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| **Course Description** | **Credit Hours** | **Classification** | **Course Name** | **Course No.** |
| The course covers three basic concepts which together form an important axis in the present world. These concepts include climate change, which covers the definition, causes, and effects locally, regionally and globally, how to deal with adaptation or mitigation, and its interactions with sustainable agriculture and food security. The second include the concept of sustainable agriculture, where the course examines its principles, conditions and objectives and how to implement these goals and their interactions with sustainable development. The third concept covered by this course is the concept of food security and its components, dimensions, constraints, indicators or standards, and covers the reality, determinants and policies of food security in Jordan. In addition to the three concepts mentioned, the course covers the interactions of climate change with sustainable agriculture and food security and their implications for each other. | 3 | Compulsory | Climate Change ,Sustainable Agriculture & Food Security | 0604710 |
| This course is designed to provide students with comprehensive knowledge and skills concerning climate change adaptation and mitigation approaches. This course examines issues related to the impacts of climate change on agriculture and adaptation responses and to the mitigation of greenhouse gases. In particular, the course analyses achieving reductions in greenhouse gas emission through the implementation of different actions in the agricultural sector. The overall goal of the course is to help guide policy makers in the design of policies to address climate change issues in agriculture. | 3 | Compulsory | Climate Change Mitigation & Adaptation | 0604712 |
| This course introduces students to quantitative and qualitative methods for conducting meaningful analysis and research. Throughout, students will gain an overview of research intent and design, methodology and technique, ethics, format and presentation, data management and analysis informed by commonly used statistical methods. The course provides an overview of the important concepts of advanced research design, data collection, statistical and interpretative analysis, and final report presentation. The focus of this course is not on mastery of statistics but on the ability to use research for exploring the potential-climate conflicts links. | 3 | Compulsory | Research Methods & Advanced Statistical Analyses | 0604714 |
| This course focuses on decision-making processes and the internal and external influences on the food security process in the context of sustainable economic development. As such, the course dives into the behavioral, economic, and sociological aspects of food security, sustainability, and social responsibility that in turn affects the overall economic decision making process. Through this course, students will be taught how the government and the business sector can link up effectively, and also to investigate about countries’ concerns about food security and its impacts and governments’ willingness to adopt different economic plans in food security. | 3 | Compulsory | Economics of Climate Change ,Sustainable Agriculture & Food Security | 0604716 |
| This course focuses on the geographic information systems technology (GISs) and remote sensing (RS), which are a powerful data visualization, data analysis, and image processing tools. This course is designed to introduce students to advanced concepts of geographic information science in climate change, sustainable agriculture and food security for the purpose of spatial analysis and geo-visualization of environmental issues. Students will learn to understand and apply GIS and RS technologies and methodologies to important topics in environmental studies. Students will learn the fundamentals of mapping, photogrammetry, GIS, and RS. Students will learn to acquire and prepare data for analysis related to environmental research, model and analyze data, and interpret and map environmental data they might encounter in their careers. Students will also read, assess, and discuss peer-reviewed literature to become exposed to the latest methodologies and techniques to examining environmental issues. | 3 | Compulsory | GIS & RS Applications in Climate Change, Sustainable Agriculture and Food Security | 0604718 |
| This course aims to develop knowledge and skills related to the sustainable management of soil and water resources. The course provides students with a fundamental understanding of key hydrological processes in the context of the status of agronomic productivity and the availability of the water resources as well as to understand the relationship between climate change and global water cycle and by association the natural and human systems, to understand challenges to the governance and management of water resources, to evaluate the soil fertility and which nutrients are needed for the growth of plants, and the processes that cause a loss of soil fertility and the effects of that. The course presents best management practices for managing erosion on agricultural soils for preventing and resolving wind or water erosion, and finally investigate the management of salt and sodic problems and soil pollution as well as investigating the technologies for resolution loss of soil biodiversity. | 3 | Compulsory | Sustainable Management of Soil & Water | 0604719 |
| **Course Description** | **Credit Hours** | **Classification** | **Course Name** | **Course No.** |
| This course focuses on the buyer decision-making processes and the internal and external influences on the purchasing and consumption process in the context of Sustainable development. Considering that solving environmental problems will require behavioral changes, it is important that marketers as well as producers fully understand consumer behavior and ways to influence it. As such, the course dives into the behavioral, psychological, and sociological aspects of Food security, sustainability, and social responsibility that in turn affects the overall buying decision making process. Understanding how buyers and consumers behave is an integral part of correctly identifying their real needs. Through this course, students will be taught how the seller and the buyer can link up effectively, and also to investigate about consumers’ concerns about Food Security and its impacts and consumers’ willingness to adopt different behaviors in consumption. | 3 | Optional | Consumer behavior, Food Security, and Marketing | 0604720 |
| The course provides a framework in which you will acquire insights and skills to bring stakeholders in the fisheries system and help them understand each other’s perspectives, manage their conflicts and learn together. The course is highly interactive and will allow students to practice a range of participatory methodologies in a real-life case. Students will be challenged to apply the concepts learned to their own work situation. In this course, students will learn about fisheries governance needed to ensure food, nutrition and livelihood security. It provides them with insights on challenges that fisheries governance faces and explore ways to strengthen it. | 3 | Optional | Sustainable Fisheries & Food Security | 0604721 |
| This course provides an adequate understanding of the fundamentals that apply to starting and managing a small farm business. Students will examine the basics of traditional and organic farming systems and learn about resources and strategies to get started running their own farm business. The information and understanding gained from this course will prepare students to look at indigenous knowledge and local food supply chains from a holistic and realistic perspective. Students will gain a valuable understanding of the myriad of economic and regulatory issues involved in starting and managing a small farm. They will achieve in-depth knowledge of local and indigenous farms and peoples including their collective knowledge and the challenges they face. Students will engage and collaborate with local, small farms and their entire ecosystem (e.g. local supply chains, farmers’ markets, farming communities, etc.) | 3 | Optional | Small Scale Farming, Indigenous Knowledge & Local Food Supply | 0604722 |
| Risk Analysis in the Food Chain introduces students to the principles and practices of ensuring the safety of food across the entire breadth of the industry, including its importance to producers, manufacturers, distributors and retailers. Students will explore the key components of risk analysis: risk assessment, risk management and risk communication, all building to a well-developed sense of how to identify and manage food-related risks. In order to properly appreciate the application of these tools, one key exercise will see students acting in the role of a national food control authority, investigate a real case of food risk and develop an appropriate management strategy. As a result of completing this course, students will obtain a detailed understanding of Risk Analysis as it pertains to the food chain, and with a set of pragmatic tools that will allow students to apply these principles to their own practice. | 3 | Optional | Risk Analysis in Food Chain | 0604723 |
| Precision agriculture is high technological farming where the aim is to adapt as much as possible management actions to local, detailed growing conditions, with the aid of GPS positioning or on-the-go crop monitoring with visual and non-visual sensors. This course provides principles and applications of technologies supporting precision farming and natural resource data management planning, as well as global positioning system (GPS), geographic information system (GIS), variable rate technologies (VRT), data layering of independent variables, field sensors and computer software for precision farming.  This course covers information and technologies that are used for precision farming and their applications. - Maximize the efficiency and efficacy of applied resources to optimize yield with a minimum impact on the environment - Assess current and future perspectives of precision farming - Develop appropriate skills in scientific and community communication. | 3 | Optional | Precision Farming | 0604724 |
| The overarching goals of this course are: a) to provide a concrete understanding of sustainability justice (social, cultural, environmental, and economic) and its major role for achieving food security b) to clarify the role the food security plays in achieving sustainability justice. The course  identifies the key concepts of sustainability justice in terms of social, cultural, environmental and economic aspects. It realize the relationship between sustainability justice and food security. The course also analyze the relationship between income inequality & social inequality and how they contribute towards food insecurity. It provides an understanding of the problems & obstacles faces by minority and disadvantaged groups in achieving sustainability justice and food security. | 3 | Optional | Sustainability Justice & Food Security | 0604726 |
| This course explores the impact of climate change, livestock infectious diseases, breed selection, production sustaining, on livestock production system. It provides identification of key factors relating to livestock production systems. The course analyzes the importance of livestock production in sustainable production systems, define the effects of feed and food security on livestock production sustainability and tries to understand the integration of livestock into the current agricultural system, agricultural educators and individuals interested in working in the food supply. | 3 | Optional | Sustainable & Ethical Livestock Management | 0604727 |
| This course inspires entrepreneurial innovation and creativity. Students will gain awareness of entrepreneurial innovation sources, structures and dynamics. Students will develop individual and group skills for generating innovative ideas and find ways to apply these ideas to address current issues and problems in different industries and settings. Course topics include the history of entrepreneurship, the role of entrepreneurs and entrepreneurs in the 21st century global economy, and the identification of entrepreneurial opportunities. The elements of creative problem-solving, the development of a business concept/model, the examination of feasibility studies, and the social/moral/ethical implications of entrepreneurship will be incorporated. This course is designed to put the idea of teaching social entrepreneurship in the food industry and its direct relation with sustainable agriculture and climate change. | 3 | Optional | Social Entrepreneurship in the Organic Food Industry | 0604728 |