

Appendix A – Descriptions of Courses Relevant to the Plant Pathology Major

All course descriptions and information regarding the last time a course was offered can be found online on the Course Guide (<http://public.my.wisc.edu/>).

Department	#	Title
Accounting and Information Systems	100	Introductory Financial Accounting
	211	Introductory Managerial Accounting
	300	Accounting Principles
	301	Financial Reporting I
	302	Financial Reporting II
	329	Taxation: Concepts for Business and Personal Planning
Agricultural and Applied Economics	215	Introduction to Agricultural and Applied Economics <i>Course Description:</i> Introduction to economic ways of thinking about a wide range of problems and issues. Topics include consumption, production, prices, markets, finance, trade, pollution, growth, farms, taxes, and development.
	320	Farming Systems Management
	322	Commodity Markets
	323	Cooperatives
	419	Agricultural Finance
	421	Economic Decision Analysis
Agronomy	100	Principles and Practices in Crop Production
	300	Cropping Systems <i>Course Description:</i> Agronomic cropping systems of the Midwest: environmental impacts, productivity, and profitability. Cropping system diversification and sustainable agriculture. An agroecological approach, the application of ecological concepts and principles for the improvement of cropping systems is emphasized.
	302	Forage Management and Utilization
	328	Integrated Weed Management
	501	Introduction to Biochemistry <i>Course Description:</i> Chemistry, nutrition, and metabolism of biological systems.
Biology Core Curriculum	301	Evolution, Ecology, and Genetics (<i>course number will change to 381 in Spring 2014</i>)
	302	Evolution, Ecology, and Genetics Laboratory (<i>course number will change to 382 in Spring 2014</i>)
	303	Cellular Biology (<i>course number will change to 383 in Spring 2014</i>)
	304	Cellular Biology Laboratory (<i>course number will change to 384 in Spring 2014</i>)
	323	Organismal Biology (<i>course number will change to 485 in Spring 2014</i>)
	324	Organismal Biology Laboratory (<i>course number will change to 486 in Spring 2014</i>)
Biological Sciences Engineering	216	Irrigation Systems - Design and Use
	216	Irrigation Systems - Design and Use
Botany	130	General Botany <i>Course Description:</i> Introduction to the basic principles and concepts of the biology of plants. an integrative approach stressing evolutionary sequences and the relationship between structure and function at succeeding levels of organization: molecule, cell, organism, population, community. Correlated lectures, laboratories, and discussions.
	260	Introductory Ecology
	300	Plant Anatomy
		<i>Course Description:</i> Plant structure and development of seed plants, primarily of flowering plants. Emphasis is placed on structure in relation to function and on the plant body as a structural and functional entity; lecture and

		lab.
	400	Plant Systematics
		<i>Course Description:</i> Plant systematics; the integration of taxonomy (identification, nomenclature, classification emphasizing flowering plants), evolution (speciation, reproductive biology, adaptation, convergence, biogeography), and phylogenetics (phenetics, cladistics, morphology and molecules). Lab emphasis on representative families and genera of flowering plants in Wisconsin, use of keys and manuals, plant collection. Recommended for botany majors; lecture and lab.
	401	Vascular Flora of Wisconsin
		<i>Course Description:</i> Taxonomic survey of the vascular plants of Wisconsin, with emphasis on the angio-sperms. Lecture, lab and field work.
	460	General Ecology (also listed under FWE)
		<i>Course Description:</i> Ecology of individual organisms, populations, communities, ecosystems, landscapes, and the biosphere. The interaction of organisms with each other and their physical environment. These relationships are studied, often in quantitative terms, in both field and laboratory settings; lecture and lab.
	500	Plant Physiology
		<i>Course Description:</i> An in-depth look at plant growth, development, respiration, photosynthesis, mineral nutrition, and water relations. For junior, senior and graduate students; not for those who have taken Biocore. In the laboratory, experimental approaches will be used to demonstrate principles described in lecture. 3-credit option (lecture only) available with consent of instructor.
Chemistry	103	General Chemistry I
		<i>Course Description:</i> Introduction. Stoichiometry and the mole concept, the behavior of gases, liquids and solids, thermochemistry, electronic structure of atoms and chemical bonding, descriptive chemistry of selected elements and compounds, intermolecular forces. For students taking one year or more of college chemistry; serves as a prereq for Chem 104; lecture, lab and discussion.
	104	General Chemistry II
		<i>Course Description:</i> Principles and application of chemical equilibrium, coordination chemistry, oxidation-reduction and electrochemistry, kinetics, nuclear chemistry, introduction to organic chemistry. Lecture, lab, and discussion.
	109	Advanced General Chemistry
		<i>Course Description:</i> A modern introduction to chemical principles that draws on current research themes. For students with good chemistry and math background preparation who desire a one-semester coverage of general chemistry. Recommended for students intending majors in chemistry or allied fields. Lecture, lab, and discussion.
	341	Elementary Organic Chemistry
		<i>Course Description:</i> Chemistry 341 is a single semester, terminal course covering selected topics in organic chemistry. Chemistry 341 is not equivalent to either Chemistry 343 or 345 and it does not satisfy the prerequisite for enrollment in Chemistry 345.
	342	Elementary Organic Chemistry Laboratory
		<i>Course Description:</i> Chemistry 342 introduces organic laboratory techniques in synthesis, purification and spectral interpretation. The course is designed to accompany Chemistry 341 and topics closely follow Chemistry 341.
	343	Introductory Organic Chemistry
		Chemistry 343 covers fundamental aspects of organic molecular structure, including stereochemistry, and introduces basic themes in organic reactivity. It is the first semester of a two-semester organic chemistry sequence. Chemistry 345 is the second course in the sequence.
	344	Introductory Organic Chemistry Laboratory
		<i>Course Description:</i> Chemistry 344 introduces the basic synthesis, purification, and characterization techniques of organic chemistry, along with critical interpretation of experimental data. The laboratory includes material from both Chemistry 343 and 345.
	345	Intermediate Organic Chemistry
		<i>Course Description:</i> Chemistry 345 is the second course of a two-semester sequence in organic chemistry. It covers diverse themes in organic reactivity, building on a foundation provided in Chemistry 343.
Communication Arts	100	Introduction to Speech Composition
Community and Environmental	140	Introduction to Community and Environmental Sociology
	222	Food, Culture, and Society

Sociology	230	Agriculture and Social Change in Western History
	578	Poverty and Place
	650	Sociology of Agriculture
Computer Sciences	302	Introduction to Programming
Economics	101	Principles of Microeconomics
	102	Principles of Macroeconomics
English	100	Introduction to College Composition
Entomology	201	Insects and Human Culture-a Survey Course in Entomology
	302	Introduction to Entomology
	<i>Course Description:</i> Principles including morphology and classification; a general collection of insects required of each student.	
	342	Insect Ecology
	541	Biological Control of Insects
Forest and Wildlife Ecology	100	Introduction to Forestry
	305	Forest Operations
	314	Wood, Industrial Use, and Society
	318	Principles of Wildlife Ecology
	360	Extinction of Species
	455	The Vegetation of Wisconsin
	550	Forest Ecology
Genetics	160	Heredity
	<i>Course Description:</i> Heredity; genetics for students not specializing in life sciences; principles of heredity; current advances in genetics applied to humans, animals and plants with their impact on life sciences and society. Lectures and discussion.	
	466	General Genetics
	<i>Course Description:</i> Genetics in eukaryotes and prokaryotes. Includes Mendelian genetics, mapping, molecular genetics, genetic engineering, cytogenetics, quantitative genetics, and population genetics. Illustrative material includes viruses, bacteria, plants, fungi, insects, and humans.	
Horticulture	120	Survey of Horticulture
	<i>Course Description:</i> For the beginning student. Scientific basis for horticultural practices; scope of the field of horticulture; introduction to propagation, culture, management, improvement, storage, and marketing of flowers, fruits, ornamentals and vegetables.	
	232	Herbaceous Ornamental Plants I
	233	Herbaceous Ornamental Plants II
	263	Landscape Plants I
	320	Environment of Horticultural Plants
	345	Fruit Crop Production
Interdisciplinary Courses – CALS	155	Issues in Agriculture, Environment, and Life Sciences
	<i>Course Description:</i> Explore important issues in the application of science that cut across all majors in the College of Agricultural and Life Sciences, and that are critical for society in coming decades; help students develop academic skills and explore majors and careers	
	165	Introduction to International Issues in Agricultural & Life Sciences
Life Sciences Communications	100	Introduction to Communication: Inquiry and Exposition
	270	Communication in Life Sciences Industries
Management and Human Resources	300	Organizational Behavior
	305	Human Resource Management
Math	112	Algebra
	113	Trigonometry
	114	Algebra and Trigonometry
	171	Calculus with Algebra and Trigonometry I

	211	Calculus
	217	Calculus with Algebra and Trigonometry II
	221	Calculus and Analytic Geometry 1
	222	Calculus and Analytic Geometry 2
Microbiology	101	General Microbiology
	102	General Microbiology Laboratory
	303	Biology of Microorganisms
		<i>Course Description:</i> Basic biology of microorganisms, including structure, function, physiology, genetics, ecology, diversity, and evolution.
	304	Biology of Microorganisms Laboratory
		<i>Course Description:</i> Introduction to modern laboratory techniques used to study the distribution and properties of microorganisms. This is the companion lab to Microbiology 303. Degree credits cannot be earned in both Microbiology 102 and 304.
Nutritional Sciences	132	Nutrition Today
	332	Human Nutritional Needs
	350	World Hunger and Malnutrition
	510	Biochemical Principles of Human and Animal Nutrition
	540	Community Nutrition Programs and Policy Issues
Physics	103	General Physics
	104	General Physics
	201	General Physics
	202	General Physics
	207	General Physics
	208	General Physics
Plant Pathology	300	Introduction to Plant Pathology
		<i>Course Description:</i> Economic importance, symptoms, causes, and methods of control of representative plant diseases.
	309	Diseases of Trees and Shrubs
		<i>Course Description:</i> Fundamental disease concepts, pathogens and causal agents, diagnosis, and biologically rational principles and practices for management of diseases of trees and shrubs. For degree students and professionals. One extended lecture with discussion and one lab or field trip per week.
	311	Global Food Security
		<i>Course Description:</i> Isn't having enough food a basic human right? Exploration of the drivers of food insecurity: barriers to food production (pests, land availability, climate), barriers to food availability (politics, price, biofuels), and a greater need due to population growth. Examination of solutions to food insecurity.
	323	Soil Biology
		<i>Course Description:</i> Nature, activities and role of organisms inhabiting soil. Effects of soil biota on ecosystem function, response to cultural practices, and impacts on environmental quality, including bioremediation of contaminated soils.
	332	Fungi
		<i>Course Description:</i> Growth, development, variability and dispersal of saprophytic, parasitic, and symbiotic fungi, with a consideration of their ecological and economic significance.
	368	Environmental Law, Toxic Substances, and Conservation
	505	Plant-Microbe Interactions: Molecular and Ecological Aspects
		<i>Course Description:</i> Molecular and ecological aspects of the interactions between plants and microorganisms. This course explores many of the themes, from genetic to integrative, of modern biology, and illustrates how study of plant-microbe interactions contributes to understanding of fundamental plant science.
	517	Plant Disease Resistance
	<i>Course Description:</i> Role of host resistance in plant disease control, and lab techniques used for evaluating host resistance and incorporating resistance factors into new crop varieties.	
558	Biology of Plant Pathogens	
	<i>Course Description:</i> Explores biology of plant pathogenic fungi, oomycetes, nematodes, bacteria, and viruses, with emphasis on identifying: 1) key traits of each pathogen class, and 2) common strategies used by these microbes. Inquiry-driven laboratory will investigate diverse interactions between plants and their pathogens.	

	559	Diseases of Economic Plants	<i>Course Description:</i> Symptoms, epidemiology and control of diseases of crop plants; emphasis on disease diagnosis. Plant disease clinic, field trips, lectures and lab.	
	590	Capstone in Plant Pathology	<i>Course Description:</i> Synthesizing research-based capstone experience for students majoring in Plant Pathology. Students will develop problem-solving skills, be exposed to multidisciplinary approaches, develop teamwork and interpersonal skills, develop information resources, consider societal, economic, ethical, scientific and professional aspects of the field, and prepare and present written and/or oral reports.	
	602	Ecology, Epidemiology and Control of Plant Diseases	<i>Course Description:</i> Environmental factors in the development and spread of diseases, pathogen variability, genetics of disease resistance, and principles of disease control.	
	606	Colloquium in Environmental Toxicology		
	622	Plant-Bacterial Interactions	<i>Course Description:</i> Physiology, genetics, taxonomy, and ecology of bacterial pathogens, epiphytes, and symbionts of plants.	
	640	General Virology-Multiplication of Viruses	<i>Course Description:</i> Bacterial and animal viruses, their structure, multiplication, and genetics	
	655	Biology and Genetics of Filamentous Fungi		
Soil Science	132	Earth's Water: Natural Science and Human Use		
	230	Soil: Ecosystem and Resource		
	301	General Soil Science	<i>Course Description:</i> Physical chemical and biological properties of soils as they affect soil-plant-water relations, soil classification and suitability for agricultural and other uses.	
	322	Physical Principles of Soil and Water Management		
	324	Soils and Environmental Quality		
	325	Pedology		
	326	Plant Nutrition Management		
Statistics	224	Introductory Statistics for Engineers		
	301	Introduction to Statistical Methods	<i>Course Description:</i> Distributions, measures of central tendency, dispersion and shape, the normal distribution; experiments to compare means, standard errors, confidence intervals; effects of departure from assumption; method of least squares, regression, correlation, assumptions and limitations; basic ideas of experimental design.	
	371	Introductory Applied Statistics for the Life Sciences	<i>Course Description:</i> The course will provide students in the life sciences with an introduction to modern statistical practice. Topics include: exploratory data analysis, probability and random variables; one-sample testing and confidence intervals, role of assumptions, sample size determination, two-sample inference; basic ideas in experimental design, analysis of variance, linear regression, goodness-of fit; biological applications.	
	541	Introduction to Biostatistics		
	571	Statistical Methods for Bioscience I		
Zoology	101	Animal Biology	<i>Course Description:</i> General biological principles. Topics include: evolution, ecology, animal behavior, cell structure and function, genetics and molecular genetics and the physiology of a variety of organ systems emphasizing function in humans.	
	102	Animal Biology Laboratory		
	151	Introductory Biology	<i>Course Description:</i> First semester of a two semester course designed for majors in biological sciences. Topics include: cell structure and function, cellular metabolism (enzymes, respiration, photosynthesis), information flow (DNA, RNA, protein), principles of genetics and selected topics in Animal Physiology.	
	152	Introductory Biology	<i>Course Description:</i> Second semester of a two semester course designed for majors in biological sciences. Continuation of 151. Topics include: selected topics in plant physiology, a survey of the five major kingdoms of organisms, speciation and evolutionary theory, and ecology at multiple levels of the biological hierarchy.	