

COURSE INFORMATION (GRADUATE)

AGRICULTURE AND LIFE SCIENCES COURSES

AL-439G COMMUNITY NUTRITION

SPRING ONLY/ODD YEARS

3 credit hours

This course applies knowledge gained from nutrition across the lifespan to nutrition education. Concepts in nutrition education, community programming, and public health are introduced. It is designed for the student who desires to promote health and nutrition with community groups using community nutrition concepts and strategies. Students taking this course for graduate credit will have additional requirements. Prerequisites: AL330 or consent of instructor. ED300 recommended, not required.

AL-443G TECHNOLOGIES FOR SUSTAINABLE TROPICAL AGRICULTURE

SPRING ONLY/ODD YEARS

3 credit hours

This course provides students with knowledge of Agricultural sustainability through the practice of technologies that efficiently utilize resources that aim to improve and sustain soil and water quality and quantity. Students will gain knowledge of the technologies for improving sustainability on agriculture operations, conservation practices that mitigate degradation of soil and water utility in agricultural operation through sustainable management. Students will learn management strategies and technologies that aim to obtain optimum agricultural production, reduce negative environmental impacts, and sustain natural resources. The course meets for three hours of lecture and three hours of laboratory weekly. AL443L/G is the laboratory portion of AL443/G and MUST be taken concurrently. Corequisite: AL443L/G. Prerequisites: MA161A, AL211, AL281 or consent of instructor.

AL-443L/G TECHNOLOGIES FOR SUSTAINABLE TROPICAL AGRICULTURE LAB

SPRING ONLY/ODD YEARS

1 credit hour

This course provides students with knowledge of agricultural sustainability through the practice of technologies that efficiently utilize resources that aim to improve and sustain soil and water quality and quantity. Students will gain knowledge of the technologies for improving sustainability on agriculture operations, conservation practices that mitigate degradation of soil and water quality in agricultural operations through sustainable management. Students will learn management strategies and technologies that aim to obtain optimum agricultural production, reduce negative environmental impacts, and sustain natural resources. Laboratories will be conducted three hours weekly, and will consist of field activities, field trips, and guest lectures. AL443L/G is the laboratory portion of AL443/G and MUST be taken concurrently. Corequisite: AL443/G. Prerequisites: MA161a, AL211, AL281, or consent of instructor.

AL-445G FOOD CHEMISTRY

SPRING ONLY/EVEN YEARS

3 credit hours

This course focuses on the chemical and functional properties of food constituents. Students learn the effects of processing and storage on the stability of chemical components, nutrition values, and quality of foods. Prerequisite: BI157/157L and BI158/158L or CH102/102L and CH103/103L. Corequisite: AL445G/L.

AL-445G/L FOOD CHEMISTRY LABORATORY**SPRING ONLY/EVEN YEARS**

1 credit hour

AL445L is the laboratory portion of AL445 and MUST be taken concurrently. The course consists of lab activities of using various analytical methods to analyze food constituents and determine functional properties and stability of food components. Prerequisite: BI157/157L and BI158/158L or CH102/102L and CH103/103L. Corequisite AL445G.

**AL-451G AGRICULTURAL BUSINESS
MANAGEMENT****SPRING ONLY/ODD YEARS**

3 credit hours

This course examines the role of the manager in the organization and operation of the farm or agri-business. Will cover developing conservation plans, farm business plans, and enterprise budget, as well as other business planning and financial management tools. Prerequisites: MA115 or higher and AL351 or BA110. STUDENTS ARE NOT PERMITTED TO ENROLL IN 300- OR 400- LEVEL COURSES UNTIL THEY HAVE COMPLETED EN111 WITH A GRADE OF "C" OR BETTER AND MA085 LEVEL II OR MA084B OR ANY HIGHER-LEVEL MATH COURSE.

AL-455G NUTRITIONAL ASSESSMENT**SPRING ONLY/ODD YEARS**

3 credit hours

An in-depth survey and hands-on experience of methods used in the assessment of food and nutrient intakes to include nutritional status of communities, groups, and individuals in both health and disease. Prerequisites: AL330.

AL-460G ADVANCED HUMAN NUTRITION**FALL ONLY/EVEN YEARS**

4 credit hours

This course covers the metabolism and macro- and micronutrients, including structure, digestion, absorption, transport, and cellular functions in human nutrition; energy metabolism and balance; and physiologic basis underlying dietary recommendations for human health. Prerequisites: CH310a; BI157, BI157L and BI158, BI158L, or BI124-124L and BI125-125L with grade of C or better; and AL445, or instructor consent.

AL-481G ENVIRONMENTAL SOIL SCIENCE**SPRING ONLY/ODD YEARS**

3 credit hours

This course uses the principles of soil science with practical demonstrations to study the relationships among contemporary agriculture, natural resources and the environment. It gives an overview of management techniques for erosion control and soil and water conservation with focus on rill and interrill erosion. This course also discusses non-point source pollution and control practices involving disposal of organic wastes on agricultural and forestlands. This course will also equip students with skills useful for environmental assessment and soil contaminants analysis. Techniques used for bioremediation of contaminated soils and how soil can be managed to filter out contaminants will be introduced. The course has three hours of lecture and three hours of laboratory per week. Prerequisites: AG380, MA161a and two Chemistry Courses (CH102, CH103) or BI100

**AL-481L/G ENVIRONMENTAL SOIL SCIENCE
LABORATORY****SPRING ONLY/ODD YEARS**

1 credit hour

This is the laboratory section of AL481. Concurrent enrollment in AL481 is required. This course meets for

three hours of laboratory weekly. Prerequisites: AL/NS380 and MA161a or higher.

AL-505 NUTRITIONAL EPIDEMIOLOGY

SPRING ONLY/ODD YEARS

3 credit hours

This is a 3-credit course that explores the complex relationships between diet and the major diseases of Western civilization, such as cancer and atherosclerosis. Topics that will be covered include: research strategies in nutritional epidemiology; methods of dietary assessment (using data on food intake, biochemical indicators of diet, and measures of body size and composition); reproducibility and validity of dietary assessment methods; nutrition surveillance; and diet-disease associations. Prerequisites: BI/EV507.

AL-536 ADVANCES IN SUSTAINABLE AQUACULTURE

FALL ONLY/ODD YEARS

3 credit hours

This course is intended to cover the recent advance in sustainable aquaculture research, development and application, including culture system, aquaculture nutrition, reproductive biology, genetic selective breeding, health management, production techniques, aquatic environmental management, seafood processing technology, off commercially important aquaculture species. It is also designed to provide in-depth knowledge of the molecular techniques currently used in aquaculture research, with emphasis on some applications in developing a sustainable aquaculture in the tropical regions. Prerequisite: AL136 or consent of instructor.

AL-539 PUBLIC HEALTH NUTRITION

FALL ONLY/ODD YEARS

3 credit hours

This course covers farm animal products and provides a general overview of the livestock and poultry industry, relative to biological concepts such as genetics, nutrition, reproduction and disease prevention. This includes biotechnology along with environmental challenges. Prerequisites: AL439/G and AL430.

AL-542 ADVANCED FOOD SAFETY

FALL ONLY/EVEN YEARS

3 credit hours

This course covers biological, chemical, and physical agents of foodborne diseases and provides a farm-to-fork perspective overview of food safety, including the fundamental principles, laboratory and analytical methods, risk assessment and hazard analysis, safe operations and technology, and food safety topics, issues, and regulations. Prerequisites: BI157, BI-157L, BI158, BI158L, BI124, BI124L, BI125, BI125L, BI110, BI110L, BI225, BI225L and AL342.

AL-563 MGMT & RECYCLING OF ORGANIC WASTES

FALL ONLY/ODD YEARS

3 credit hours

This course focuses on various management practices and technologies dealing with handling, storage, and conversion of animal waste and plant by-products to useful energy, animal feed, and fertilizer. Recycling and processing methods such as drying, rendering, composting, fermentation, extruding, and bio-gas production are also covered. Prerequisites: consent of instructor. This course focuses on various management practices and technologies dealing with handling, storage, and conversion of animal waste and plant by-products to useful energy, animal feed, and fertilizer. Recycling and processing methods such as drying, rendering, composting, fermentation, extruding, and bio-gas production are also covered. Prerequisites: consent of instructor.



AL-566 AGROECOLOGY FOR ISLAND SUSTAINABILITY

SPRING ONLY/EVEN YEARS

3 credit hours

Agroecology is the science of applying ecological concepts and principles to the design and management of sustainable food/agricultural production systems. The lecture topics include comparing structural and functional differences between natural ecosystems and agroecosystems with an emphasis on the tropical islands. The students study the resource-conservation and diversification of plant materials for agricultural sustainability. This course is offered to graduate students who have interested in studying plant, soil, and natural resource science, environmental science, agricultural and food bio-security, socio- and human ecology and general biological sciences. This course includes three hours of lecture weekly. Prerequisite: BI100 or AL101 or AL102, or consent of instructor.

AL-570 SUSTAINABLE ANIMAL PRODUCTION SYSTEMS

SPRING ONLY/ALL YEARS

3 credit hours

This course covers farm animal products and provides a general overview of the livestock and poultry industry, relative to biological concepts such as genetics, nutrition, reproduction and disease prevention. This includes biotechnology along with environmental challenges. Prerequisites: BI157, BI157L and AL185.

AL-581 PRINCIPLE OF PLANT NUTRITION

SPRING ONLY/ALL YEARS

3 credit hours

This course covers plant metabolism and the assimilation of nutrients, their functions in plant and their contributions to plant growth and crop production. The course presents a wide range of topics which cut across the boundaries of

soil sciences, plant physiology and biochemistry, as well as some of the ecological conditions pertaining to the tropical and humid environments. Prerequisites: CH102 and CH103.

AL-691 SEMINAR AND CURRENT TOPICS

SPRING ONLY/ALL YEARS

1 credit hour

This course is graduate seminar course that combines formal student presentations with invited presentations by faculty and community members involved with agriculture and life sciences and related subjects. The course consists of 1-hour sessions each week throughout the semester.

AL-692 TEACHING/RESEARCH ASSISTANTSHIP

FALL/SPRING/ALL YEARS

1 credit hour

This course provides practical educational experience in graduate Sustainable Agriculture, Food, and Natural Resources' courses. PREREQUISITE: INSTRUCTOR'S CONSENT.

AL-695 THESIS

FALL/SPRING/ALL YEARS

1 - 6 credit hours

The ALS 695 Thesis course is a final course of the SAFNR graduate program. This course is designed to give the student field and research experience within the UOG Research and Extension framework to complete and defend Thesis work. UOG faculty-directed projects are designed for individual students. The student is required to complete two 3-credit courses (i.e. 135 hours for 3 credits) directed research during their last two semesters. Prerequisite: Instructor's consent.



AL-698 INTERNSHIP IN SUSTAINABLE AGRICULTURE, FOOD AND NATURAL RESOURCES

FALL/SPRING/ALL YEARS

1 - 3 credit hours

The internship course provides students with opportunities to work in the academic and professional areas of their interest under the supervision of the expert in the field. For the internship course, a AL698 Student Contract Form needs to be signed by Student, Course Instructor, Student's Advisor, Chair of the graduate program, Dean of the college, and Supervisor of the participating party such as another academic institution, a government agency, a private business, or a non-profit organization engaged in activities that relate to sustainable agriculture, food, nutrition, and natural resources. Each credit (1 credit) requires 40 hours of job training per semester and the 3-credit internship course requires 120 hours. Students may take up to a maximum of six credit hours for completion of the program.