HORT-HORTICULTURE (HORT)

HORT 100G. Introductory Plant Science
4 Credits (3+2P)
Introduction to the physical, biological, and chemical principles underlying plant growth and development in managed ecosystems. In the laboratory portion of the class, students perform experiments demonstrating the principles covered in lecture. The course uses economic plants and agriculturally relevant ecosystems to demonstrate basic principles. Appropriate for non-science majors. Same as AGRO 100G.

HORT 110. Athletic Field and Golf Course Management
1 Credit
Survey of proper management of athletic fields, golf courses and other turfgrass stands. Career opportunities in athletic field and golf course management will be discussed. Course includes field trips to local and regional sports turf facilities.

HORT 200. Special Topics
1-4 Credits
Specific subjects and credits as announced. Maximum of 4 credits per semester and a grand total of 9 credits. May be repeated up to 9 credits. Consent of Instructor required.

HORT 205. Introduction to Horticulture
3 Credits
Principles and practices of horticulture. Basic chemical, physical, and biological principles that govern plant growth in different environments. Economics of plant science as related to the field of horticulture. Online course entirely. Intended for non-majors.

HORT 210. Ornamental Plants I
4 Credits (3+2P)
Covers identification, botanical characteristics, culture, and landscape uses of woody plants. Emphasis on deciduous trees, native shrubs, and evergreens.

HORT 211. Ornamental Plants II
4 Credits (3+2P)
Identification, botanical characteristics, culture, and landscape uses of woody plants. Emphasis on flowering trees, cacti, and members of the pea and rose families.

HORT 240. Floral Quality Evaluation and Design
2 Credits (1+2P)
Critical hands-on evaluation of the quality of cut and potted floral and tropical foliage crops, their specific merits and faults, and fundamentals of floral design.

HORT 241. Floriculture Field Practicum
1 Credit
Participation as team member in the National Intercollegiate Floral Quality Evaluation and Design Competition. Intensive week-long travel for competition, networking with industry, academia, and floriculture tours. May be repeated for a maximum of 3 credits. Prerequisite(s): HORT 240 or consent of instructor.

HORT 250. Plant Propagation
3 Credits (2+2P)
Practical methods of propagating horticultural plants by seed, cuttings, layering, grafting, division and tissue culture. Examination of relevant physiological processes involved with successful plant propagation techniques. Same as AGRO 250.

HORT 300. Special Topics
1-4 Credits
Specific subjects as announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits. May be repeated up to 9 credits. Consent of Instructor required. Restricted to Las Cruces campus only.

HORT 302V. Forestry and Society
3 Credits
Global study of the development and use of forest resources for production of wood, fuel, fiber, and food products. Climatic, edaphic, cultural, and economic influences on forests of the world evaluated. Same as RGSC 302V.

HORT 305. Principles of Genetics
3 Credits
Covers fundamental principles of reproduction, variation, and heredity in plants and animals. Crosslisted with: AGRO 305, ANSC 305, BIOL 305 and GENE 305
Prerequisite(s): BIOL 111G, BIOL 211G and either CHEM 111G or CHEM 115.

HORT 307. Landscape Design
3 Credits (1+4P)
Design elements, the design process, and contemporary planting design used in the design of residential and small commercial landscapes. Basic drafting, drawing, and landscape plan presentation techniques. Prerequisites: HORT 210 or HORT 211 or concurrent enrollment or consent of instructor.

HORT 310. Medicinal Herbs
3 Credits
Introduction to ethnobotany, including plant cultivation, extraction methods, and analysis of active chemicals.

HORT 315. Crop Physiology
3 Credits
Whole plant physiological processes as related to growth, development, yield, quality and post harvest physiology of crop plants within the environment of the crop community. Crosslisted with: AGRO 315
Prerequisite(s): EPWS/BIOL 314 or consent of instructor.

HORT 365. Principles of Crop Production
4 Credits (3+3P)
Basic principles of crop production including environmental and physiological factors limiting production, plant nutrition and soil science, soil-water management, cropping systems and management, pest management, and economic factors influencing crop production. Crosslisted with: AGRO 365
Prerequisite(s): AGRO/HORT 100, CHEM 111G or equivalent and MATH 120 or equivalent.

HORT 377. Introduction to Turfgrass Management
4 Credits (3+3P)
Establishment and maintenance of turfgrass with emphasis on seeding methods, soil and water management, mowing, disease insects and turfgrass varieties. Crosslisted with: AGRO 377

HORT 378. Turfgrass Science
4 Credits (3+3P)
Introduction to the scientific fundamentals for turfgrass management cultural practices, pest management, rootzone construction and ecology. Prerequisite(s): HORT 377 or consent of instructor.
HORT 391. Internship
1-6 Credits
Professional work experience under the joint supervision of the employer and a faculty member. A written report is required. No more than 6 credits toward a degree. Consent of instructor required. Graded: S/U. Crosslisted with: AGRO 391 and SOIL 391

HORT 447. Seminar
1 Credit
Review of current literature. Same as AGRO 447 and SOIL 447.

HORT 449. Special Problems
1-3 Credits
Research problem, experience training, or other special study approved by a faculty adviser. Maximum of 3 credits per semester and a grand total of 6 credits. May be repeated up to 6 credits. Consent of Instructor required.

HORT 450. Special Topics
1-4 Credits
Specific subjects as announced in the Schedule of Classes. Maximum of 4 credits per semester and a grand total of 9 credits. May be repeated up to 9 credits. Consent of Instructor required.

HORT 462. Plant Breeding
3 Credits
Principles and practices involved with the genetic improvement of plants. Same as AGRO 462.
Prerequisite: ANSC/AGRO/BIOL/HORT 305.

HORT 465. Landscape Construction and Maintenance
4 Credits (3+2P)
Application of landscape design and construction principles to build and maintain residential, small commercial and selected public managed landscapes.

HORT 471. Plant Mineral Nutrition
3 Credits
Basic and applied aspects of plant requirements for soil-derived minerals and the processes whereby minerals are acquired, absorbed, translocated, and utilized throughout the plant. Same as AGRO/EPWS 471.
Prerequisite: EPWS/BIOL 314, or concurrent enrollment, or consent of instructor.

HORT 479. Advanced Turfgrass Science
3 Credits
Extensive reviews of turfgrass sciences including ecology, physiology, entomology, pathology, weed science, and soil science.
Prerequisite: HORT 378 or consent of instructor.

HORT 485. Vegetable Crop Management
4 Credits (3+2P)
Physiological, environmental and cultural aspects of vegetable crop production.
Corequisite(s): AGRO 365 or HORT 365, or consent of instructor.

HORT 486. Materials from Biorenewable Resources
3 Credits
Types, sources, composition and properties of biomass. Production, processing, and applications of biomass materials with energy, water, cost, sustainability, and waste management considerations. Crosslisted with: AGRO 485, SOIL 485, E S 485 and CHME 485.
Prerequisite(s): CHEM 211 or CHEM 313 or permission of instructor.

HORT 488. Greenhouse Management
4 Credits (3+3P)
Principles and practices involved in greenhouse structures and construction, site considerations, covering materials, heating and cooling systems, greenhouse crop production techniques, and case studies.
Prerequisite: HORT/AGRO 365 or consent of instructor.

HORT 492. Diagnosing Plant Disorders
3 Credits (2+3P)
Systematic diagnosis of the physiological, pathological, and entomological causes of plant disorders. Same as EPWS 492 and AGRO 492.
Prerequisites: EPWS 303 and EPWS 310.

HORT 500. Special Topics
1-4 Credits
Specific subjects and credits to be announced in the Schedule of Classes. Maximum of 4 credits per semester. No more than 9 credits toward a degree.

HORT 505. Research Orientation
4 Credits (3+2P)
Training in writing research proposals, presentation of research results, and interpretation of research results. Crosslisted with: AGRO 505 and SOIL 505

HORT 506. Plant Genetics
3 Credits
Advanced treatment of the principles of classical genetics and heredity with emphasis on the nature and action of the gene including molecular analysis. CHEM 345 recommended. Same as AGRO 506 and MOLB 506.
Prerequisite: AGRO 305 or consent of instructor.

HORT 514. Soil-Plant Relationships
3 Credits
Physical, chemical, and biological soil environment as it affects plant and crop growth. Same as AGRO/SOIL 514.
Prerequisites: BIOL 314, SOIL 252.

HORT 515. Crop Physiology
3 Credits
Whole plant physiological processes as related to growth, development, yield, quality and post harvest physiology of crop plants within the environment of the crop community. Crosslisted with: AGRO 515
Prerequisite(s): EPWS/BIOL 314 or consent of instructor.

HORT 516. Molecular Analysis of Complex Traits
3 Credits
Provide a comprehensive overview of molecular genetic analysis of complex phenotypes, including case histories/experiments in plants, animals and humans. Emphasize technological developments in DNA marker technologies and their application to molecular quantitative genetics. Explore the efficient application of these technologies in the future to complex genetic systems, breeding, and other areas of life sciences. Same as AGRO 516.
Prerequisite: AGRO 305 or consent of instructor.

HORT 525. Scientific Writing How to be a Productive and Effective Writer
1-3 Credits (1-3)
Students will learn to improve their writing skills so that their manuscript preparation process is more efficient and productive. Students will also gain experience in peer-review Crosslisted with: AGRO 525, AGRO 625, EPWS 525, SOIL 625 and SOIL 525.
HORT 533. Environmental Physiology of Plants  
3 Credits  
Integral responses of plants and crop productivity to naturally occurring and modified environmental factors such as radiation, temperatures, water vapor, carbon dioxide, and air flow. Same as AGRO/BIOL 533.  
Prerequisite: BIOL 314 or consent of instructor.

HORT 590. Graduate Seminar  
1 Credit  
Current research discussions presented by masters level graduate students. Not more than one credit toward the degree. Same as AGRO/SOIL 590. Crosslisted with: AGRO 590 and SOIL 590.

HORT 595. Internship  
1-6 Credits  
Supervised professional on-the-job learning experience. Limited to Master of Horticulture or Plant & Environmental Science candidates. Not more than 6 credits toward the degree.

HORT 596. Masters Proposal  
1 Credit  
Current research proposal written by maters level graduate students. Consent of Instructor required. Crosslisted with: AGRO 596, E S 596, GENE 596 and SOIL 596. Restricted to: Masters HORT, Masters PLEN majors.  
Prerequisite(s): Master level graduate students.

HORT 597. University Teaching Experience  
1-3 Credits (1-3)  
Certain graduate students will be permitted to teach up to one-third of one AGRO/HORT/SOIL/ES course. The student will prepare and deliver lectures and will prepare, administer, and grade at least one examination. The professor in charge of the course will attend and evaluate the student's lectures. Consent of instructor required. Crosslisted with: AGRO 597 and SOIL 597

HORT 598. Special Research Programs  
1-6 Credits  
Individual investigations, either analytical or experimental. Maximum of 6 credits per semester. No more than 9 credits toward a degree.  
Prerequisite: consent of instructor.

HORT 599. Master's Thesis  
15 Credits  
Thesis.

HORT 609. Breeding for Plant Disease Resistance  
3 Credits  
A practically-oriented course of lectures and discussion on concepts and principles of breeding for disease and pest resistance. Labs familiarize students with preparation, quantification, and application of inoculum to hosts. Same as AGRO 609.

HORT 610. Advanced Crop Breeding  
4 Credits (3+3P)  
Applications of breeding principles to crop improvement. Emphasis on breeding methodologies using modern techniques, including biotechnology. Same as AGRO 610.  
Prerequisite: AGRO 462 or consent of instructor.

HORT 620. Instrumentation in Agronomy  
3 Credits  
Use of instruments used in research in all areas of agronomy including gas chromatography, high performance liquid chromatography, neutron soil moisture probe, and other instruments. Same as AGRO/SOIL 620.

HORT 625. Scientific Writing- How to be a Productive and Effective Writer  
1-3 Credits (1-3)  
Students will learn to improve their writing skills so that their manuscript preparation process is more efficient and productive. Students will also gain experience in peer-review. Students in the 625 course will be required to perform additional research than those students in the 525 cross-listing Crosslisted with: AGRO 525, EPWS 525, HORT 525 and SOIL 525.

HORT 670. Biometrical Genetics and Plant Breeding  
3 Credits  
A statistical approach to gene action and population parameters as applied to plant improvement. Same as AGRO 670.  
Prerequisite: AGRO 462 or consent of instructor.

HORT 685. Plant Genetic Engineering  
3 Credits  
Analysis of plant genome structure and potential applications of emerging molecular techniques to the genetic improvement of plants. Same as AGRO/BIOL 685.  
Prerequisites: HORT/AGRO 585 and AGRO/HORT 506 or CHEM 545, or consent of instructor.

HORT 696. Doctors Proposal  
1 Credit  
Current research proposal written by PhD level graduate students. Consent of Instructor required. Crosslisted with: AGRO 696, E S 696 and SOIL 696. Restricted to: Doctors PLEN majors.  
Prerequisite(s): PhD level graduate students.

HORT 697. University Teaching Experience  
1-3 Credits (1-3)  
Certain graduate students will be permitted to teach up to one-third of one AGRO/HORT/SOIL/ES course. The student will prepare and deliver lectures and will prepare, administer, and grade at least one examination. The professor in charge of the course will attend and evaluate the student's lectures. Consent of instructor required. Crosslisted with: AGRO 697 and SOIL 697.