

# AGRONOMY (AGRONOMY)

## AGRONOMY 100 – PRINCIPLES AND PRACTICES IN CROP PRODUCTION

4 credits.

Plant science applied to the growth, production, management, distribution and utilization of field crops.

**Requisites:** None

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

## AGRONOMY/AGROECOL/C&E SOC/ENTOM/ENVIR ST 103 – AGROECOLOGY: AN INTRODUCTION TO THE ECOLOGY OF FOOD AND AGRICULTURE

3 credits.

Agroecology has blossomed across the world in recent decades as not only a science, but also a practice, and a movement. Employ the multiple disciplines and perspectives that Agroecology affords to analyze our agricultural and food systems within a broader context of dynamic social and ecological relationships.

**Requisites:** None

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

## AGRONOMY/ENTOM/NUTR SCI 203 – INTRODUCTION TO GLOBAL HEALTH

3 credits.

Introduces students to global health concepts through multidisciplinary speakers dedicated to improving health through their unique training. It targets students with an interest in public health and those who wish to learn how their field impacts their global issues.

**Requisites:** None

**Course Designation:** Breadth – Social Science

Level – Elementary

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

## AGRONOMY 289 – HONORS INDEPENDENT STUDY

1-2 credits.

Research work under direct guidance of an Agronomy faculty or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor. Intended for students in the CALS Honors Program.

**Requisites:** Consent of instructor

**Course Designation:** Honors – Honors Only Courses (H)

**Repeatable for Credit:** Yes, unlimited number of completions

## AGRONOMY 299 – INDEPENDENT STUDY

1-3 credits.

Research work under direct guidance of a faculty or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor.

**Requisites:** Consent of instructor

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

## AGRONOMY 300 – CROPPING SYSTEMS

3 credits.

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.

**Requisites:** AGRONOMY 100 or graduate/professional standing

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

## AGRONOMY 302 – FORAGE MANAGEMENT AND UTILIZATION

3 credits.

Establishment, management, harvesting and utilization of forage crops for use as hay, pasture and silage. Emphasis on cool season perennial grasses and legumes.

**Requisites:** Junior standing and (DY SCI/AN SCI 101, ZOOLOGY/BIOLOGY 101, ZOOLOGY/BIOLOGY/BOTANY 151, AGRONOMY 100, or BIOCORE 381) or graduate/professional standing

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

## AGRONOMY/HORT/SOIL SCI 326 – PLANT NUTRITION MANAGEMENT

3 credits.

Functions, requirements and uptake of essential plant nutrients; chemical and microbial processes affecting nutrient availability; diagnosis of plant and soil nutrient status; fertilizers and efficient fertilizer use in different tillage systems.

**Requisites:** (CHEM 103, 109, or 115 and SOIL SCI/ENVIR ST/GEOG 230) or SOIL SCI 301, or graduate/professional standing

**Course Designation:** Breadth – Physical Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**AGRONOMY/HORT 338 – PLANT BREEDING AND BIOTECHNOLOGY**

3 credits.

Principles of transferring plant genes by sexual, somatic, and molecular methods and the application of gene transfer in plant breeding and genetic engineering to improve crop plants.

**Requisites:** (BOTANY/BIOLOGY 130, GENETICS 466, 467, or BIOCORE 381) or graduate/professional standing

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**AGRONOMY/BOTANY/HORT 339 – PLANT BIOTECHNOLOGY: PRINCIPLES AND TECHNIQUES I**

4 credits.

Theoretical and practical training in plant biotechnology including molecular biology, protein biochemistry and basic bioinformatic techniques used in fundamental and applied research on plants. Valuable hands-on training to those interested in careers in biotechnology.

**Requisites:** (ZOOLOGY/BIOLOGY/BOTANY 152 or ZOOLOGY/BIOLOGY 102) and (CHEM 104, 109, or 116) or graduate/professional standing

**Course Designation:** Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

**AGRONOMY/BOTANY/HORT 340 – PLANT CELL CULTURE AND GENETIC ENGINEERING**

3 credits.

Presents an overview of the techniques, biology and underlying theory of plant tissue culture, genetic engineering and genome editing. Overviews of research and commercial applications, and issues/challenges in the area of plant biotechnology are also covered.

**Requisites:** (BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 152, ZOOLOGY/BIOLOGY 102, or BIOCORE 381) and (CHEM 104, 109, or 116), or graduate/professional standing

**Course Designation:** Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**Learning Outcomes:** 1. Recall and summarize the general principles, practices and application of plant cell and tissue culture, and genetic engineering and gene editing in science, agriculture and industry.

Audience: Both Grad Undergrad

2. Apply experimental design and analysis of plant biotechnology experiments. Audience: Both Grad Undergrad

3. Illustrate representative plant cell culture and bioengineering techniques. Audience: Both Grad Undergrad

4. Recall biosafety and regulatory requirements for conducting research involving cell culture, microbes and recombinant DNA. Audience: Both Grad Undergrad

5. Understand issues and challenges encountered in the areas of in vitro culture and plant biotechnology Audience: Both Grad Undergrad

6. Demonstrate understanding, application and synthesis of concepts learned in the course through completion of a review paper on approved topics relating to plant biotechnology Audience: Graduate

**AGRONOMY/A A E/NUTR SCI 350 – WORLD HUNGER AND MALNUTRITION**

3 credits.

Hunger and poverty in developing countries and the United States. Topics include: nutrition and health, population, food production and availability, and income distribution and employment.

**Requisites:** None

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**AGRONOMY/ENTOM/HORT/PL PATH/SOIL SCI 354 –  
DIAGNOSING AND MONITORING PEST AND NUTRIENT STATUS OF  
FIELD CROPS**

1 credit.

Provides students with information necessary to diagnosis and monitor corn, soybean, alfalfa and wheat for pests (insects, weeds, diseases) and nutrient deficiency symptoms including perspectives from Agronomy, Entomology, Horticulture, Plant Pathology and Soil Science. Proper soil and pest sampling information will be provided as will proper cropstaging techniques which are essential for pest and nutrient management.

**Requisites:** None

**Repeatable for Credit:** No

**Last Taught:** Spring 2019

**AGRONOMY/HORT 360 – GENETICALLY MODIFIED CROPS:  
SCIENCE, REGULATION & CONTROVERSY**

2 credits.

Explores how and why genetically modified (GM) crops are created and their regulation at the federal and state level. Through case studies, students will learn about the impacts of GM crops and critically evaluate arguments both for and against their use. Readings and discussion introduce students to the complex economic, cultural, and political issues surrounding GM crops.

**Requisites:** ZOOLOGY/BIOLOGY 101, BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, BIOCORE 381, GENETICS 466, or GENETICS 467

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**AGRONOMY/A A E/HORT/PL PATH 367 – INTRODUCTION TO  
ORGANIC AGRICULTURE: PRODUCTION, MARKETS, AND POLICY**

3 credits.

Provides an in-depth understanding of the history of organic agriculture, its production, processing, marketing, and social dimensions, and its impact on environmental, community, and human health.

**Requisites:** ENVIR ST/AGROECOL/AGRONOMY/C&E SOC/ ENTOM 103, AGRONOMY 100, HORT 120, BOTANY/PL PATH 123, SOC/ C&E SOC 222, or graduate/professional standing

**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Elementary

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**AGRONOMY/BOTANY/SOIL SCI 370 – GRASSLAND ECOLOGY**

3 credits.

Understand factors driving global, continental, regional, and local distribution of grasslands. Discuss how management affects provision of grassland ecosystem goods and services. Compare and contrast plant community and ecosystem dynamics in native prairie and intensively managed pastures.

**Requisites:** PL PATH/BOTANY 123, BOTANY/BIOLOGY 130, SOIL SCI/ ENVIR ST 101, SOIL SCI/ATM OCN 132, ZOOLOGY/BIOLOGY/ BOTANY 151, BIOCORE 381, BOTANY 100, or AGRONOMY 100, or graduate/professional standing

**Course Designation:** Level - Intermediate

L&S Credit - Counts as Liberal Arts and Science credit in L&S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**AGRONOMY/AGROECOL/DY SCI 371 – MANAGED GRAZING  
FIELD STUDY**

1-2 credits.

For those interested in developing a comprehensive understanding of the principles, practices, and conservation potential of managed grazing systems, and how these farming systems may contribute to the sustainability and diverse tapestry of Wisconsin's working landscape. Visit managed grazing systems of successful grazing-based farmers (graziers) across southern/central counties in Wisconsin, and/or research sites at UW's Arlington and/or Lancaster Research Stations and/or the Discovery Farms Program. An opportunity to discuss at length with farm managers and researchers the practices in place at each farm and research site. Includes introduction to UWEX pasture forage/nutrient management planning and budgeting software.

**Requisites:** Consent of instructor

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Fall 2017

**AGRONOMY 375 – SPECIAL TOPICS**

1-4 credits.

Special topics on issues relevant to Agronomy.

**Requisites:** None

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024

**AGRONOMY/HORT 376 – TROPICAL HORTICULTURAL SYSTEMS**

2 credits.

Highlights the connections between tropical plants and society. Topics include multidisciplinary reflections on the biology of tropical plants, as well as an overview of different production systems and some of the social and environmental problems associated with the utilization of tropical plants in the context of local and global markets. Provides the opportunity to demonstrate comparative skills with respect to local and international challenges posed by the topics we address in class. Illustrates connections between horticulture and conservation, food security, nutrition, and global health.

**Requisites:** Junior standing

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

**Repeatable for Credit:** No

**Last Taught:** Fall 2023

**AGRONOMY 377 – GLOBAL FOOD PRODUCTION AND HEALTH**

3 credits.

Crops, food, and cropping systems from different parts of the world and their impact on global sustainability and health. Introduction to crop biology, environmental requirements, and agronomic production practices of major food crops. Environmental, socioeconomic, and health impacts of farming systems and how to assess their sustainability. For those with broad interests in global issues, agroecology, food, environment, health, and agriculture.

**Requisites:** BOTANY/BIOLOGY/ZOOLOGY 151, BIOLOGY/ZOOLOGY 101, BIOLOGY/BOTANY 130, BIOCORE 381, HORT 120, AGRONOMY 100, ENVIR ST/AGROECOL/AGRONOMY/C&E SOC/ENTOM 103, or graduate/professional standing

**Course Designation:** Breadth – Biological Sci. Counts toward the Natural Sci req

Level – Intermediate

L&S Credit – Counts as Liberal Arts and Science credit in L&S

Grad 50% – Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No

**Last Taught:** Spring 2024

**Learning Outcomes:** 1. describe, analyze, and understand cropping systems of different parts of the world Audience: Both Grad Undergrad

2. describe the social, economic, and environmental dimensions of cropping systems and identify potential trade-offs and interrelationships among these dimensions at a level appropriate to the course Audience: Both Grad Undergrad

3. analyze sustainability issues and/or practices using a systems-based approach within the Agroecology framework. Audience: Both Grad Undergrad

4. consider thoughtfully engaging in international sustainable agriculture and health issues. Audience: Both Grad Undergrad

5. communicate effectively ideas in written reports and oral presentations. Audience: Both Grad Undergrad

6. use sustainability principles for developing personal goals and professional values Audience: Both Grad Undergrad

7. explain the social, economic, and/or environmental dimensions of the sustainability challenges of global food production systems and health Audience: Graduate

**AGRONOMY 399 – COORDINATIVE INTERNSHIP/COOPERATIVE EDUCATION**

1-8 credits.

An internship under guidance of a faculty or instructional academic staff member in Agronomy and internship site supervisor. Students are responsible for arranging the work and credits with the faculty or instructional academic staff member and the internship site supervisor.

**Requisites:** Consent of instructor**Course Designation:** Level - Advanced

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Workplace - Workplace Experience Course

**Repeatable for Credit:** Yes, unlimited number of completions**Last Taught:** Spring 2024**AGRONOMY 400 – STUDY ABROAD IN AGRONOMY**

1-6 credits.

Provides an area equivalency for courses taken on Madison Study Abroad Programs that do not equate to existing UW courses. Current enrollment in a UW-Madison study abroad program

**Requisites:** None**Repeatable for Credit:** Yes, unlimited number of completions**AGRONOMY/DY SCI 471 – FOOD PRODUCTION SYSTEMS AND SUSTAINABILITY**

3 credits.

Delves into aspects of natural sciences (biology and agricultural sciences) and social sciences underpinning the assessment of food production systems as related to a variety of outcomes including but not restricted to human and environmental health, air and water quality, greenhouse gases emission, land use, economic opportunity, social justice, as well as mitigation and adaptation to climate change, locally, regionally, domestically, across continents, and globally.

**Requisites:** (Graduate/professional standing) or junior standing and satisfied Quantitative Reasoning (QR) B requirement**Course Designation:** Breadth - Either Biological Science or Social Science

Level - Advanced

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Spring 2024**AGRONOMY 500 – SENIOR CAPSTONE EXPERIENCE**

2 credits.

A stepping stone between the classroom and society. Emphasizes discussion and activities for enhancing integration of diverse bodies of knowledge, critical thinking, and effective written and oral communication.

**Requisites:** Senior standing only**Repeatable for Credit:** No**Last Taught:** Spring 2024**AGRONOMY/HORT 501 – PRINCIPLES OF PLANT BREEDING**

3 credits.

Principles involved in breeding and maintaining economic crops; factors affecting the choice of breeding methods; alternative approaches through hybridization and selection.

**Requisites:** (GENETICS 466 or 467) and (BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, or BIOCORE 381) or graduate/professional standing**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Fall 2022**AGRONOMY/HORT 502 – TECHNIQUES OF PLANT BREEDING**

1 credit.

Lab and field techniques used in breeding and maintaining economic crops.

**Requisites:** (GENETICS 466 or 467) and (BOTANY/BIOLOGY 130, ZOOLOGY/BIOLOGY/BOTANY 151, or BIOCORE 381) or graduate/professional standing**Course Designation:** Breadth - Biological Sci. Counts toward the Natural Sci req

Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Spring 2019**AGRONOMY/ATM OCN/SOIL SCI 532 – ENVIRONMENTAL BIOPHYSICS**

3 credits.

Plant-environment interactions with particular reference to energy exchanges and water relations. Models are used to provide a quantitative synthesis of information from plant physiology, soil physics, and micrometeorology with some consideration of plant-pest interactions.

**Requisites:** BIOLOGY/BOTANY 130 and (MATH 211, 217, or 221) and (PHYSICS 103, 201, 207, or 247), or graduate/professional standing**Course Designation:** Breadth - Physical Sci. Counts toward the Natural Sci req

Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Fall 2022

**AGRONOMY/C&E SOC/MED HIST/PHILOS 565 – THE ETHICS OF MODERN BIOTECHNOLOGY**

3 credits.

An in-depth study of a selection of ethical issues arising from the application of modern biotechnology to microorganisms, plants, non-human animals, and human beings. We will aim at a discussion that is informed by empirical research and by work done in ethical theory, political philosophy, and other relevant disciplines, and whose character is rigorous, clear, nuanced, and unbiased.

**Requisites:** Junior standing**Course Designation:** Breadth - Humanities

Level - Intermediate

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** No**Last Taught:** Fall 2021**AGRONOMY/AN SCI/GENETICS/HORT 615 – GENETIC MAPPING**

3 credits.

Computing-intensive course to prepare students for genetic mapping research; linkage analysis and QTL mapping in designed crosses; linkage disequilibrium and association analysis (GWAS). Recommended preparation is undergraduate courses in genetics and statistics and prior experience writing R scripts (such as module 1 of STAT 327).

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2023**AGRONOMY/ENTOM/F&W ECOL/M&ENVTOX 632 – ECOTOXICOLOGY: THE CHEMICAL PLAYERS**

1 credit.

Introduction to natural and man-made toxins/toxicants, their distribution, transport, and fate in the environment.

**Requisites:** (CHEM 341 or 343) and ((BOTANY/BIOLOGY 130 and ZOOLOGY/BIOLOGY 102) or ZOOLOGY/BIOLOGY/BOTANY 152 or BIOCORE 383); or graduate/professional standing**Repeatable for Credit:** No**Last Taught:** Fall 2019**AGRONOMY/ENTOM/F&W ECOL/M&ENVTOX 633 – ECOTOXICOLOGY: IMPACTS ON INDIVIDUALS**

1 credit.

Addresses absorption, biotransformation, elimination of toxins in a wide variety of taxa (plants, invertebrates, vertebrates).

**Requisites:** M&ENVTOX/AGRONOMY/ENTOM/F&W ECOL 632**Repeatable for Credit:** No**Last Taught:** Fall 2019**AGRONOMY/ENTOM/F&W ECOL/M&ENVTOX 634 – ECOTOXICOLOGY: IMPACTS ON POPULATIONS, COMMUNITIES AND ECOSYSTEMS**

1 credit.

Focuses on the impact of toxicants on populations, communities, ecosystems, and includes risk evaluation. Includes lectures, current research presentations, and discussions.

**Requisites:** M&ENVTOX/AGRONOMY/ENTOM/F&W ECOL 633 or declared in Molecular and Environmental Toxicology, PhD program**Repeatable for Credit:** No**Last Taught:** Fall 2019**AGRONOMY 681 – SENIOR HONORS THESIS**

2-4 credits.

Individual study for majors completing theses for Agronomy Honors degrees.

**Requisites:** Consent of instructor**Course Designation:** Honors - Honors Only Courses (H)**Repeatable for Credit:** No**Last Taught:** Fall 2018**AGRONOMY 682 – SENIOR HONORS THESIS**

2-4 credits.

Individual study for majors completing theses for Honors degrees as arranged with a faculty member. Requires consent of supervising instructor. Continuation of AGRONOMY 681. Enrolled in CALS Honors Program.

**Requisites:** Consent of instructor**Course Designation:** Honors - Honors Only Courses (H)**Repeatable for Credit:** No**Last Taught:** Spring 2009**AGRONOMY 699 – SPECIAL PROBLEMS**

1-4 credits.

Independent research guided by an Agronomy faculty or instructional academic staff member. Students are responsible for arranging the work and credits with the supervising instructor.

**Requisites:** Consent of instructor**Course Designation:** Level - Advanced

L&amp;S Credit - Counts as Liberal Arts and Science credit in L&amp;S

**Repeatable for Credit:** Yes, unlimited number of completions**Last Taught:** Spring 2024**AGRONOMY/AGROECOL/ENVIR ST 724 – AGROECOSYSTEMS AND GLOBAL CHANGE**

3 credits.

Impacts of global change drivers (climate change, atmospheric chemistry, bioenergy, urbanization, policy) on agroecosystems and their associated goods and services; environmental impacts of agricultural land use and feedbacks to climate; modeling approaches; critical review of current scientific literature.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Fall 2023



**AGRONOMY 771 – EXPERIMENTAL DESIGNS**

1 credit.

Review of methods for controlling error in research experiments; review and in-depth development of factorial treatment designs; theory, analysis, and examples of advanced experimental designs for plant and animal research. Knowledge of statistics such as STAT/F&W ECOL/HORT 571 is strongly encouraged.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2024**AGRONOMY 772 – APPLICATIONS IN ANOVA**

1 credit.

Development of models, programs, inferences, and interpretations of analysis of variance in biological research; mixed vs. random effects models and their development; choosing the correct inference range; variance and covariance analyses; repeated measures; dealing with missing data; SAS programming. Knowledge of statistics such as STAT/F&W ECOL/HORT 571 is strongly encouraged.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2024**AGRONOMY 799 – PRACTICUM IN AGRONOMY TEACHING**

1-3 credits.

Instructional orientation to teaching at the higher education level in the agricultural and life sciences, direct teaching experience under faculty supervision, experience in testing and evaluation of students, and the analysis of teaching performance.

**Requisites:** Consent of instructor**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2024**AGRONOMY/HORT 811 – BIOMETRICAL PROCEDURES IN PLANT BREEDING**

3 credits.

Use of statistical methods to facilitate improvements in quantitative traits of cultivated plants.

**Requisites:** Graduate/professional standing and STAT/F&W ECOL/HORT 572**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Fall 2023**AGRONOMY/HORT 812 – SELECTION THEORY FOR QUANTITATIVE TRAITS IN PLANTS**

2 credits.

Discuss advanced topics in selection theory and the utilization of molecular markers in selection.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Spring 2024**AGRONOMY 875 – SPECIAL TOPICS**

1-4 credits.

Special topics on issues relevant to Agronomy.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** Yes, unlimited number of completions**Last Taught:** Spring 2023**AGRONOMY 920 – SEMINAR**

1 credit.

Weekly seminar topics in agronomy and horticulture.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** Yes, unlimited number of completions**Last Taught:** Spring 2024**AGRONOMY/ATM OCN/BOTANY/ENTOM/ENVIR ST/F&W ECOL/ GEOG/ZOOLOGY 953 – INTRODUCTION TO ECOLOGY RESEARCH AT UW-MADISON**

1-2 credits.

Introduces new graduate students to the diversity of ecologists across the UW-Madison campus. Includes discussions of key topics in professional development, research presentations by faculty members, and discussions of assigned papers with senior graduate students.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** No**Last Taught:** Fall 2023**AGRONOMY/GENETICS/HORT 957 – SEMINAR-PLANT BREEDING**

1 credit.

Graduate seminar in Plant Breeding Plant Genetics (PBPG) that requires students to give oral scientific presentations on topics chosen by the instructors and/or the student's thesis research. This seminar is coordinated by PBPG faculty on a rotating basis.

**Requisites:** Graduate/professional standing**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement**Repeatable for Credit:** Yes, unlimited number of completions**Last Taught:** Spring 2024

**AGRONOMY 990 – RESEARCH**

1-9 credits.

Independent writing and research to complete thesis or dissertation requirements.

**Requisites:** Consent of instructor

**Course Designation:** Grad 50% - Counts toward 50% graduate coursework requirement

**Repeatable for Credit:** Yes, unlimited number of completions

**Last Taught:** Spring 2024