

# PLANT PATHOLOGY, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

## Program Description

The Plant Pathology minor is designed for students who wish to learn more about the causes and control of plant diseases. These students may pursue careers in commercial crop production, industrial sales, private consulting, extension, or research. Increasing emphasis on biological control, integrated pest management, and sustainable agricultural practices requires knowledge of plant pathogen biology, host-parasite interactions, and environmental parameters influencing disease development. The Plant Pathology Minor focuses on these areas and gives students the background necessary to develop or utilize environmentally sound disease management strategies. This program is designed to supplement majors in any field of the biological sciences and also can be used to prepare students for graduate studies in Plant Pathology.

## What is Plant Pathology?

Plant Pathology involves the study of all the biotic and abiotic causes of plant diseases, including pathogen biology and evolution; understanding infection processes, mechanisms of disease, and host resistance; and identifying environmental and nutritional factors influencing plant health. Results of this research are applied to developing management strategies to ensure adequate food and fiber production and to better understand and stabilize natural ecosystems to maintain a healthy and sustainable environment.

## You Might Like This Program If...

You are interested in agriculture and international agriculture, food security, growing plants, environmental sustainability, disease management, forestry, environmental microbiology, and beneficial or pathogenic microbes.

## Program Requirements

| Requirement                | Credits |
|----------------------------|---------|
| Requirements for the Minor | 22      |

## Requirements for the Minor

The minor in Plant Pathology requires 22 credits in approved courses in addition to the major requirements of the student's choice.

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/>). In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

| Code  | Title                                    | Credits |
|---|--|---------|
| <b>Prescribed Courses</b>                                 |  |         |
| <i>Prescribed Courses: Require a grade of C or better</i> |  |         |
| BIOL 110  | Biology: Basic Concepts and Biodiversity | 4       |
| PPEM 496  | Independent Studies <sup>1</sup>         | 3       |
| <b>Additional Courses</b>                                 |  |         |

*Additional Courses: Require a grade of C or better*

|  |  |    |
|--|--|----|
| PPEM 300   | Horticultural Crop Diseases <sup>2</sup>                             | 3  |
| or PPEM 405                                      | Microbe-Plant Interactions: Plant Disease and Biological Control     |    |
| Select a minimum of 12 credits of the following: |  | 12 |
| AGECO 121  | Plant Stress: It's Not Easy Being Green                              |    |
| AGECO/ENT 457                                    | Principles of Integrated Pest Management                             |    |
| PPEM 120   | The Fungal Jungle: A Mycological Safari From Truffles to Slime Molds |    |
| PPEM 300   | Horticultural Crop Diseases  |    |
| PPEM 318   | Diseases of Forest and Shade Trees                                   |    |
| PPEM 405   | Microbe-Plant Interactions: Plant Disease and Biological Control     |    |
| PPEM 412   | Turfgrass Disease Management   |    |
| PPEM 416   | Plant Virology: Molecules to Populations                             |    |
| PPEM 417W  | Mechanisms of Bacterial Pathogenesis in Plants                       |    |
| PPEM 425   | Biology of Fungi   |    |
| PPEM 430   | Air Pollution Impacts to Terrestrial Ecosystems                      |    |
| PPEM 454   | Virus Ecology  |    |
| PPEM 496   | Independent Studies <sup>1</sup>                                     |    |
| PPEM 497   | Special Topics   |    |

Course(s) from the departmental list for the Plant Pathology Minor with the approval of the minor adviser

<sup>1</sup> Students must select, in consultation with the Plant Pathology Minor adviser, at least 3 credits of PPEM 496 (Independent Study) working with one or more faculty in the department of Plant Pathology and Environmental Microbiology. An additional three Independent Study credits may be applied to the Minor requirements as Additional Courses.

<sup>2</sup> Students may select one of these two courses for the second list of Additional Courses, but the same course cannot be counted toward both lists.

## Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

## University Park

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## Career Paths

### Careers

Plant Pathology students may pursue careers in commercial crop production, industry, private consulting, cooperative extension, or research. Increasing emphasis on biological control, integrated pest management, and sustainable agricultural practices requires knowledge of plant pathogen biology, host-parasite interactions, and environmental parameters influencing disease severity. The Plant Pathology minor focuses on these areas and gives students the background necessary to develop or utilize environmentally sound disease control strategies. This program can be designed to supplement majors in any field of the biological sciences and used to prepare students for graduate studies in plant pathology.

### Opportunities for Graduate Studies

The Plant Pathology minor provides exceptional training in research. Through independent studies, students in Plant Pathology have the opportunity to work with faculty in the Department of Plant Pathology and Environmental Microbiology in state-of-the-art facilities. Students who pursue the Plant Pathology minor are ready for graduate school in plant pathology, environmental microbiology, and associated disciplines.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES  
(<https://plantpath.psu.edu/>)

## Contact

### University Park

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<https://plantpath.psu.edu/directory/mxj22> (<https://plantpath.psu.edu/directory/mxj22/>)