HORTICULTURE (HRT)

Course Descriptions

HRT 101. Introductory Horticulture. 4 Credit Hours.
Introductory Horticulture is an introduction to the biological aspects of plant life in the natural and built environment. Topics include cell structure, anatomy, morphology, physiology, taxonomy, environmental factors which affect plant growth, biodiversity, ecosystems, and sustainability as it relates to horticulture.
Prerequisites: Reading Proficiency

HRT 102. Soils. 3 Credit Hours.
Soils provides an understanding of the critical role that soils play in urban and agricultural settings. Topics include soil biology, the chemical and physical properties of soil, soil water, soil health, organic matter, urban soil issues, and soil formation. Emphasis is placed on soil as it relates to plant growth and nutrition, fertility, soil sampling, soil amendments, and soil testing. An introduction to storm water management, rain gardening, and manufactured soils is discussed.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 103. Plant Propagation. 3 Credit Hours.
Plant Propagation introduces students to the various methods of propagation on woody, herbaceous, and vegetable plants. Topics include reproduction by seed, vegetative propagation including cutting, grafting, layering, propagation of specialized structures, and tissue culture.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 104. Landscape Graphics. 3 Credit Hours.
Landscape Graphics is an introduction to hand drawing landscape graphics. Students will develop hand drawing skills and learn how to apply them to base maps, functional diagrams, and planting layouts. Hand drawing skills will be used to develop a site analysis and a Master Plan.
Prerequisites: Reading Proficiency

HRT 105. Workplace Learning. 2 Credit Hours.
Workplace Learning is an experiential course that provides the student the opportunity to apply theory and skills learned in the classroom, learn new skills, and explore career possibilities while supervised by a professional in the field and a faculty member. Students will observe and participate in the functions of the horticultural business or institution to enhance their preparation for entering the workforce. Minimum 50 hours per credit hour in the workplace throughout the term.
Prerequisites: HRT 102, HRT 206, HRT 207, HRT 214, and HRT 230 with minimum grades of "C", approval of Horticulture Department Program Coordinator, and Reading Proficiency

HRT 106. Digital Applications in Landscape Design. 1 Credit Hour.
Digital Applications in Landscape Design introduces students to multiple digital platforms used in the process of landscape design. Students will use various computer aided design programs and other software options for use in landscape design.
Prerequisites: Reading Proficiency

HRT 134. Micropropagation of Plants. 3 Credit Hours.
Micropropagation of Plants is an introduction to micropropagation, also called tissue culture. Topics presented include plant anatomy, hormones involved in plant growth, micropropagation techniques, and industry uses. Techniques practiced include apical, root, and seed propagation, and callus manipulation influenced by different hormones.
Prerequisites: HRT 103 with a minimum grade of "C" and Reading Proficiency

HRT 135. Introduction to Cannabis. 3 Credit Hours.
Introduction to Cannabis introduces students to Cannabis and hemp plants. The course will focus on the anatomy and physiology of the Cannabis plant, the history of Cannabis, and the various uses for and products of Cannabis and hemp. It will also explore the different cannabinoids and chemical compounds of the Cannabis plant.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 136. Cannabis and Hemp Cultivation. 3 Credit Hours.
Cannabis and Hemp Cultivation covers techniques of growing and cultural requirements for cannabis and hemp. Students will experience the growing process from propagation to harvest of both cannabis and industrial hemp. Discussion of soil culture requirements for each type of plant is included along with experience in the greenhouse with both cannabis and hemp.
Prerequisites: Prior or concurrent enrollment in HRT 135 with a minimum grade of "C" and Reading Proficiency

HRT 137. Laboratory Methods for Cannabis Extraction. 3 Credit Hours.
Laboratory Methods for Cannabis Extraction introduces students to cannabis extraction techniques and methods. Students will gain a broad perspective of product types and trends in the cannabis and hemp industries. Laboratory techniques for analyzing different chemical compounds including cannabinoids, terpenes, and flavonoids will be applied.
Prerequisites: HRT 135 with a minimum grade of "C" and Reading Proficiency

HRT 140. Topics in Horticulture. 3 Credit Hours.
Topics in Horticulture is an introduction to new and emerging topics and trends in horticulture. Advances in technology, methods, and subjects that are relevant to the horticulture industry will be introduced and emphasized to students.
Prerequisites: Reading Proficiency
Recommended Preparation: Computer proficiency and experience in the field of horticulture

HRT 201. Turfgrass Management. 3 Credit Hours.
Turfgrass Management introduces students to general and special-purpose turfgrasses. Turfgrass use, establishment, management, alternatives, and sustainable uses will be emphasized. The course allows students to develop basic skills in turfgrass identification, pest diagnosis, cultural management, and practical application of turf equipment.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 205. Nursery and Garden Center Practices. 3 Credit Hours.
Nursery and Garden Center Practices is an overview of the nursery and garden center industries. Students will engage in discussion of nursery operations including propagation methods, sales, business strategies, garden industry trends, production methods, and distribution challenges. Garden center topics will include merchandising, garden center layout, product trends, marketing (including social media strategies), labor challenges, growing versus purchasing challenges, and seasonal challenges in the garden center industry.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 206. Woody Plants - Trees and Vines. 3 Credit Hours.
Woody Plants - Trees and Vines is a study of deciduous trees and woody vines and their use in the landscape. Identifying plants using botanical characteristics, plant culture, and appropriate landscape applications will be emphasized. Information on native plants, their habitat, and ecological benefits along with information on invasive plants and how they affect our environment will be discussed.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 207. Woody Plants - Shrubs and Evergreens. 3 Credit Hours.
Woody Plants - Shrubs and Evergreens is a study of shrubs and evergreens and their use in the landscape. Identifying plants using botanical characteristics, plant culture, and appropriate landscape applications will be emphasized. Information on native plants, their habitat, and ecological benefits along with information on invasive plants and how they affect our environment will be included.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 214. Landscape Management. 3 Credit Hours.
Landscape Management provides students the skills necessary to manage and maintain various residential, institutional, municipal, and commercial settings. Specific topics will include planting techniques, soil preparation, proper pruning methods, time management, integrated plant health care, and equipment operation. Storm water management and rain garden management will be emphasized. Students will spend significant time in the outdoor garden classroom working with plants in their environments.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 217. Landscape Design I. 3 Credit Hours.
Landscape Design I is a continuation of HRT 104. Emphasis will be on applying the principles of art and design in developing complete and professional landscape plans. Students will apply multiple planting design themes and approaches along with proper plant selection as part of the design process. Further development of site analysis skills and ecological applications to design will be addressed.
Prerequisites: HRT 104, HRT 206, and HRT 207 with minimum grades of "C", and Reading Proficiency

HRT 218. Landscape Design II. 3 Credit Hours.
Landscape Design II is a continuation of Landscape Design I with emphasis on the application of the principles of art and design in developing landscape plans. This class will detail conceptual and planting design and emphasize construction plans. Topography layout, rendering, and special projects will be key attributes to this course.
Prerequisites: HRT 217 with a minimum grade of "C" and Reading Proficiency

HRT 220. Landscape Irrigation. 3 Credit Hours.
Landscape Irrigation provides an overview of the components, management, design, and use of irrigation systems in various landscape situations. Specific applications for turf and garden irrigation will be addressed.
Prerequisites: Reading Proficiency

HRT 227. Integrated Pest Management. 3 Credit Hours.
Integrated Pest Management is a study of the insect and disease pests that affect ornamental plants. Emphasis is on pest identification and treatment through a knowledge of signs, symptoms, and pest life cycles. Preparation for the Missouri Pesticide Applicator License is also included.
Prerequisites: HRT 101 or BIO 124, HRT 206, HRT 207 with minimum grades of "C", and Reading Proficiency

HRT 230. Herbaceous Perennials and Ornamental Grasses. 3 Credit Hours.
Herbaceous Perennials and Ornamental Grasses introduces students to the uses of perennials and ornamental grasses in the landscape and the roles they play in commercial and residential garden design. Plant identification including specific characteristics such as growth habit, foliage, and flowers will be emphasized. Cultural requirements and sustainable methods of plant usage will be discussed with a particular focus on native perennials and grasses and their benefits to local ecosystems.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 235. Annuals and Vegetables. 3 Credit Hours.
Annuals and Vegetables introduces students to the identification of annual landscape plants and their use in private, public, and commercial gardens. Identification, use, and culture of vegetables will also be covered. Students will experience growing annuals and vegetables in an outdoor farm and garden environment.
Prerequisites: Reading Proficiency

HRT 241. Greenhouse Management. 3 Credit Hours.
Greenhouse Management introduces students to various techniques for producing a variety of ornamental crops. Greenhouse structures, greenhouse environmental factors, and their effect on plant growth will also be studied. Wholesale production and retail marketing will be presented. Special attention will be paid to the St. Louis and Midwest markets.
Prerequisites: Concurrent or prior enrollment in HRT 101 or BIO 124 with a minimum grade of "C", and Reading Proficiency

HRT 242. Urban Tree Management. 3 Credit Hours.
Urban Tree Management introduces students to the management of urban forest greenspaces. Social value of urban trees, street and park tree inventories, tree ordinances, and program administration are emphasized. Tree selection, site evaluation, soil characteristics, planting methods, pruning practices, and hazard tree evaluation will be included.
Prerequisites: HRT 206 with a minimum grade of "C" and Reading Proficiency

HRT 250. Native Landscaping Practices. 3 Credit Hours.
Native Landscaping Practices provides students with hands-on learning in the identification, use, installation, and maintenance of native plants in the landscape. Focus will be on principles of native plant horticulture, planning and design, site evaluation and preparation, problems and solutions with native landscaping, invasive plants, development of rain gardens using native plants, and best management practices. Students will spend seven weeks at Shaw Nature Reserve and nine weeks at STLCC-Meramec.
Prerequisites: HRT 101 or BIO 124, HRT 102 with minimum grades of "C", and Reading Proficiency
Recommended Preparation: Students should be prepared to be outside for classes