

Plant Pathology (PPTH)

PPTH 194. Individual Study. 1-5 Credits.

PPTH 196. Field Experience. 1-15 Credits.

PPTH 199. Special Topics. 1-5 Credits.

PPTH 291. Seminar. 1-5 Credits.

PPTH 292. Global Practicum: Study Abroad. 1-15 Credits.

Pre-Arranged study at accredited foreign institutions (study abroad), domestic institutions (National Student Exchange) or on approved study abroad programs. Pre-requisite: Sophomore standing and prior approval by International Student and Study Abroad Services and major department. Graded 'P' or 'F' (Undergraduate), or 'S' or 'U' (Graduate).

PPTH 294. Individual Study. 1-5 Credits.

PPTH 299. Special Topics. 1-5 Credits.

PPTH 324. Introductory Plant Pathology. 3 Credits.

Etiology, symptomatology and control of representative plant diseases and demonstrations. 2 lectures, 1 laboratory. F.

PPTH 379. Global Seminar. 1-6 Credits.

NDSU instructed experience or field study in a foreign country. Conducted in English for residence credit. Pre-requisite: Prior approval by International Student and Study Abroad Services and major department. May be repeated. Standard Grading.

PPTH 391. Seminar. 1-5 Credits.

PPTH 392. Global Practicum: Study Abroad. 1-15 Credits.

Pre-Arranged study at accredited foreign institutions (study abroad), domestic institutions (National Student Exchange) or on approved study abroad programs. Pre-requisite: Sophomore standing and prior approval by International Student and Study Abroad Services and major department. Graded 'P' or 'F' (Undergraduate), or 'S' or 'U' (Graduate).

PPTH 394. Individual Study. 1-5 Credits.

PPTH 399. Special Topics. 1-5 Credits.

PPTH 454. Diseases Of Field and Forage Crops. 3 Credits.

Etiology, symptomatology, control, and importance of field and forage crop diseases. 2 lectures, 1 laboratory. Prereq: PPTH 324. S (even years) {Also offered for graduate credit - see PPTH 654.}.

PPTH 455. Plant Disease Management. 3 Credits.

Diagnosis and control of horticultural crop diseases. 2 lectures, 1 laboratory. Prereq: PPTH 324. S (odd years) {Also offered for graduate credit - see PPTH 655.}.

PPTH 457. Landscape Plant Pathology. 3 Credits.

Tree and turfgrass pathology with emphasis on disease identification and management strategies for a variety of settings. Two lectures and a 2-hour lab. Prereq: PPTH 324. S (odd years). {offered at the graduate level as PPTH 657}.

PPTH 460. Fungal Biology. 3 Credits.

Fungal ecology, morphology, genetics, physiology, taxonomy, and relevance to humans. 2 lectures, 1 laboratory. Prereq: BIOL 150, PPTH 324. F (even years) {Also offered for graduate credit - see PPTH 660.}.

PPTH 491. Seminar. 1-5 Credits.

PPTH 492. Global Practicum: Study Abroad. 1-15 Credits.

Pre-Arranged study at accredited foreign institutions (study abroad), domestic institutions (National Student Exchange) or on approved study abroad programs. Pre-requisite: Sophomore standing and prior approval by International Student and Study Abroad Services and major department. Graded 'P' or 'F' (Undergraduate), or 'S' or 'U' (Graduate).

PPTH 494. Individual Study. 1-5 Credits.

PPTH 496. Field Experience. 1-15 Credits.

PPTH 499. Special Topics. 1-5 Credits.

PPTH 654. Diseases Of Field and Forage Crops. 3 Credits.

Etiology, symptomatology, control, and importance of field and forage crop diseases. 2 lectures, 1 laboratory. S (even years) {Also offered for undergraduate credit - see PPTH 454.}.

PPTH 655. Plant Disease Management. 3 Credits.

Diagnosis and control of horticultural crop diseases. 2 lectures, 1 laboratory. S (odd years) {Also offered for undergraduate credit - see PPTH 455.}.

PPTH 657. Landscape Plant Pathology. 3 Credits.

Tree and turfgrass pathology with emphasis on disease identification and management strategies for a variety of settings. Two lectures and a 2-hour lab. S (odd years). {offered at the undergraduate level as PPTH 457}.

PPTH 660. Fungal Biology. 3 Credits.

Fungal ecology, morphology, genetics, physiology, taxonomy, and relevance to humans. 2 lectures, 1 laboratory. F (even years) {Also offered for undergraduate credit - see PPTH 460.}.

PPTH 690. Graduate Seminar. 1-3 Credits.

PPTH 695. Field Experience. 1-15 Credits.

PPTH 696. Special Topics. 1-5 Credits.

PPTH 751. Physiology Of Plant Disease. 3 Credits.

Infection, penetration, recognition, nutrient transfer, toxins, photosynthesis, and physiological materials. Use of tools, equipment, and supplies used in the industry and application of basic design styles, holiday designs, and displays. 1 lecture, 1 two-hour laboratory. S (odd years).

PPTH 752. Plant Nematology. 3 Credits.

Nematode morphology, classification, biology, molecular identification and quantification; interaction of nematodes with other pathogens, molecular mechanisms of plant-nematode interactions, and nematode disease management. 2 lectures, 1 two-hour laboratory. F (odd years).

PPTH 754. Plant Disease Epidemiology. 3 Credits.

Temporal and spatial dynamics of diseases and causative pathogens in plant populations. 2 lectures, 1 laboratory. F (even years).

PPTH 755. Population Biology of Plant Pathogens. 3 Credits.

Discussion of the biological processes that affect plant pathogens populations and communities in natural and agricultural settings and how these processes affect disease development and their control.

PPTH 756. Fungicides: Development, Modes of Action, and Development of Resistance. 3 Credits.

The course will provide an understanding of fungicides, their mode of action, the development of resistance, and resistance management strategies.

PPTH 757. Advanced Techniques in Plant Pathology. 3 Credits.

Review of traditional and latest tools and techniques available to conduct research in plant pathology. Two lectures.

PPTH 758. Bacterial, Nematode and Viral Diseases of Plants. 4 Credits.

Biology, epidemiology, and management of plant diseases caused by bacteria, nematodes and viruses.

PPTH 759. Host-Parasite Genetics. 3 Credits.

Host-parasite genetics including genetics of plant and pathogens and gene-for-gene relationships. 3 lectures. S (even years).

PPTH 760. Fungal Genetics. 4 Credits.

Biology and genetics of fungi. Emphasis on genes, genomes, and genetic control of growth and development, physiology, and etiology of fungi. 2 lectures, 2 laboratories. F (odd years).

PPTH 767. Effectoromics. 3 Credits.

Introduction and evolution of microbe effector research from changes in immune response models to modern effector identification techniques.

PPTH 790. Graduate Seminar. 1-3 Credits.

PPTH 791. Temporary/Trial Topics. 1-5 Credits.

PPTH 792. Graduate Teaching Experience. 1-6 Credits.

PPTH 793. Individual Study/Tutorial. 1-5 Credits.

PPTH 794. Practicum/Internship. 1-10 Credits.

PPTH 795. Field Experience. 1-15 Credits.

PPTH 796. Special Topics. 1-5 Credits.

PPTH 797. Master's Paper. 1-3 Credits.

PPTH 798. Master's Thesis. 1-10 Credits.

PPTH 898. Continuing Enrollment. 1-9 Credits.

For graduate students who have completed all necessary credits of course work including thesis (798) and dissertation (899) on their approved Plan of Study, but who have not yet completed and submitted their thesis or dissertation. This course does not count towards the credit requirements for the degree and is not financial aid eligible. Department consent required to enroll.

PPTH 899. Doctoral Dissertation. 1-15 Credits.