Fall 2020 Course Descriptions as of 04/05/2020 08:13 PM

Information in Browse Course Catalog is subject to change. Information is term specific. Please refer to the appropriate term when searching for course content. Key to Course Descriptions may be found at: **http://rcs.registrar.arizona.edu/course_descriptions_key**.

Plant Pathology (PLP)

PLP 150C1: Mushrooms, Molds, and Man (3 units)
Description: An overview of how organisms in the Kingdom Fungi (mushrooms, molds, yeasts, rusts, mildews) impact individuals and society. Content will include contemporary and historical contributions of fungi or fungal products as they relate to food, medicine, religion, famine, industry, and basic science, and how these contributions have changed the way we live, the quality of our lives, and cultural development.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Discussion — May Be Offered
Lecture — Required
Course typically offered:
Main Campus: Spring

Enrollment requirement: Enrollment not allowed if you have previously taken INDV 103 "Mushrooms, Molds, and Man" (Topic 18).
General Education: INDV 103

PLP 285L: Principles of Microbiology Laboratory (1 unit)
Description: The course is the laboratory course to accompany MIC 285R.
Grading basis: Regular Grades
Career: Undergraduate
Flat Fee: $40
Course Components: Laboratory — Required
Equivalent to: MCB 285L, PLP 285L, SWES 285L, VSC 285L
Also offered as: ACBS 285L, ENVS 285L, MCB 285L, MIC 285L
Course typically offered:
Main Campus: Spring

Recommendations and additional information: MCB 181R, MCB 181L, ECOL 182R, ECOL 182L, CHEM 103A, CHEM 103B, CHEM 104A, CHEM 104B. Concurrent registration, MIC 285R for MIC and V SC majors. Strongly recommended: MIC 285L, MIC 285R be taken together by all others.
Home department: Veterinary Science & Microbiology

PLP 285R: Principles of Microbiology (4 units)
Description: The course is an introductory microbiology class for majors, emphasizing cellular, biochemical and molecular aspects of metabolism, genetics, cell structure, and host-parasite interactions
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Equivalent to: MCB 285R, PLP 285R, SWES 285R, VSC 285R
Also offered as: ACBS 285R, ENVS 285R, MCB 285R, MIC 285R
Course typically offered:
Main Campus: Spring

Recommendations and additional information: MCB 181R, MCB 181L, ECOL 182R, ECOL 182L, CHEM 103A, CHEM 103B, CHEM 104A, CHEM 104B. Concurrent registration, MIC 285R for MIC and V SC majors. Strongly recommended MIC 285L, MIC 285R be taken together by all others.
Home department: Veterinary Science & Microbiology

PLP 299: Independent Study (1 - 3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

PLP 299H: Honors Independent Study (1 - 3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer

Enrollment requirement: Student must be active in the Honors College.
Honors Course: Honors Course
Honors Course: Honors Course

-SA represents a Student Abroad & Student Exchange offering
-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

PLP 305: Introductory Plant Pathology (3 units)
Description: Detailed study of representative plant diseases, with emphasis on basic concepts of diagnosis, cause, epidemiology, and control.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Equivalent to: MIC 305
Also offered as: MIC 305
Course typically offered:
Main Campus: Fall
Distance Campus: Spring (odd years only)

Recommendations and additional information: MCB 181R.

PLP 320: Microbiomes (3 units)
Description: The world is full of communities of interacting microbes. For example, environmental communities can be manipulated to aid in the cleanup of human pollution (such as oil spills) and communities present in hosts can prevent sickness and aid in important processes like digestion. Furthermore, humans have cultivated and domesticated a variety of microbial communities to produce foods like yogurt, to ferment beer, and to synthesize pharmaceuticals such as insulin. One major goal for research in this area is to learn how to control, influence, and engineer microbiomes to ensure outcomes beneficial for humanity. At the heart of such studies is knowledge concerning ecological principles that determine community structure, but also information about mechanisms that organisms (including humans) use to kill or foster the growth of specific microbes. To address these questions, it will be key to delve into the genetic basis for microbe-microbe interactions and learn the process of designing new microbes. This course will provide a knowledge base to enable critical thinking about the past, present, and future of microbiome research and will foster an understanding of how easy (or difficult) it is to manipulate and control these communities.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Also offered as: MIC 320
Course typically offered:
Main Campus: Fall

Recommendations and additional information: Background classes in genetics and molecular biology (MCB181/182, PLS312, ECOL320, ECOL326) or microbiology (MIC428, ENVS425, ACBS438, MIC452, PLP329, MIC420) are encouraged but not required.

PLP 329A: Microbial Diversity (3 units)
Description: Microbial diversity is a course offered to students in Microbiology, and to other majors with an interest in the remarkable genetic, species-level, phylogenetic, functional, and ecological diversity of prokaryotic and eukaryotic microorganisms.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Equivalent to: ECOL 329A, MIC 329, MIC 329A, PLP 329, VSC 329, VSC 329A
Also offered as: ACBS 329A, ECOL 329A, MIC 329A
Course typically offered:
Main Campus: Fall
Distance Campus: Fall

Recommendations and additional information: MCB 181R.

PLP 335: Microbiome Discovery (3 units)
Description: Microbiome Discovery is an inquiry-based course designed to engage students in an integrated field-laboratory-industry experience in plant-microbiome science. The course will consist of five main components that together provide a robust background in microbiome science and the applications of microbiomes in sustainable agriculture.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Laboratory Required
Lecture Required
Course typically offered:
Main Campus: Fall

Recommendations and additional information: MIC 205A is recommended but not required

PLP 393: Internship (1 - 6 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

Student Engagement Activity: Engagement Activity TBD
Student Engagement Competency: Engagement Competency TBD

PLP 399: Independent Study (1 - 3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

Student Engagement Activity: Engagement Activity TBD
Student Engagement Competency: Engagement Competency TBD

PLP 399H: Honors Independent Study (1 - 3 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

Enrollment requirement: Student must be active in the Honors College.
Honors Course: Honors Course
Honors Course: Honors Course
Student Engagement Activity: Engagement Activity TBD
Student Engagement Competency: Engagement Competency TBD

PLP 427L: General Mycology Laboratory (2 units)
Description: General mycology laboratory, with emphasis on the microfungi.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Laboratory Required
Equivalent to: MIC 427L
Also offered as: MIC 427L
Course typically offered:
Main Campus: Fall
Distance Campus: Fall

Recommendations and additional information: PLP 427R.

PLP 427R: General Mycology (3 units)
Description: An exploration of the diversity of fungi and fungus like organisms covering general biology and roles as pathogens (of humans and plants), saprobes and symbionts. Fungi as models for eukaryotic molecular research and their uses in industry will be covered.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Repeatable: Course can be repeated a maximum of 2 times.
Equivalent to: MIC 427R, VSC 427R
Also offered as: ACBS 427R, MIC 427R
Co-convened with: PLP 527R
Course typically offered:
Main Campus: Fall
Distance Campus: Fall

Recommendations and additional information: MCB 181R, MIC 285R.

PLP 428L: Microbial Genetics Laboratory (2 units)
Description: Laboratory associated with lecture course on Prokaryotic gene structure and function; methods of gene transfer and mapping, DNA structure, replication, transcription, and translation. Hands-on computer analysis of DNA sequences and gene cloning strategies. Principles of regulation of gene expression. Biology of plasmids and bacteriophages.
Grading basis: Regular Grades
Career: Undergraduate
Flat Fee: $70
Course Components: Laboratory Required
Equivalent to: ECOL 428L, MCB 428L, MIC 428L, MICR 428L, PLS 428L, SWES 428L, VSC 428L
Also offered as: ACBS 428L, ECOL 428L, ENVS 428L, MIC 428L, PLS 428L
Co-convened with: PLP 528L
Course typically offered:
Main Campus: Spring

Recommendations and additional information: ECOL 320, PLS 312 and PLP 428R.
Writing Emphasis: Writing Emphasis Course

PLP 428R: Microbial Genetics (3 units)
Description: Prokaryotic gene structure and function; methods of gene transfer and mapping, DNA structure, replication, transcription, and translation. Hands-on computer analysis of DNA sequences and gene cloning strategies. Principles of regulation of gene expression. Biology of plasmids and bacteriophages.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Equivalent to: ECOL 428, ECOL 428R, GENE 428R, MCB 428, MIC 428, MIC 428R, MICR 428, MICR 428R, PLP 428, PLS 428R, SW 428, SWES 428, SWES 428R, VSC 428, VSC 428R
Also offered as: ACBS 428R, ECOL 428R, ENVS 428R, MIC 428R, PLS 428R
Co-convened with: PLP 528R
Course typically offered:
Main Campus: Spring
Distance Campus: Spring

Writing Emphasis: Writing Emphasis Course

PLP 446: Insect Pathogens: Biocontrol Agents & Biological Models (4 units)
Description: Ecology and biology of insect pathogens (viruses, bacteria, protozoa, nematodes). Diagnostics, safety testing of pathogens. Genomics and genetic engineering of entomopathogens. Insect pathogens as biological model organisms. Applications in medical and veterinary research and pharmaceutical bioprospecting.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Discussion May Be Offered
Laboratory May Be Offered
Lecture Required
Repeatable: Course can be repeated a maximum of 2 times.
Equivalent to: INSC 446, MCB 446, MIC 446, PLP 446, VSC 446
Also offered as: ENTO 446, MCB 446, MIC 446
Course typically offered:
Main Campus: Spring

Recommendations and additional information: ENTO 411, ENTO 415L, ENTO 415R or consent of instructor.
Field trip: Field trip.
Home department: Entomology

-SA represents a Student Abroad & Student Exchange offering
-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

PLP 452: Antibiotics - A Biological Perspective (3 units)
Description: Antibiotics - a biological perspective provides an introduction to the major classes of antibiotics, their modes of action, the threat and reality of antibiotic resistant "superbugs", as well as the biosynthesis, microbiological role, discovery, and industrial production of these compounds. The course will concentrate on the microbiological, genetic, and molecular biological aspects of antibiotics and antibiotic resistance, with less emphasis on chemistry. Thus, it complements but does not replace other courses that may detail the chemical synthesis and medicinal chemistry of these compounds, or concentrate on their medical or veterinary application as drugs. The course is designed to increase the awareness and appreciation of the importance of antibiotics and anti-infective research in an age when: cheap and failsafe antibiotic cures are considered a birthright in developed countries while lacking in the rest of the world; antibiotic use and misuse is prevalent in medicine, veterinary practice, and agriculture; antibiotic agents increasingly lose effectiveness due to emerging resistance; and anti-infective research has been severely curtailed by pharmaceutical companies.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Lecture Required
Equivalent to: ARL 452, PLP 452
Also offered as: ARL 452, MIC 452
Co-convened with:
Course typically offered:
Main Campus: Fall

Recommendations and additional information: CHEM 103A, MCB 181R; MIC 205A is recommended.
Home department: Veterinary Science & Microbiology

PLP 491: Preceptorship (1 - 8 units)
Description: Specialized work on an individual basis, consisting of instruction and practice in actual service in a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work and patient study.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

PLP 493: Internship (1 - 6 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

Student Engagement Activity: Engagement Activity TBD
Student Engagement Competency: Engagement Competency TBD

PLP 496B: Research Discussions (1 - 3 units)
Description: The development and exchange of scholarly information, usually in a small group setting. The scope of work shall consist of research by course registrants, with the exchange of the results of such research through discussion, reports, and/or papers.
Grading basis: Regular Grades
Career: Undergraduate
Course Components: Seminar Required
Repeatable: Course can be repeated for a maximum of 9 units.

PLP 499: Independent Study (1 - 5 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work.
Grading basis: Alternative Grading: S, P, F
Career: Undergraduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Spring, Summer, Winter

Student Engagement Activity: Engagement Activity TBD
Student Engagement Competency: Engagement Competency TBD

PLP 512A: Biological Electron Microscopy (5 units)
Description: Provides theoretical background and practical experience in transmission and scanning electron microscopy that are necessary for the efficient and effective application of ultra-structural and cytochemical techniques as research tools.
Grading basis: Regular Grades
Career: Graduate
Course Components: Laboratory — May Be Offered
Lecture — Required
Equivalent to: ANS 512, ANS 512A, BIOC 512, BIOC 512A, CBA 512, CBA 512A, EIS 512A, ENTO 512, ENTO 512A, MBIM 512, MCB 512, PATH 512, PATH 512A, PLP 512, PLP 512A, PSIO 512, PSIO 512A, VSC 512, VSC 512A
Also offered as: ACBS 512A, CMM 512A, EIS 512A, MCB 512A, PATH 512A, PSIO 512A
Recommendations and additional information: One college-level course in each of physics, chemistry, and biology.
Home department: Molecular & Cellular Biology
Interdisciplinary Interest Area: BIOC - Biochemistry

PLP 527R: General Mycology (3 units)
Description: An exploration of the diversity of fungi and fungus like organisms covering general biology and roles as pathogens (of humans and plants), saprobes and symbionts. Fungi as models for eukaryotic molecular research and their uses in industry will be covered. Graduate-level requirements include a term paper 10 pages in length to allow a more in depth exploration of a topic in fungal biology. Also required is a 30 minute oral presentation on a topic of choice for 100 points of grade.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture — Required
Repeatable: Course can be repeated a maximum of 2 times.
Equivalent to: VSC 527R
Also offered as: ACBS 527R
Co-convened with: PLP 427R
Course typically offered:
Main Campus: Fall
Online Campus: Fall
Distance Campus: Fall

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-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

PLP 528L: Microbial Genetics Laboratory (2 units)
Description: Laboratory associated with lecture course on Prokaryotic gene structure and function; methods of gene transfer and mapping, DNA structure, replication, transcription, and translation. Hands-on computer analysis of DNA sequences and gene cloning strategies. Graduate-level requirements include the DNA sequence of an entire operon from any one of a variety of bacteria and additionally analyze one product from the operon using several GCG protein analysis programs. Also extra exam questions.
Grading basis: Regular Grades
Career: Graduate
Flat Fee: $70
Course Components: Laboratory Required
Equivalent to: ECOL 528L, MCB 528L, MIC 528L, MICR 528L, PLS 528L, SWES 528L, VSC 528L
Also offered as: ACBS 528L, ECOL 528L, ENVS 528L, MCB 528L, MIC 528L, PLS 528L
Co-convened with: PLP 428L
Course typically offered:
Main Campus: Spring

PLP 528R: Microbial Genetics (3 units)
Description: Prokaryotic gene structure and function; methods of gene transfer and mapping, DNA structure, replication, transcription, and translation. Hands-on computer analysis of DNA sequences and gene cloning strategies. Principles of regulation of gene expression. Graduate-level requirements include a DNA sequence of an entire operon from any one of a variety of bacteria and additionally analyze one product from the operon using several GCG protein analysis programs plus an extensive exam.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture Required
Equivalent to: ECOL 528R, GENE 528, GENE 528R, MCB 528R, MIC 528R, MICR 528R, PLP 528, PLS 528R, SWES 528R, VSC 528R
Also offered as: ACBS 528R, ECOL 528R, ENVS 528R, MCB 528R, MIC 528R, PLS 528R
Co-convened with: PLP 428R
Course typically offered:
Main Campus: Spring
Distance Campus: Spring

PLP 546: Insect Pathogens: Biocontrol Agents & Biological Models (4 units)
Description: Ecology and biology of insect pathogens (viruses, bacteria, protozoa, nematodes). Diagnostics, safety testing of pathogens. Genomics and genetic engineering of entomopathogens. Insect pathogens as biological model organisms. Applications in medical and veterinary research and pharmaceutical bioprospecting. Graduate-level requirements include students to prepare and give one oral presentation of a specific topic that will be coordinated with the instructor at the beginning of the course. Topics considered in the oral presentations will be included in the final exam.
Grading basis: Regular Grades
Career: Graduate
Flat Fee: $75

Course Components:	Discussion	May Be Offered
	Laboratory	May Be Offered
	Lecture	Required

Repeatable: Course can be repeated a maximum of 2 times.
Equivalent to: ENTO 546, INSC 546, MIC 546, PLP 546, VSC 546
Also offered as: ACBS 546, EIS 546, MIC 546
Course typically offered:
Main Campus: Spring

Recommendations and additional information: EIS 511, EIS 515L, EIS 515R; or consent of instructor.
Home department: Committee on Entomology and Insect Science

PLP 550: Principles of Plant Microbiology (4 units)
Description: [Taught alternate years beginning Fall 2002] . This course deals with the mechanisms that plants and associated microorganisms use to establish detrimental or beneficial relationships from the molecular level to the population level. Classical and contemporary research are used extensively to evaluate contemporary and emerging theories.
Grading basis: Regular Grades
Career: Graduate

Course Components:	Lecture	Required

Course typically offered:
Main Campus: Spring (even years only)
Distance Campus: Spring (even years only)

Recommendations and additional information: PLP 305 or consent of instructor.

-SA represents a Student Abroad & Student Exchange offering
-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

PLP 552: Antibiotics - A Biological Perspective (3 units)
Description: Antibiotics - a biological perspective provides an introduction to the major classes of antibiotics, their modes of action, the threat and reality of antibiotic resistant "superbugs", as well as the biosynthesis, microbiological role, discovery, and industrial production of these compounds. The course will concentrate on the microbiological, genetic, and molecular biological aspects of antibiotics and antibiotic resistance, with less emphasis on chemistry. Thus, it complements but does not replace other courses that may detail the chemical synthesis and medicinal chemistry of these compounds, or concentrate on their medical or veterinary application as drugs. The course is designed to increase the awareness and appreciation of the importance of antibiotics and anti-infective research in an age when: cheap and failsafe antibiotic cures are considered a birthright in developed countries while lacking in the rest of the world; antibiotic use and misuse is prevalent in medicine, veterinary practice, and agriculture; antibiotic agents increasingly lose effectiveness due to emerging resistance; and anti-infective research has been severely curtailed by pharmaceutical companies. Graduate-level requirements include a published peer-reviewed scientific paper pertinent to antibiotic research for reading and for preparing Critical Summaries and a presentation on a selected antibiotic.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture Required
Equivalent to: ARL 552, PLP 552
Also offered as: ARL 552, MIC 552
Co-convened with:
Course typically offered:
Main Campus: Fall

Home department: Veterinary Science & Microbiology

PLP 560: Advanced Plant Biology (4 units)
Description: Advanced, graduate-level treatment of current understanding of development, metabolism, response to environmental signals and stress, interactions with other organisms, and plant origins and crop domestication.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture Required
Also offered as: ECOL 560, MCB 560, PLS 560
Course typically offered:
Main Campus: Fall

Recommendations and additional information: MCB 181R, PLS 360, and BIOC 462A. Basic molecular biology, plant biology and biochemistry are necessary to succeed in this class. Equivalent courses will be acceptable to fulfill these requisites.
Home department: School of Plant Science

PLP 575: Advanced Mycology (3 units)
Description: Biology of fungi, including morphology, physiology, systematics, genetics, ecological significance, and economic importance; emphasis on plant pathogens and environmentally essential fungi.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture Required
Course typically offered:
Main Campus: Spring (odd years only)

Recommendations and additional information: PLP 427R or consent of instructor.

PLP 593: Internship (1 - 6 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

PLP 596A: Department of Plant Sciences Seminar. (1 unit)
Description: Departmental seminar providing a forum for graduate students to present research objectives and progress. Student presentations will be evaluated by course instructors and selected faculty. Students will also have the opportunity to participate in the seminar evaluation process.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Seminar Required
Repeatable: Course can be repeated for a maximum of 12 units.
Equivalent to: PLS 596A
Also offered as: PLS 596A
Co-convened with: PLP 496A
Course typically offered:
Main Campus: Fall, Spring

PLP 596B: Research Discussions (1 - 3 units)
Description: The development and exchange of scholarly information, usually in a small group setting. The scope of work shall consist of research by course registrants, with the exchange of the results of such research through discussion, reports, and/or papers.
Grading basis: Regular Grades
Career: Graduate
Course Components: Seminar Required
Repeatable: Course can be repeated for a maximum of 9 units.
Course typically offered:
Main Campus: Fall, Spring
Distance Campus: Fall, Spring

PLP 599: Independent Study (1 - 5 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Graduate students doing independent work which cannot be classified as actual research will register for credit under course number 599, 699, or 799.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer

PLP 611: Comparative Virology (3 units)
Description: A comprehensive course covering broad-ranging aspects of modern virology with an emphasis on comparisons between representative virus groups, taking into account different host, tissue, cell, and vector tropisms, and modes of transmission. The team of instructors will highlight representative types of viruses across different life forms to encourage and illuminate inter-group comparisons in discussion sessions lead by the graduate students.
Grading basis: Regular Grades
Career: Graduate
Course Components: Lecture Required
Equivalent to: MIC 611, PLS 611, VSC 611
Also offered as: ACBS 611, MIC 611, PLS 611
Recommendations and additional information: PLP 305, BIOC 460, VSC 433.

PLP 616: Arizona Cropping Systems (1 unit)
Description: Students will learn various crop production systems and understand challenges, production practices, technologies, pests and diseases in Arizona agriculture. Students will be able to associate impact of plant and microbial sciences in arid land agriculture. This course consists of 7 field trips scheduled on selected Fridays during fall semester. The last trip will be a Friday/Saturday trip to the Yuma area.
Grading basis: Regular Grades
Career: Graduate
Course Components: Laboratory Required
Also offered as: ENVS 616, PLS 616
Course typically offered:
Main Campus: Fall

Recommendations and additional information: PLP 551.
Field trip: Three "all day" and one overnight. Five discussion sessions.

PLP 693: Internship (1 - 6 units)
Description: Specialized work on an individual basis, consisting of training and practice in actual service in a technical, business, or governmental establishment.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.

PLP 694B: TCH Tech Plant Pathology (1 - 3 units)
Description: The practical application, on an individual basis, of previously studied theory and the collection of data for future theoretical interpretation.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated for a maximum of 9 units.

PLP 695A: Journal Club (1 unit)
Description: Enrolled students take turns selecting and leading the discussion on articles from the primary literature. Enrollment is open to students with interests in any of the three focus areas of the Dept. of Plant Sciences: Plant Biology, Genetics and Genomics; Horticultural and Crop Sciences; and Plant Pathology and Microbiology. Goals of the course include: fostering interaction among students with diverse interests and backgrounds, keeping abreast of current publications of broad interest, and providing a forum where free discussion is encouraged.
Grading basis: Regular Grades
Career: Graduate
Course Components: Colloquium Required
Repeatable: Course can be repeated for a maximum of 4 units.
Equivalent to: MCB 695A, PLS 695A
Also offered as: MCB 695A, PLS 695A
Course typically offered:
Main Campus: Fall, Spring

PLP 695C: Introduction to Research (1 - 3 units)
Description: Short research projects on average to cover the length of a semester conducted in various departmental faculty laboratories. The projects will be designed to introduce students to the range of research being conducted in the department.
Grading basis: Regular Grades
Career: Graduate
Course Components: Colloquium Required
Repeatable: Course can be repeated a maximum of 5 times.
Equivalent to: PLS 695C
Also offered as: PLS 695C
Course typically offered:
Main Campus: Fall, Spring
Distance Campus: Fall, Spring

PLP 695P: Introduction to Research (3 - 5 units)
Description: Short research projects on average to cover the length of a semester conducted in various departmental faculty laboratories. The projects will be designed to introduce students to the range of research being conducted in the department.
Grading basis: Regular Grades
Career: Graduate
Course Components: Colloquium Required
Repeatable: Course can be repeated for a maximum of 15 units.
Also offered as: PLS 695P
Course typically offered:
Main Campus: Fall, Spring

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-CC represents a Correspondence Course offering
May Be Offered Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

PLP 696A: Interdisciplinary Plant Sciences Seminar (1 unit)
Description: The scope of the work will consist of discussion and critical evaluation of current literature with course instructors and visiting seminar speakers. Written evaluations and oral presentations may be required of course registrants. A grade of SPCDE will be given for this course.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Seminar Required
Repeatable: Course can be repeated a maximum of 8 times.
Equivalent to: PLP 696A
Also offered as: PLS 696A
Course typically offered:
Main Campus: Fall, Spring

Home department: School of Plant Science

PLP 699: Independent Study (1 - 5 units)
Description: Qualified students working on an individual basis with professors who have agreed to supervise such work. Graduate students doing independent work which cannot be classified as actual research will register for credit under course number 599, 699, or 799.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

PLP 900: Research (2 - 8 units)
Description: Individual research, not related to thesis or dissertation preparation, by graduate students.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

PLP 909: Master's Report (1 - 8 units)
Description: Individual study or special project or formal report thereof submitted in lieu of thesis for certain master's degrees.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

PLP 910: Thesis (2 - 8 units)
Description: Research for the master's thesis (whether library research, laboratory or field observation or research, artistic creation, or thesis writing). Maximum total credit permitted varies with the major department.
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer

PLP 920: Dissertation (1 - 9 units)
Description: Research for the doctoral dissertation (whether library research, laboratory or field observation or research, artistic creation, or dissertation writing).
Grading basis: Alternative Grading: S, P, F
Career: Graduate
Course Components: Independent Study Required
Repeatable: Course can be repeated a maximum of 99 times.
Course typically offered:
Main Campus: Fall, Winter, Spring, Summer
Distance Campus: Fall, Winter, Spring, Summer