# AGRONOMY

**AGR 5230C Florida Grassland Agroecosystems 4 Credits**
**Grading Scheme:** Letter Grade
Comprehensive overview of planted and native grassland ecosystems in Florida emphasizing their growth, species diversity, management, and use by ruminant animals. Offered spring term.

**AGR 5266C Field Plot Techniques 3 Credits**
**Grading Scheme:** Letter Grade
Techniques and procedures used in design and analysis of field plot, greenhouse, and laboratory research experiments. Application of research methodology, the analysis and interpretation of research results. Offered fall term.
**Prerequisite:** STA 3023.

**AGR 5277C Tropical Crop Production 3 Credits**
**Grading Scheme:** Letter Grade
Ecology and production practices of selected crops grown in the tropics. Offered spring term.
**Prerequisite:** consent of instructor.

**AGR 5307 Molecular Genetics for Crop Improvement 3 Credits**
**Grading Scheme:** Letter Grade
Lectures and laboratory demonstrations for a thorough understanding of concepts and applied aspects of plant molecular and cellular biology. Discussion of current research in plant biotechnology and functional genomics. Offered spring term.
**Prerequisite:** AGR 3303.

**AGR 5321C Genetic Improvement of Plants 3 Credits**
**Grading Scheme:** Letter Grade
Genetic basis for crop improvement including methods for improving crop yield, pest resistance, and adaptability. Emphasis on manipulating genetic variability in self- and cross-pollinate, annual and perennial crop plants. Offered fall term.
**Prerequisite:** AGR 3303.

**AGR 5444 Ecophysiology of Crop Production 3 Credits**
**Grading Scheme:** Letter Grade
Physiological, ecological, and environmental responses that impact growth, development, and yield formation of cultivated crops. Offered spring term.
**Prerequisite:** AGR 3005 or equivalent.

**AGR 5511 Crop Ecology 3 Credits**
**Grading Scheme:** Letter Grade
Relationships of ecological factors and climatic classifications to agroecosystems, and crop modeling of the major crops. Offered fall term.
**Prerequisite:** AGR 4210, BOT 3503, PCB 3043C, or equivalent.

**AGR 6233 Tropical Grassland Agroecosystems 3 Credits**
**Grading Scheme:** Letter Grade
Potential of natural grasslands of tropical and subtropical regions. Development of improved pastures and forages and their use in livestock production. Offered fall term in odd-numbered years.
**Prerequisite:** AGR 4231C and ANS 5446 or consent of instructor.

**AGR 6237C Research Techniques in Forage Evaluation 3 Credits**
**Grading Scheme:** Letter Grade
Experimental techniques for field evaluation of forage plants. Design of grazing trials and procedures for estimating yield and botanical composition in the grazed and ungrazed pasture. Offered summer C term in odd-numbered years.
**Prerequisite:** STA 6166. ;
**Corequisite:** STA 6166.

**AGR 6305 Plant Chromosomes and Genomes 3 Credits**
**Grading Scheme:** Letter Grade
This course is designed to introduce students to plant chromosome structures, inheritance, basic genomic tools to analyze plant genomes. Main topics include DNA organization in chromosomes, cytogenetics, genomic DNA structure and function, DNA sequencing technologies, transcriptome, basic bioinformatic tools, high throughput DNA marker development, and genomic database exploring.

**AGR 6322 Advanced Plant Breeding 3 Credits**
**Grading Scheme:** Letter Grade
Theory and use of biometrical genetic models for analytical evaluation of qualitative and quantitative characteristics, with procedures applicable to various types of plant species. Offered spring term in even-numbered years.
**Prerequisite:** AGR 3303, 4231, AGR 6311 , and STA 6167.

**AGR 6325L Plant Breeding Techniques 1 Credit**
**Grading Scheme:** Letter Grade
Examination of various breeding techniques used by agronomic and horticultural crop breeders in Florida. Field and lab visits to active plant breeding programs, with discussion led by a specific breeder each week. Hands-on experience in breeding programs. Offered spring term in odd-numbered years.
**Prerequisite:** AGR 3303 or equivalent ;
**Corequisite:** AGR 6322.

**AGR 6422C Environmental Crop Nutrition 3 Credits**
**Grading Scheme:** Letter Grade
Design of cost-effective and environmentally sound crop nutrient management strategies. Diagnostic nutrient analysis, nutrient uptake, BMPs, and sustainable agriculture. Offered fall term.
**Prerequisite:** BOT 3503.

**AGR 6442C Physiology of Agronomic Plants 4 Credits**
**Grading Scheme:** Letter Grade
Yield potentials of crops as influenced by photosynthetic efficiencies, respiration, translocation, drought, and canopy architecture. Plant response to environmental factors. Offered spring term.
**Prerequisite:** BOT 3503.

**AGR 6905 Agronomic Problems 1-5 Credits, Max 8 Credits**
**Grading Scheme:** Letter Grade
Special topics for classroom, library, laboratory, or field studies of agronomic plants.

**AGR 6913 Supervised Extension-Agronomy 3 Credits**
**Grading Scheme:** Letter Grade
Learn and develop extension skills on agricultural systems issues through effective communication with growers/land managers, policymakers, and the public. Students will create and deliver (i.e. oral, written, hands-on activity) an extension project to the targeted clientele.

**AGR 6932 Topics in Agronomy 1-3 Credits, Max 8 Credits**
**Grading Scheme:** Letter Grade
Critical review of selected topics in specific agronomic areas.

**AGR 6933 Graduate Agronomy Seminar 1 Credit, Max 3 Credits**
**Grading Scheme:** Letter Grade
Current literature and agronomic developments.

**AGR 6940 Supervised Teaching 1-5 Credits, Max 5 Credits**
**Grading Scheme:** S/U
Supervised Teaching

**AGR 6971 Research for Master's Thesis 1-15 Credits**
**Grading Scheme:** S/U
Research for Master's Thesis

**AGR 7306 Multi-Omic Integration for Applied Prediction Breeding 3 Credits**
**Grading Scheme:** Letter Grade
Intended for students in Plant and Animal Sciences with emphasis on breeding applications. Students will learn the basis for modeling trait performance of genotypes assisted by the integration of multiple data types 'omics' under different approaches (parametric, non-parametric AI). Relevant topics for private industry and research institutions will be covered (AI methods implemented for genomic prediction GP, G×E Interactions, multi-trait prediction, sparse testing designs, etc.)
**Prerequisite:** STA 6166 or equivalent.

**AGR 7979 Advanced Research 1-12 Credits, Max 999 Credits**
**Grading Scheme:** S/U
Research for doctoral students before admission to candidacy. Designed for students with a master's degree in the field of study or for students who have been accepted for a doctoral program. Not appropriate for students who have been admitted to candidacy.

**AGR 7980 Research for Doctoral Dissertation 1-15 Credits, Max 999 Credits**
**Grading Scheme:** S/U
Research for Doctoral Dissertation

**ALS 5155 Global Agroecosystems 3 Credits**
**Grading Scheme:** Letter Grade
Focusing on the principles of agroecology and presentation of topics that integrate ecological with agricultural principles to optimize resource conservation, productivity, societal benefit, and profitability.
**Prerequisite:** SWS 3022 or SWS 5050 & ALS 3153 & AGR 4214C or equivalents.

**ALS 5932 Special Topics 1-4 Credits, Max 6 Credits**
**Grading Scheme:** Letter Grade
Special Topics

**ALS 5934 Graduate Professional Development Seminar 2 Credits**
**Grading Scheme:** S/U
Presentations and group discussion of topics essential to enhance awareness, personal satisfaction, and professional success of graduate students

**ALS 6031 Project Team Research: Building Skills in Agrobiology 3 Credits**
**Grading Scheme:** Letter Grade
Hands-on experience in addressing a real-world problem faced by an agricultural industry partner. Production of a detailed plan, project design, and preliminary data for evaluating and solving the problem. Offered every term.

**HOS 6523 Research and Development in Turfgrass Science 3 Credits**
**Grading Scheme:** Letter Grade
Principles and practices of turfgrass improvement and management, including propagation, nutrition, physiology, soil management, and experimental methods applied to turf research.

**IPM 5305 Principles of Pesticides 3 Credits**
**Grading Scheme:** Letter Grade
Basic knowledge of pesticides and their use. Practical working knowledge of pesticides used in agricultural and horticultural settings. Offered spring term.
**Prerequisite:** Graduate standing or instructor's permission to register.

**ORH 5086 Advanced Golf and Sports Turf Management 2 Credits**
**Grading Scheme:** Letter Grade
Golf course and sports turf management.
**Prerequisite:** for graduate students who have not taken ORH 4223.

**PLS 5625 Upland Invasive Plant Management 3 Credits**
**Grading Scheme:** Letter Grade
This course will provide students with a better understanding of upland invasive plant management. Students will learn about upland plant ecosystems, focusing on the role and impacts of nuisance and exotic plants, and how to manage nuisance and invasive plants.
**Prerequisite:** Botany (BOT 2010C) and Plant Physiology (BOT 3503 or HOS 4304 or AGR 4512).

**PLS 5632C Integrated Weed Management 3 Credits**
**Grading Scheme:** Letter Grade
Overview of weed science principles and practices, emphasizing strategies for southeastern cropping systems. Situations unique to the State of Florida. Offered fall term.

**PLS 5633 Aquatic Plant Management 3 Credits**
**Grading Scheme:** Letter Grade
Provides students with a better understanding of aquatic plant management. Students will learn about aquatic ecosystems, focusing on the role and impacts of nuisance aquatic plants, and how to manage aquatic weeds.
**Prerequisite:** BOT 2010C and (BOT 3503 or HOS 4304 or AGR 4512).

**PLS 6626 Invasive Plant Ecology 3 Credits**
**Grading Scheme:** Letter Grade
Mechanisms and hypotheses to explain non-native plant invasions. Impacts of invasions on communities and ecosystems, including natural and agricultural areas, management approaches, design and analysis of experiments.
**Prerequisite:** PCB 4043C, equivalent general ecology course, or permission of instructor

**PLS 6655 Plant/Herbicide Interaction 3 Credits**
**Grading Scheme:** Letter Grade
Herbicide activity on plants: edaphic and environmental influences, absorption and translocation, response of specific physiological and biochemical processes as related to herbicide mode of action. Offered spring term in odd-numbered years.
**Prerequisite:** PLS 4601 and BOT 3503.