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 Stanley Beikmann
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Agriculture	Credits
BS: Agriculture	40
BS: Animal Science	40
Pre-Veterinary Medicine	
Management	
Equine Science	
BS: Horticulture	40
Landscape Design	
Landscape Management	
BT: Agribusiness	60
BT: Horticulture	60
Landscape Design	
Landscape Management	
AT: Agriculture	36
Crop Production	
Dairy Herd Management	
AT: Horticulture	35
Landscape Design	
Landscape Management	
Minors in Agriculture, Animal Science or Horticulture	20
Pre-Professional Program in Veterinary Medicine	

Programs

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BT: H

AGRI118, 240, 308, 395 (3), 405; HORT105, 135, 226, 228, 315, 346, 378, plus 17–21 credits in horticulture or a special area of emphasis, and 4–5 major elective credits chosen in consultation with advisor.

CHEM100 or 110

Students may choose an area of emphasis from the following or develop a personalized program in consultation with their advisor to meet specific career goals.

HORT350, 365, 375, 429, 448. The landscape design program emphasizes the development of technical drawing skills, cad application, an understanding of the principles of design, and a knowledge of plants.

HORT208, 211. Select 9 credits from the following: HORT212, 350, 359, 360, 375. The landscape management emphasis features proper horticultural practice, identification of landscape plants, selection of appropriate equipment, and the concept of total maintenance.

AT: A

ANSI114, 305, 340, plus 15–24 credits in a special area of emphasis (see below) and 2–4 major elective credits chosen in consultation with advisor.

Students may choose an area of emphasis from the following or develop a personalized program in consultation with their advisor to meet specific career goals.

AGRI118, 206, 240, 300, 395; HORT105

CHEM100 or 110

AGRI270, 304, 395; ANSI250, 278, 430

CHEM100 or 110

AT: H

AGRI118, 395(3) 405; HORT105, plus 13 credits in a special area of emphasis (see below) and 11 major elective credits chosen in consultation with advisor.

CHEM100 or 110

Students may choose an area of emphasis from the following or develop a personalized program in consultation with their advisor to meet specific career goals.

HORT135, 226, 228, 350

HORT208, 211, 226, 228, 346

M A A a S H 20

HORT208, CHE

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Production Methods and Management Practices of Domesticated Livestock Species /Ma age e f _____
 Production methods and management practices of domesticated livestock species including nutrition, reproduction, housing, health and specialized care of a particular species. Course is repeatable for study of avian, beef cattle, dairy cattle (includes a lab), equine (includes a lab), porcine, and wool and lamb production. *Fall, Spring*

Survey of Proper Handling and Care, Nutritional Needs, and Common Health Problems of Companion Animals S a, A a Heq, a d D ea e
 A survey of proper handling and care, nutritional needs, and common health problems of companion animals such as dogs, cats, and birds. *Fall*

Study of Macroscopic Skeleton, Muscles, Internal Organs, Blood Vessels and Nerves Ca e G A a
 Study of macroscopic skeleton, muscles, internal organs, blood vessels and nerves using preserved, latex-injected specimens. Comparisons made with the live dog through palpation. Weekly: 2 lectures and 2 three-hour labs. Recommended: BIOL166. *Fall*

Ethical Issues that Challenge Animal Researchers, Producers, Caretakers, and Veterinarians I e A a Ag c e, Re ea c a d Med c e
 Study of the ethical issues that challenge animal researchers, producers, caretakers, and veterinarians to treat animals humanely yet effectively in society today. *Spring*

Anatomy and Physiology of the Udder, Milk Secretion, Disease Prevention and Treatment, Milking Management and Milking Systems Lac a P g
 Anatomy and physiology of the udder, milk secretion, disease prevention and treatment, milking management and milking systems. Weekly: 2 lectures and 1 lab. *Spring*

Basic Genetics, Cytogenetics, Immunogenetics, Population Genetics and Quantitative Genetics A a Ge e, c
 A study of basic genetics, cytogenetics, immunogenetics, population genetics and quantitative genetics, biotechnology, gene mapping and the use of molecular tools to research inherited disorders. Included are descriptions of how veterinary genetics can be applied to artificial selection in animal production, information on the control of inherited disorders and the conservation of genetic diversity in both domesticated and wild animal species. *Spring*

Study of Anatomy and Physiology of Farm Animal Reproduction A a Re d c
 Study of anatomy and physiology of farm animal reproduction, which explores the cellular component as well as the management aspects. Weekly: 2 lectures and a 3-hour lab. Recommended: BIOL166. *Spring*

Physiology of Digestive, Reproductive, Lactation, Cardiovascular, Pulmonary, Excretory, Nervous, and Skeleto-muscular Systems P g f Fa A a
 Physiology of digestive, reproductive, lactation, cardiovascular, pulmonary, excretory, nervous, and skeleto-muscular systems in domesticated ruminants and monogastrics. Weekly: 2 lectures and a 3-hour lab. Recommended: BIOL166. *Fall*

The Anatomy and Physiology of the Limbs (Shoulder and Pelvic Girdles, Legs, Feet) as well as the Respiratory Tract E e E e c e A a & P g
 The anatomy and physiology of the limbs (shoulder and pelvic girdles, legs, feet) as well as the respiratory tract, all of which are vital to a horse's usefulness.

Topics Covered in Depth: Causes of Infectious and Non-Infectious Diseases of Horses E e Heq, a d D ea e
 Topics covered in depth are: the causes of infectious (e.g. tetanus, strangles) and non-infectious (e.g. laminitis, colic, injury), diseases of horses, their prevention, diagnosis and treatment.

Horse Behavior and Safety, Conformation and Way-of-Going Analysis, Stall and Pasture Management, Tack Selection and Fitting Ad a ced E e Ma age e
 Covers horse behavior and safety, conformation and way-of-going analysis, stall and pasture management, tack selection and fitting (saddles, bridles, bits, harnesses), grooming, financial management and business planning. Weekly: 2 hours lecture and 3 hours lab.

Introduction to the Requirements of Plant Growth and Development H e Sc e
 Introduces students to the requirements of plant growth and development. Understanding of these processes is gained by studying topics such as plant cells, tissue, and organ structure; photosynthesis, cellular respiration, plant reproduction, including flowering, fruit development, seed set, the role of hormones, and plant nutrition. Weekly: 4 lectures and a 3-hour lab. *Fall*

Technical Drafting for Landscape Design La d ca e D af, g a d De g
 Develops proficiency in technical drafting for landscape design including symbols, title blocks, plant legends and plan organization. Principles of design, site analysis, functional diagraming, circulation, spatial planes, design schematics and plant selection are explored. Laboratory puts the design process to work in drawing plans for residential design. Weekly: 3 lectures and a 3-hour lab. *Fall*

Introduction to the Horticultural and Landscape Field H e H c e
 An introduction to the horticultural and landscape field for majors and homeowners alike, this class offers basic care of the home landscape. Landscaping with ornamental trees and shrubs, perennials and annuals or growing fruits and vegetables for the garden are included. Become skilled at pruning and training plants, diagnosing and treating insect and disease problems, fertilizing techniques, and more. Course prepares you for home ownership and teaches life skills for creating a productive and beautiful home environment.

Processes of Asexual Reproduction P a ga f H c e P a
 Intended to acquaint students with the processes of asexual reproduction, especially as it applies to the horticultural industry. Asexual reproduction investigates methods of clonal reproduction utilizing non-flowering plant parts such as cutting, grafting, layering, and micropropagation (tissue culture). Weekly: 2 lectures and a 3-hour lab. Recommended: HORT105. *Spring*

Assessment of and Exposure to Current Equipment Needed to Run a Landscape Installation and Maintenance Business La d ca e E e
 Assessment of and exposure to current equipment needed to run a landscape installation and maintenance business. Experience in physical operation of equipment, preventative maintenance and minor repair is practiced. Weekly: 1-hour lecture and a 3-hour

3 ()

Wild Plant Identification

Introduction to the identification and recognition of shape, size, color, texture, environmental requirements and landscape value of common deciduous and evergreen trees, shrubs and vines. *Fall*

3 ()

Herbaceous Plant Identification

Identification and recognition of shape, size, color, texture, and environmental requirements of the nonwoody plants providing color and ground cover in the landscape. *Fall*

3 ()

Landscape Construction

Course combines both drawing and hands-on construction of installing softscapes and hardscapes, plus understanding of the vast array of hardscape materials available in the form of pavements, edgings, fencing, retaining walls, decks, pools, shelters, etc. Weekly: 3 hours lecture and 3 hours lab. *Spring*

3 ()

History of Landscape Design

A study of landscape history throughout civilization and its impact upon society and the environment. The origin of landscape architectural styles and their characteristics will be explored. An introspective look at landscape design personalities through the ages and their influence upon the American landscape. *Spring*

3 ()

Abc of Shade Trees

Care of shade and ornamental trees living under environmental stress of urbanization, their legal protection and value. Includes tree anatomy and physiology, soils, nutrition and water relationships, transplanting, disease and insect control, mechanical injury and pruning to develop a healthy tree. Weekly: 2 lectures and a 3-hour lab. *Fall*

3 ()

Urban Landscape Design

Designing landscapes to meet the environmental challenges and conditions of urban spaces. Circulation patterns for conducting business, aesthetic and functional aspects of design for corporate/ institutional, governmental agencies and municipal areas. Weekly: 2 lectures and a 3-hour lab. Recommended:

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