-
BTNY 316	Undergraduate level BTNY 11000 Minimum Grade of D-
BTNY 497	Undergraduate level BTNY 49800 Minimum Grade of D-
CHM 112	Undergraduate level CHM 11100 Minimum Grade of D- or Undergraduate level CHM 11500 Minimum Grade of D- or (Undergraduate level CHEM C1010 Minimum Grade of D- and Undergraduate level CHEM C1210 Minimum Grade of D-)
CHM 257	Undergraduate level CHM 11200 Minimum Grade of D or Undergraduate level CHM 11600 Minimum Grade of D or Undergraduate level CHM 12600 Minimum Grade of D or Undergraduate level CHM 13600 Minimum Grade of D or Undergraduate level CHM 12400 Minimum Grade of D or (Undergraduate level CHEM C1020 Minimum Grade of D and Undergraduate level CHEM C1220 Minimum Grade of D) or (Undergraduate level CHEM C1060 Minimum Grade of D and Undergraduate level CHEM C1260 Minimum Grade of D) or Undergraduate level CHM 10901 Minimum Grade of D or Undergraduate level CHM 12901 Minimum Grade of D
CHM 25701	Undergraduate level CHM 25700 Minimum Grade of D [may be taken concurrently]
HORT 301	Undergraduate level BIOL 11000 Minimum Grade of D- or Undergraduate level BTNY 11000 Minimum Grade of D-) or (Undergraduate level BIOL 13100 Minimum Grade of D- and Undergraduate level BIOL 13200 Minimum Grade of D-)) and (Undergraduate level CHM 25500 Minimum Grade of D- or Undergraduate level CHM 25700 Minimum Grade of D- or Undergraduate level CHM 26200 Minimum Grade of D- or Undergraduate level CHEM C3410 Minimum Grade of D- or Undergraduate level CHM 26100 Minimum Grade of D- or Undergraduate level CHEM C3420 Minimum Grade of D-)
MA 15910	ALEKS Math Assessment 060 or Undergraduate level MA 15300 Minimum Grade of C- or Undergraduate level MATH 15300 Minimum Grade of C- or Undergraduate level MA 15800 Minimum Grade of C- or Undergraduate level MA 15900 Minimum Grade of C-

UNIVERSITY CORE REQUIREMENTS

Purdue University requires each student to satisfy the University Core by taking a course to satisfy each of the categories below. Most of these will be satisfied with courses currently listed on the plan of study.

- Humanities
- Behavioral/Social Science
- Information Literacy
- Science #1
- Science #2
- Science, Technology, and Society
- Written Communication
- Oral Communication
- Quantitative Reasoning

COLLEGE OF AGRICULTURE REQUIREMENTS

The College of Agriculture has set the following requirements that must be met, in addition to department plan of study requirements, before a degree can be awarded.

- Students must maintain a 2.0 cumulative GPA
- At least 2 semesters of coursework must be completed at Purdue
- 32 credits of upper division courses must be taken from Purdue (Upper division courses are classified as courses with numbers at the 30000-level or higher)
- Of the 15 credits of Humanities/Social Science, 9 must be from outside the College of Agriculture
- Students must complete 9 credits of International Understanding
- Student must complete 3 credits of Multicultural Awareness

Course lists for the University Core Requirements, International Understanding, and Multicultural Awareness can be found online at https://ag.purdue.edu/oap/Pages/core_requirements.aspx.

FOCUS SELECTIVE LIST

ABE 32500	Soil and Water Resource Engineering
AGEC 25000	Economic Geography of World Food and Resources
AGEC 34000	Economics of World Development
AGEC 41000	Agricultural Policy
AGRY 10500	Crop Production
AGRY 12000	Water and Food Security
AGRY 12500	Environmental Science and Conservation
AGRY 25500	Soil Science
AGRY 28500	World Crop Adaptation and Distribution
AGRY 29000	Introduction to Environmental Science (see AGRY 125)
AGRY 33500	Weather and Climate
AGRY 34900	Soil Ecology
AGRY 35000	Global Awareness
AGRY 38500	Environmental Soil Chemistry
AGRY 45000	Soil Conservation and Water Management
AGRY 48000	Plant Genetics
AGRY 52000	Principles and Methods of Plant Breeding
AGRY 52500	Crop Physiology and Ecology
AGRY 53000	Advanced Plant Genetics
AGRY 54400	Environmental Organic Chemistry
AGRY 54500	Remote Sensing of Land Resources
AGRY 58500	Soils and Land Use
ASM 23600	Environmental Systems Management
BCHM 22100	Analytical Biochemistry
BCHM 56100	General Biochemistry I
BCHM 56200	General Biochemistry II
BIOL 24100	Biology IV: Genetics and Molecular Biology
BIOL 41500	Introduction to Molecular Biology
BIOL 41600	Viruses and Viral Diseases
BIOL 43800	General Microbiology
BIOL 48100	Eukaryotic Biology
BIOL 51700	Molecular Biology: Proteins
BIOL 58000	Evolution
BIOL 59500	Cell Biology of Plants
BTNY 11100	Principles of Plant Biology
BTNY 20100	Plants and Civilizations
BTNY 28500	Plant and Civilizations

BTNY 30100	Introductory Plant Pathology
BTNY 30400	Introductory Weed Science
BTNY 35000	Biotechnology in Agriculture
BTNY 39000	Selected Topics in Plant Science
BTNY 42000	Plant Cellular and Developmental Biology
BTNY 44300	Arthropods and Diseases
BTNY 44600	Ornamental Plant Health
BTNY 50400	Advanced Weed Science
BTNY 50500	Advanced Biology of Weeds
BTNY 52500	Intermediate Plant Pathology
BTNY 53500	Plant Disease Management
BTNY 55000	Biology of Fungi
BTNY 55200	Molecular Approaches to Plant Pathology
BTNY 55300	Plant Growth and Development
EAPS 10000	Planet Earth
EAPS 11100	Physical Geology
EAPS 11300	Environmental Geology (see EAPS 125)
EAPS 12500	Environmental Science and Conservation
ENGL 23400	Ecological Literature
ENTM 20600	General Entomology
ENTM 20700	General Entomology Laboratory
ENTM 31100	Insect Ecology
ENTM 41000	Insect Pest Management
EPICS	Agriculture Related Projects
FNR 10300	Introduction to Environmental Conservation (see FNR 125)
FNR 12500	Environmental Science and Conservation
FNR 20100	Marine Biology
FNR 21000	Natural Resource Information Management
FNR 22500	Dendrology
FNR 23000	The World's Forests and Society
FNR 30500	Conservation Genetics
FNR 33100	Forest Ecosystems
FNR 33300	Fire Effects in Forest Environments
FNR 34100	Wildlife Habitat Management
FNR 35300	Natural Resources Assessment
FNR 35700	Fundamental Remote Sensing
FNR 36500	Natural Resources Issues, Policy, and Administration
FNR 40600	Natural Resources and Environmental Economics
FNR 43400	Tree Physiology
FNR 43500	Physiological Ecology of Woody Plants

FNR 48800	Global Environmental Issues
FNR 50100	Limnology
FNR 50200	Watershed Hydrology, Ecology, and Management
FNR 50500	Molecular Ecology and Evolution
FNR 54000	Wetlands Ecology
FNR 54200	Ecology and Management of Declining, Rare, and Endangered Species
FNR 55800	Digital Remote Sensing and GIS
HORT 20100	Plant Propagation
HORT 40300	Tropical Horticulture
HORT 51500	Plant Cell, Tissue, and Organ Culture
HORT 55100	Biophysical Plant Physiology
HORT 59000	Weed Management in Turfgrass and Landscape Ecosystems
NRES 25500	Soil Science NRES 12500 Environmental Science and Conservation
NRES 28000	Hazardous Waste Handling
NRES 29000	Introduction to Environmental Science (see NRES 125)
POL 22300	Introduction to Environmental Politics
POL 30000	Introduction to Political Analysis
POL 32700	Global Green Politics
POL 42300	International Environmental Policy
SFS 30100	Agroecology
STAT 50300	Statistical Methods of Biology
STAT 51100	Statistical Methods

BOTANY (BTNY) COURSE LIST

COURSE TITLE	CREDITS	SEMESTER
BTNY 11000 - Introduction to Plant Science	4	Fall & Spring
An introduction to the major groups in the plant kingdom, their origin, classification, and economic importance. The areas of anatomy, morphology, cytology, physiology, biochemistry, molecular biology, genetics, and ecology will be explored as they relate to plant sciences and agriculture.		
BTNY 11100 - Principles of Plant Biology	4	Spring
The overall objective is to provide the students with a solid foundation in essential concepts in plant biology in order to better prepare them for more specialized study. Lectures and laboratory exercises will cover mechanisms and processes of plant genetics, physiology, and ecology. Topics will focus on mechanisms and processes that are fundamental to integrative cell, tissue, and organ functions as well as responses by plants to climatic and edaphic factors. Throughout the course, an emphasis will be made on the means by which scientific data is collected and interpreted, and key experiments performed in the lab component will be used to illustrate this process.		
BTNY 12000 - Principles of Plant Biology I	4	Fall
This course is the first of a two-semester series that introduces fundamental biological concepts as they relate to plant biology to better prepare students for more specialized study. Lectures and laboratory exercises will cover mechanisms and processes of plant diversity, anatomy, morphology, cell biology, growth and development. Our goal is to convey how these levels of organization and processes contribute to the relative success of plants within and across environments. Throughout the course, an emphasis will be placed on how scientific data are collected and interpreted, and key experiments performed in the lab component will be used to illustrate this process.		
BTNY 12100 - Principles of Plant Biology II		Spring 2021
BTNY 20700 - The Microbial World	3	Spring
This course delivers a broad synthesis of microbiology, discussing all taxa of the microbial world. The course also discusses a wide range of subjects related to microbiology, including medical microbiology, but it has a strong emphasis on the botanical and environmental sciences. One particular characteristic that separates it from other microbiology courses is the reduced emphasis upon bacteriology, with discussions of the protists and viruses and, especially of the fungi, occurring in greater detail than the other general microbiology courses available.		
BTNY 20800- Introduction to Plant Science Research	1	Fall
The course is designed to expose students to the diversity of Plant Science research at Purdue and help students to get started in research and in the fantastic world of scientific discovery. Students will learn the importance of Plant Science research in society and how to become active participants of Purdue research discoveries. Students will learn about the scientific method and how discoveries are made to find answers to world problems. The students will explore department and campus resources to identify areas of research interest, learn how to search and apply for research/internship opportunities and find faculty that can serve as professional models and mentors. We will provide opportunities for students to interact and network with faculty members, professionals from industry and students involved in diverse research areas.		
BTNY 26200 Plant Structure & Tissue Biology	3	Fall
This course focuses on fundamental knowledge of the internal structure of plants, including distinct cell types, tissues, tissue systems, and organs that make up a plant. Lectures and laboratories will cover the structural parts that comprise the plant body including three major vegetative organs (roots, stems, and leaves) and a set of reproductive organs (flowers, fruits, and seeds). The goal of this course is to understand the internal organization of plants, to learn multiple lab techniques critical for plant science research, and to develop critical thinking and problem solving skills.		

BTNY 28500 - Plants and Civilization	3	Spring
This course, intended primarily for non-majors, covers the history of agriculture, with focus on the centers of origin of our major food, fiber, and medicinal plants, and their historical, cultural, and economic relevance. The course also surveys the biology of crop plants, with respect to taxonomy, anatomy, cell structure, physiology, development, and genetics. Discussions also center on the roles plant biotechnology may play in sustainable agriculture and in helping to alleviate problems caused by overpopulation and ecological stress.		
BTNY 30100 - Introductory Plant Pathology	3	Fall/Spring
Basic principles of plant pathology, including etiology, symptomatology, control, and epidemiology of representative diseases of plants.		
BTNY 30200 Plant Ecology	3	Spring
This course will provide an introduction to the broad field of plant ecology. Through lectures and lab assignments, students will gain an in-depth understanding of ecological concepts regarding the occurrence and distribution of plant species and populations. Students will also gain insights into the application of these concepts to the conservation and management of plant species and populations.		
BTNY 30400 Introductory Weed Science	3	Fall
A survey of the scientific principles underlying weed control practices; emphasis is on the ecology of weeds and control in crop associations.		
BTNY 30500 Plant Evolution & Taxonomy	3	Fall
The principles of classification of seed plants, with emphasis on methods of identification in laboratory and field. Requires class trips. Students will pay individual lodging or meal expenses when necessary.		
BTNY 35000 Biotechnology in Agriculture	3	Spring
A study of the methods used to produce genetically modified organisms, primarily using gene transfer technology, and the application of these organisms in agriculture. The uses of microbes, plants, and animals in agricultural biotechnology are examined. Social, economic, and ethical issues related to biotechnology are discussed.		
BTNY 39000 Selected Topics in Plant Science	1-3	Fall/Spring
This research based course deals with special topics in botany not covered in regular undergraduate coursework. Credit depends upon work done. May be repeated once for credit. Permission of instructor required.		
BTNY 42000 Plant Cell and Dev. Biology	3	Spring
This course will focus on the fundamentals of plant cellular and developmental biology. Topics to be covered include: the structure and function of plant organelles and membranes; the cell cycle; DNA, RNA and protein synthesis; the secretory pathway, and the cellular basis of development and whole plant morphogenesis.		
BTNY 49700 Undergraduate Seminar	1	Fall
Professional preparation for careers in plant sciences. Career development activities including resume and cover letter preparation, job search and interview preparation, and participation in career fairs. In addition, the student will polish skills in preparation of seminar, extension publications, press releases and communicating science to lay personnel based on current issues in pest management and crop protection.		
BTNY 49800 Research in Plant Science	1-3	Fall/Spring
Supervised individual laboratory or field research. A written report of work accomplished will be required. Each credit hour equates to 3 hours of work per week. May be repeated once for credit. Permission of instructor required.		

research. Admission to the honors program required. Permission of instructor required.

MINORS

A minor is not required for the Plant Science major, but it can be a great way to diversify your knowledge base. There are hundreds of minors available across the university and you can work with your advisor to fit minor course requirements into your plan of study. A full list of minors offered at Purdue can be found online.

BOTANY AND PLANT PATHOLOGY DEPARTMENT MINORS

PLANT BIOLOGY

(15 CREDITS REQUIRED)

Required Courses (4 credits)

BTNY 11000 - Introduction To Plant Science or BTNY 12000
- Principles of Plant Biology I

Selective Courses (11 credits)

BTNY 20700 - The Microbial World
BTNY 28500 - Plants And Civilization
BTNY 30100 - Introductory Plant Pathology
BTNY 30200 - Plant Ecology
BTNY 30400 - Introductory Weed Science
BTNY 30500 - Fundamentals Of Plant Classification
BTNY 31600 - Plant Anatomy
BTNY 42000 - Plant Cellular And Developmental Biology
BTNY 49800 - Research In Plant Science *
BTNY 55000 - Biology Of Fungi
HORT 30100 - Plant Physiology

PLANT PATHOLOGY

(16 CREDITS REQUIRED)

Required Courses:

BTNY 11000 - Introduction To Plant Science
or BTNY 12000 - Principles of Plant Biology I
BTNY 30100 – Introductory Plant Pathology
BTNY 52500 – Intermediate Plant Pathology

Additional Courses (6 credits):

BTNY 20700 – The Microbial World
BTNY 49800 – Research in Plant
Science
BTNY 51700 – Diseases of Agronomic Crops
BTNY 53500 – Plant Disease Management
BTNY 55000 – Biology of Fungi

WEED SCIENCE

(15 CREDITS REQUIRED)

Required Courses (6 credits):

BTNY 30400 – Introductory Weed Science
BTNY 50400 – Advanced Weed Science OR BTNY 50500 –
Advanced Biology of Weeds

Additional Courses (9 credits):

BTNY 30200 – Plant Ecology
BTNY 30500 – Fundamentals of Plant Class.
BTNY 31600 – Plant Anatomy
BTNY 35000 – Biotechnology in Agriculture
BTNY 49800 – Research in Plant Science
HORT 30100 – Plant Physiology

COLLEGE OF AGRICULTURE MINORS

- Agricultural Systems Management
- Animal Sciences
- Biochemistry
- Crop Science
- Farm Management
- Fisheries and Aquatic Sciences
- Food and Agribusiness Management
- Food Science
- Forensic Science
- Forest Ecosystems
- Furniture Design
- Horticulture
- Insect Biology
- International Studies in Agriculture
- Landscape and Turf Landscape Management
- Natural Resources and Environmental Science
- Pet Food Processing
- Soil Science
- Sustainable Environments
- Turf Management
- Urban Forestry
- Wildlife Science
- Wood Products Manufacturing Technology

GRADES

To earn a Bachelor degree a student must complete 120 credits, meet all university, college, and departmental major requirements, and maintain at least a 2.0 GPA.

DEAN'S LIST

At the conclusion of each semester, the Registrar shall indicate which undergraduate students are scholastically eligible to be included on the Dean's List. To qualify one must:

1. Have at least 12 credit hours included in the cumulative GPA
2. Have at least 6 credit hours included in the semester GPA
3. Attain at least a 3.5 cumulative GPA
4. Have at least a 3.0 current semester GPA

SEMESTER HONORS

At the conclusion of each semester, the Registrar shall indicate which undergraduate students are scholastically eligible for Semester Honors. To be eligible one must:

1. Have at least 6 credit hours included in the semester GPA
2. Attain at least a 3.5 semester GPA
3. Have at least a 2.0 overall GPA

PASS/NOT-PASS OPTION

The College of Agriculture allows up to 21 credit hours in a student's plan of study to be taken under the pass/not-pass option. Students must be classified as sophomore or higher and have at least a 2.0 cumulative GPA. Courses listed on a plan of study that are required by number (i.e. CHM 111, BTNY 110/BTNY 120) cannot be taken as pass/not-pass. Students must earn a C- or higher to earn a "Pass" grade.

ACADEMIC PROBATION POLICY

WHAT IS PROBATION?

If you are on probation, you are at risk of being dropped from the University. A student is placed on academic probation if, at the close of any fall or spring semester, a student's semester or cumulative GPA is less than 2.0. The student will be removed from probation at the end of the next semester in which the student achieves a semester and cumulative GPA equal to or greater than 2.0.

Any grade changes due to a reporting error will result in a recalculation of the GPA and determination of probation standing. Academic standing will not be assessed in summer sessions.

WHEN IS A STUDENT PLACED ON DROP STATUS?

Once on probation, you need to bring your grades up to a satisfactory level. A student on scholastic probation will be dropped if, at the close of any fall or spring semester, the student's semester and cumulative GPA is less than a 2.0.

WHAT DOES IT MEAN TO BE DROPPED FROM PURDUE?

If you are dropped from the University, it means that you have not made sufficient progress to warrant continuing your education at Purdue. It does not prohibit you from attending another institution, or even returning to Purdue. Readmission to Purdue is not automatic. You can learn more about readmission on the Purdue Undergraduate Admissions website.

<https://www.admissions.purdue.edu/readmission/>

APPENDIX A - GRADUATE SCHOOL APPLICATION TIMELINE

SPRING OF JUNIOR YEAR

- Explore programs of interest; discuss strengths and weaknesses of programs with your professors
- Identify faculty within those programs who are doing research that interests you
- Contact those faculty to introduce yourself and express specific interest in their research; ask if they have any funding available
- Research admission and financial aid deadlines and requirements, read all instructions carefully and thoroughly
- Identify faculty or mentors who could provide letters of recommendation
- Register for required exams (GRE/TOEFL), study, and take exams during the summer if possible

FALL OF SENIOR YEAR

- Use Purdue's Online Writing Lab (OWL) to help with your Statement of Purpose and resume; visit their office to have your materials proofread and critiqued
- Complete each application thoroughly and submit materials well before deadlines
- Ask faculty or mentors to write recommendation letters. Ask 4-6 weeks before deadline and politely remind them as the deadline gets closer
- Check with all programs before deadlines to ensure your application is complete
- Once your application is complete, contact faculty again to remind them of your interest and to direct them to view your completed application

SPRING OF SENIOR YEAR

- Visit campuses for a tour and to meet possible faculty mentors
- Research funding packages and options; consider cost of living
- When you accept a program's offer, contact the other universities so they may admit students on their wait list

APPENDIX B - INFORMATIONAL INTERVIEWING

An informational interview is a meeting with an individual in a career field you would like to explore. It provides an opportunity to gather information and guidance about the people, environment, and skills involved in that field.

1. Identify a career field or specific job that you want to learn more about.
2. Ask your advisor, professors, or other contacts for names of possible contacts.
3. Do some basic research on your contact to see what their job title is and who they work for.
4. Get in touch with your contact. Explain who you are and that you want to learn more about their career and get advice. If possible, request an in-person interview at the job location. This will allow you to see the working environment.
5. Dress and act professionally. Be sure to follow any safety or dress codes.
6. Be confident and courteous during the interview. You can use the questions on the following page or come up with your own questions.
7. Send a thank-you note within a few days of the interview. Be sure to keep their contact information on file; this person may be an important job contact in the future.

INFORMATIONAL INTERVIEW QUESTIONS

Name of Contact:

Job Title:

Employer:

E-mail:

Date:

1. How do you spend a typical day or week in this job/organization?
2. What do you find the most/least satisfying about your job?
3. What kinds of college degree / credentials / skills are needed?
4. What kinds of part-time jobs or internships are helpful for entering this field?
5. What types of entry-level jobs are available in this field and what is the salary range?
6. What is the employment outlook (locally, regionally, and nationally)?
7. Are you active in any professional organizations? Are students able to join?
8. Do you have any advice for someone interested in this field?
9. Can you suggest anyone else I might contact?

APPENDIX C - BOILER DICTIONARY

Success is facilitated by your ability to express yourself effectively. The following terms, abbreviations, and acronyms are frequently used on this campus. Learn them and add to the list as you encounter other words and phrases that may be unique to the university environment.

ACADEMIC ADVISOR: Person in the department who is responsible for providing academic information and advice, helping students to follow their plan of study and select courses, and also provides information and assistance in course registration, revision, etc..

AGIT: Agriculture Information Technology is agriculture's branch of ITaP.

AMBASSADORS: Students who represent their department or college at various recruitment and alumni events. It's a great resume builder and a wonderful way to get involved at Purdue.

BGR: Boiler Gold Rush is the orientation program for freshman held every August.

BIG TEN: 12 universities in the Midwest that make up an athletic conference; the "Big Ten" name stuck despite the addition of 2 extra teams (Purdue, Northwestern, Michigan State, Ohio State, Penn State, Univ. of Illinois, Univ. of Iowa, Univ. of Michigan, Univ. of Minnesota, Indiana, Univ. of Wisconsin, Univ. of Nebraska)

BLACKBOARD: An e-learning course management system that allows teachers to post specific information for each class. Students log in using their Purdue career accounts.

BOILER CONNECT: An online system to schedule appointments with your advisor and other offices around campus.

BOILERMAKER: This Purdue student or athlete nickname originated in 1889 when discouraged coaches hired several husky boilermakers from the Monon Railroad and a few burly policemen to play football. After enrolling in one course, the men started playing and won one game after another. Angry Crawfordsville newspapermen wrote uncomplimentary stories, calling the team "sluggers", "cornfield sailors", and "boilermakers". The last name stuck and has been a nickname ever since.

BOILERMAKER SPECIAL: This unique locomotive (train), cared for by the Reamer Club to promote Purdue spirit, is the official University mascot.

BOILERMAKER X-TRA SPECIAL: A smaller version of the Boilermaker Special.

BREAKFAST CLUB: Student costume party held in the early mornings at campus bars before each home football game and before Grand Prix.

CAPS: Counseling & Psychological Services helps students deal with the stress and pressure of being a student.

CCO: The Center for Career Opportunities a place where student can learn about career options and get help searching for a job or internship.

CHAUNCEY HILL: A shopping center and popular student hang out located just east of campus.

CODO: Change Of Degree Objective, or officially changing from one college/school to another at Purdue. It is used both as a noun ("CODO") and a verb ("to CODO" and "CODO'ing")

CO-REC: Cordova Recreational Sports Center, which offers gymnasium facilities to students and staff. Organized intramural competitions and workout classes are also offered.

CRN: Stands for "Course Registration Number." It's the 5-digit number that represents a single, unique section of a course.

DEAD WEEK: The last week of classes before finals.

DEN POP: A large, cheap pop/soda from The Discount Den, a popular store by the stadium. A Purdue tradition.

EXPONENT: The independent newspaper published by Purdue students and distributed free at many locations.

FERPA: The Family Educational Rights and Privacy Act of 1974 stipulates that your academic information cannot be released or shared with anyone without your consent.

GRAND PRIX: A go-kart race held every spring. "The Greatest Spectacle in College Racing!"

HOLD: A lock on your academic records that prevents you from registering, ordering transcripts, and many other functions.

ISS: International Students & Scholars is located in Schleman room 136 and helps international students with their visas and other paperwork.

ITaP: Information Technology at Purdue is located Stewart Center (STEW), room G-65 or call 48333 from a campus phone.

JOHN PURDUE: Donated money and land to found Purdue University and have it selected as the state's land grant university.

MORTAR BOARD: A calendar published each fall by the Mortar Board Honor Society. It lists important Purdue events, holidays, library hours, call-outs, etc. It's sold at most stores near campus and all proceeds go to the Mortar Board Scholarships.

MYPURDUE: Purdue's student web portal, with access to registration, financial aid, bursar, and student organizations resources.

MYPURDUE PLAN: Online tool for monitoring Undergraduate Plans of Study.

OLD OAKEN BUCKET: A traveling trophy awarded to the winner of the Purdue-Indiana football game; dating back to 1925.

OWL: Online Writing Lab, designed to help students work on writing assignments via the Internet.

PMO: Purdue Musical Organizations. It includes the Glee Club, Purduettes, All-Campus Chorale, and Bell Choir.

PSG: Purdue Student Government, an all-campus student government that represents and provides service for undergraduate students. Graduate students have their own student government, PGSG.

PSUB (pronounced "p-sub"): The Purdue Student Union Board plans student activities in the Purdue Memorial Union and Stewart Center.

PUID: PUID (Purdue Identification) refers to both your identification card and the 10-digit unique identification number printed on it. Use your PUID Card as a residence hall identification and meal card; check out items from the library; purchase convocation and theater tickets; visit the Co-Rec; and ride the City Bus.

PURDUE PETE: Purdue's athletic mascot.

PUSH: The Purdue University Student Health Center is a place for students to go for medical care. **RA:** Research Assistant or Resident Hall Assistant.

RECITATION/PSO: A small group discussion class that meets once or twice weekly in addition to a large lecture. It allows the instructor to work with students to clarify lecture material and re-view homework and assignments. Quizzes are sometimes given in recitations, as well. Also called Practice, Study, Observation (PSO).

RUSH: Rush (or "recruitment") activities are held by sororities, fraternities, and cooperative houses to select new members. Participate in rush if you are interested in joining a Greek or coop house.

TA: Teaching Assistant. A TA is usually a graduate student who instructs a lecture, a recitation, or assists a professor with a class.