University of Mosul

First Cycle – Bachelor's degree (B.Sc.) – agricultural economy

جامعة الموصل
كلية الزراعة والغابات
قسم الاقتصاد الزراعي

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- Overview

This guide covers the courses offered by the Agricultural Sciences programme for the Bachelor of Agricultural Economics degree. The programme offers (56) courses, for example, with (6000) total student load hours and 240 total European units. The delivery of courses is .based on the Bologna process

- Undergraduate Courses 2023-2024

Module 1

Code	Course/Module Title	ECTS	Semester
UOM1031	**COMPUTER**	3	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	3	47	75
Description			
The "Computer Skills" module is designed to equip students with essential computing knowledge and practical skills needed for academic and professional success. It covers key areas such as basic computer operations, word processing, spreadsheet management, and presentation software. Students will also gain familiarity with internet navigation, email usage, and data management tools. The module introduces fundamental concepts in computer security, cloud computing, and the use of collaborative tools for teamwork. By the end of the course, students will be able to effectively use software applications to organize, analyze, and present information, while also understanding the ethical and secure use of technology in a modern digital environment			

Module 2

Code	Course/Module Title	ECTS	Semester
UOM1040	**DEMOCRACY and HUMAN RIGHTS**	2.00	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	32	18
Description			
The "Democracy and Human Rights" module explores the fundamental principles and concepts underlying democratic governance and the protection of human rights. Students will study the evolution of democracy, different democratic systems, and the roles of institutions in promoting participation, transparency, and accountability. The course also addresses key human rights issues, including civil,			

political, social, and economic rights, as well as international frameworks that protect these rights. Through case studies and discussions, students will analyze the challenges facing democracy and human rights in different regions and contexts. By the end of the module, students will have a deeper understanding of the interconnection between democratic values and human rights, and the importance of safeguarding these principles in modern society

Module 3

Code	Course/Module Title	ECTS	Semester
UOM1021	**ENGLISH LANGUAGE1**	2.00	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	32	18
Description			
The "English Language" module is designed to enhance students' proficiency in English, focusing on the four essential language skills: listening, speaking, reading, and writing. It provides a comprehensive approach to language learning, covering grammar, vocabulary, pronunciation, and sentence structure. Through interactive activities, such as discussions, presentations, and written assignments, students will improve their ability to communicate effectively in academic, professional, and social contexts. The module also emphasizes comprehension and analysis of texts, both written and spoken, to develop critical thinking skills. By the end of the course, students will have gained confidence in using English in various settings and will be better prepared for further academic studies and global communication.			

Module 4

Code	Course/Module Title	ECTS	Semester
MAT1010	**MATHEMATICS**	7.00	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	112
Description			
The "Mathematics" module provides students with a strong foundation in essential mathematical concepts and problem-solving techniques. Covering topics such as algebra, geometry, calculus, and statistics, the course emphasizes both theoretical understanding and practical application. Students will develop critical thinking and analytical skills, enabling them to tackle complex mathematical problems in various fields. Through exercises and real-world examples, the module aims to enhance logical reasoning and quantitative skills, preparing students for further studies and professional applications in science, engineering, economics, and more.			

Module 5

Code	Course/Module Title	ECTS	Semester

ACE1020	**AGRICULTURE CAREER ETHICS**	5.00	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	62	63
Description			
The "Agricultural Professional Ethics" module introduces students to the ethical principles and responsibilities relevant to agricultural professionals. The course covers topics such as sustainability, environmental stewardship, tree welfare, and fair labor practices. Students will explore the ethical challenges faced in modern agriculture, including the impact of agricultural practices on ecosystems and society. Through case studies and discussions, the module encourages critical thinking about moral issues and promotes a commitment to ethical decision-making in agricultural practices. By the end of the course, students will understand the importance of ethics in fostering sustainable and responsible agricultural development.			

Module 6

Code	Course/Module Title	ECTS	Semester
END1030	**ENGINEERING DRAWING**	6	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	3	63	87
Description			
The "Engineering Drawing" module equips students with the fundamental skills of technical drawing, essential for all engineering disciplines. It covers basic principles of orthographic projection, isometric views, and sectional drawings. Students will learn how to interpret and create accurate engineering drawings, focusing on line work, dimensions, scaling, and geometric tolerances. The module also introduces the use of computer-aided design (CAD) software, enabling students to produce precise technical diagrams. By the end of the course, students will be proficient in visualizing and communicating design concepts, preparing them for advanced engineering tasks.			

Module 7

Code	Course/Module Title	ECTS	Semester
AET1040	**AGRICULTRAL ENGINEERING TECHNIQUES TRANSFER**	5.00	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Agricultural Engineering Techniques Transfer" module focuses on the application and dissemination of modern engineering solutions in agriculture. It covers the principles of technology transfer, including the adoption of advanced machinery, irrigation systems, and precision farming tools. Students will learn how to assess and implement engineering techniques that enhance agricultural			

productivity and sustainability. The module emphasizes communication skills for effectively transferring knowledge to farmers and agricultural stakeholders. By the end of the course, students will be prepared to bridge the gap between agricultural research and practical field applications, promoting innovation in the agricultural sector.

Module 8

Code	Course/Module Title	ECTS	Semester
UOM1011	**ARABIC LANGUAGE1**	2.00	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	32	18
Description			
The "Arabic Language" module is designed to develop students' proficiency in reading, writing, speaking, and listening in Arabic. It covers essential grammar, vocabulary, and sentence structure while emphasizing both classical and modern Arabic. Through various texts, writing exercises, and oral activities, students will enhance their communication skills and cultural understanding. The course also focuses on improving comprehension of complex texts and refining formal and informal writing styles. By the end of the module, students will have strengthened their ability to use Arabic effectively in academic, professional, and social contexts.			

Module 9

Code	Course/Module Title	ECTS	Semester
BSS1050	**BIOSAFETY and SECURITY**	3.00	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	47	28
Description			
The "Biosafety and Security" module provides students with an understanding of the principles and practices necessary to ensure safety in biological research and biotechnology. It covers topics such as risk assessment, containment strategies, and the safe handling of biological materials. Students will explore the ethical and legal frameworks governing biosafety, as well as the potential threats of biological hazards and biosecurity risks. The module emphasizes the importance of implementing proper protocols to protect both public health and the environment. By the end of the course, students will be equipped with the knowledge to manage biosafety in laboratory and field settings.			

Module 10

Code	Course/Module Title	ECTS	Semester
AGS1060	**AGRICULTURAL STATISTICS**	5.00	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**

2	3	78	47
Description			
The "Agricultural Statistics" module introduces students to the statistical methods and tools used in agricultural research and data analysis. Topics covered include data collection, probability, hypothesis testing, regression analysis, and experimental design. Students will learn how to apply statistical techniques to solve real-world agricultural problems, such as crop yield analysis, soil quality assessment, and livestock management. The course emphasizes the interpretation of statistical results to inform decision-making in agricultural practices. By the end of the module, students will be able to analyze and interpret agricultural data, supporting evidence-based approaches in farming and research.			

Module 11

Code	Course/Module Title	ECTS	Semester
BIO1070	**BIODIVERSITY**	5.00	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Biodiversity" module explores the variety of life forms on Earth and their ecological significance. Students will study the different levels of biodiversity, including genetic, species, and ecosystem diversity, and their roles in maintaining ecosystem health and resilience. The course covers key concepts such as habitat conservation, the impacts of human activities on biodiversity, and strategies for sustainable management. Through case studies and fieldwork, students will learn about the importance of preserving biodiversity for food security, environmental stability, and human well-being. By the end of the module, students will appreciate the complex interrelationships among species and the need for conservation efforts.			

Module 12

Code	Course/Module Title	ECTS	Semester
AGI1080	**AGRICULTURAL IN FORMATICS**	5.00	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	1	63	62
Description			
The "Agricultural Informatics" module focuses on the integration of information technology and data management in the agricultural sector. Students will learn about the tools and techniques used to collect, analyze, and interpret agricultural data, including Geographic Information Systems (GIS), remote sensing, and data analytics. The course emphasizes the role of informatics in improving decision-making, enhancing productivity, and promoting sustainable agricultural practices. Through practical exercises and case studies, students will develop skills in managing agricultural information systems and utilizing technology for precision farming and resource management. By the end of the			

module, students will be equipped to leverage informatics in addressing contemporary agricultural challenges.

Module 13

Code	Course/Module Title	ECTS	Semester
SUD1090	**SUSTANIBLE DEVELOPMENT**	5.00	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	62	63
Description			
The "Sustainable Development" module explores the principles and practices essential for achieving a balance between environmental, social, and economic sustainability. Students will study key concepts such as the United Nations Sustainable Development Goals (SDGs), resource management, and community engagement. The course examines the interconnections between human activities and environmental health, focusing on strategies to address challenges such as climate change, biodiversity loss, and poverty. Through case studies and project-based learning, students will develop critical thinking and problem-solving skills to promote sustainable practices in various sectors. By the end of the module, students will be prepared to contribute to sustainable development initiatives locally and globally.			

Module 14

Code	Course/Module Title	ECTS	Semester
AMT1100	**AGRICULTURAL MARKETING TECHNIQUES**	5.00	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	32	93
Description			
The "Agricultural Marketing Techniques" module provides students with a comprehensive understanding of marketing principles specific to the agricultural sector. It covers key topics such as market analysis, consumer behavior, pricing strategies, and distribution channels for agricultural products. Students will learn effective techniques for promoting and selling crops, livestock, and other agricultural goods in domestic and international markets. The course emphasizes the importance of branding, quality assurance, and sustainable practices in marketing. Through case studies and practical exercises, students will develop skills to create effective marketing plans and strategies that enhance competitiveness and profitability in the agricultural industry.			

Module 15

Code	Course/Module Title	ECTS	Semester
UOM1012	**ARABIC LANGUAGE2**	2.00	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**

2		32	18
Description			
The "Arabic Language" module is designed to develop students' proficiency in reading, writing, speaking, and listening in Arabic. It covers essential grammar, vocabulary, and sentence structure while emphasizing both classical and modern Arabic. Through various texts, writing exercises, and oral activities, students will enhance their communication skills and cultural understanding. The course also focuses on improving comprehension of complex texts and refining formal and informal writing styles. By the end of the module, students will have strengthened their ability to use Arabic effectively in academic, professional, and social contexts.			

Module 16

Code	Course/Module Title	ECTS	Semester
UOM2050	**The CRIMES of the BATH REGIME in IRAQ**	2.00	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	32	18
Description			
The "Crimes of the Ba'ath Regime in Iraq" module examines the human rights abuses and atrocities committed during the rule of the Ba'ath Party. Students will explore key events such as the Anfal Campaign, chemical attacks, mass executions, and the suppression of political dissent. The module also delves into the legal, social, and historical context of the regime's actions, analyzing the impact on various ethnic and religious groups. By studying testimonies, legal documents, and historical accounts, students will gain a deeper understanding of the regime's legacy and its consequences for Iraq and the wider region.			

Module 17

Code	Course/Module Title	ECTS	Semester
IPM2110	**INTEGRATED PEST MANAGEMENT**	5.00	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Integrated Pest Management" (IPM) module focuses on sustainable and environmentally friendly approaches to managing agricultural pests. Students will learn about the principles of IPM, which combines biological, cultural, mechanical, and chemical methods to control pests while minimizing harm to ecosystems. The course covers pest identification, monitoring techniques, and decision-making processes to implement effective pest control strategies. Emphasis is placed on reducing pesticide use and promoting natural predators. By the end of the module, students will be equipped with the			

knowledge and skills to design and apply integrated pest management plans that enhance crop production and protect the environment.

Module 18

Code	Course/Module Title	ECTS	Semester
AEM2120	**AGRICULTRAL ENGINEERING PROJECT MANAGEMENT**	2	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	78	72
Description			
The course aims to equip students with the necessary knowledge to manage agricultural projects efficiently and effectively and focuses on developing the skills and knowledge necessary to manage projects in the agricultural sector. The course covers many terms, including defining the principles of project management and its importance. Identifying the project life cycle. Project planning, estimating costs and resources. Risk management. Scheduling: techniques for setting deadlines and organizing work. Evaluation and follow-up: methods for measuring performance and evaluating the results of agricultural projects. Technology in project management: using technical tools such as software to manage projects. Case studies: analyzing successful agricultural projects to understand challenges and solutions.			

Module 19

Code	Course/Module Title	ECTS	Semester
APT2130	**AGRICULTURAL PRODUCTION MECHANIZATION TECHNIQUES**	5.00	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Agricultural Production Mechanization Techniques" module focuses on the use of machinery and technology to enhance the efficiency and productivity of agricultural operations. Students will study various mechanization techniques, including the use of tractors, harvesters, irrigation systems, and planting equipment. The course covers the principles of machine operation, maintenance, and safety, along with the economic and environmental impacts of mechanization. Emphasis is placed on selecting appropriate machinery for different farming tasks to optimize production. By the end of the module, students will be able to apply modern mechanization techniques to improve agricultural processes and sustainability.			

Module 20

Code	Course/Module Title	ECTS	Semester

APT2140	**AGRICULTURAL PRODUCTION TECHNOLOGIES**	5.00	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Agricultural Production Technologies" module introduces students to the latest innovations and technologies used to enhance agricultural productivity and sustainability. Topics include precision farming, advanced irrigation systems, greenhouse technologies, and the use of biotechnology in crop and livestock production. Students will explore how these technologies optimize resource use, improve yields, and reduce environmental impacts. The course also covers the integration of digital tools like drones, sensors, and data analytics to monitor and manage agricultural processes. By the end of the module, students will be equipped with practical knowledge of cutting-edge technologies to improve efficiency in agricultural production.			

Module 21

Code	Course/Module Title	ECTS	Semester
FTP2150	**FOOD TECHNOLOGIES and HEALTH AGRICULTRAL PRODUCTS**	5.00	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Food Technologies and Health Agricultural Products" module focuses on the processing, preservation, and safety of agricultural products to ensure high nutritional value and quality. Students will learn about modern food technologies used in the production of healthy and safe food, including techniques like pasteurization, canning, drying, and packaging. The course also covers the impact of these technologies on the nutritional content of food, as well as regulations and standards for food safety. By the end of the module, students will understand how to apply advanced food technologies to produce health-focused agricultural products that meet consumer demands.			

Module 22

Code	Course/Module Title	ECTS	Semester
UOM2022	**ENGLISH LANGUAGE2**	2.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	0	32	18
Description			
The "English Language" module is designed to enhance students' proficiency in English, focusing on			

the four essential language skills: listening, speaking, reading, and writing. It provides a comprehensive approach to language learning, covering grammar, vocabulary, pronunciation, and sentence structure. Through interactive activities, such as discussions, presentations, and written assignments, students will improve their ability to communicate effectively in academic, professional, and social contexts. The module also emphasizes comprehension and analysis of texts, both written and spoken, to develop critical thinking skills. By the end of the course, students will have gained confidence in using English in various settings and will be better prepared for further academic studies and global communication.

Module 23

Code	Course/Module Title	ECTS	Semester
UOM2032	**COMPUTER SKILLS2**	3.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	3	47	28
Description			
The "Computer Skills" module is designed to equip students with essential computing knowledge and practical skills needed for academic and professional success. It covers key areas such as basic computer operations, word processing, spreadsheet management, and presentation software. Students will also gain familiarity with internet navigation, email usage, and data management tools. The module introduces fundamental concepts in computer security, cloud computing, and the use of collaborative tools for teamwork. By the end of the course, students will be able to effectively use software applications to organize, analyze, and present information, while also understanding the ethical and secure use of technology in a modern digital environment			

Module 24

Code	Course/Module Title	ECTS	Semester
DAE2160	**DESIGN AND ANALYSIS of EXPERIMENTS**	5.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Design and Analysis of Experiments" module introduces students to the principles and methodologies used in planning, conducting, and analyzing scientific experiments. The course covers key topics such as experimental design, randomization, replication, and the analysis of variance (ANOVA). Students will learn how to create experiments that yield valid, reliable results and how to analyze data using statistical methods to draw meaningful conclusions. Emphasis is placed on practical applications in agricultural and biological research. By the end of the module, students will be able to design robust experiments and interpret experimental data for research and decision-making.			

Module 25

Code	Course/Module Title	ECTS	Semester

DPF2170	**DESIGN and PLANNING of AGRICULTURAL FACILITIES**	5.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Design and Planning of Agricultural Facilities" module focuses on the principles of designing and developing efficient and sustainable infrastructure for agricultural operations. Students will learn how to plan and design key facilities such as storage buildings, greenhouses, irrigation systems, livestock housing, and processing units. The course emphasizes factors like cost-efficiency, environmental impact, and functionality in agricultural production. Topics also include site selection, layout optimization, and the use of modern materials and technologies. By the end of the module, students will be equipped to plan and design agricultural facilities that enhance productivity and sustainability.			

Module 26

Code	Course/Module Title	ECTS	Semester
BEI180	Beneficial insects	5.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The course includes theoretical lectures and practical experiments, which helps students understand the importance of these organisms in daily life and the environment and focuses on studying insects that play a positive role in the environment. The course covers a range of topics, such as. Insect classification: defining different species and how to classify them. The role of insects in ecological balance: studying how insects affect the environment, such as pollinating plants and decomposing organic matter. Insects as pest control agents: reviewing how insects are used to naturally control agricultural pests. Insect farming: techniques for raising beneficial insects in agriculture and environmental projects. Economic impacts: how the economy benefits from beneficial insects in agriculture and industry.			

Module 27

Code	Course/Module Title	ECTS	Semester
SWS21910	**SOIL and WATER SUITBILITY**	5.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62

Description
The "Design and Soil and Water Suitability" module focuses on evaluating soil and water resources for optimal agricultural use. Students will learn techniques for assessing soil properties, water availability, and quality to determine their suitability for different crops and farming systems. The course covers topics such as soil classification, irrigation design, drainage systems, and sustainable water management practices. Students will also explore the environmental impact of agricultural activities on soil and water resources. By the end of the module, students will be able to design effective land-use strategies that maximize productivity while preserving soil and water health.

Module 28

Code	Course/Module Title	ECTS	Semester
AWE2210	**AGRICULTURAL WASTE TREATMENT ENGINEERING**	5.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Design and Biochemical Analysis" module introduces students to the principles and techniques used in the biochemical analysis of agricultural products and processes. The course covers experimental design, sample preparation, and the application of various analytical methods, including chromatography, spectroscopy, and enzymatic assays. Students will learn to assess the composition and quality of food, soil, and plant materials through biochemical analysis. Emphasis is placed on interpreting results and understanding their implications for agricultural practices and food safety. By the end of the module, students will be equipped to design and conduct experiments that enhance biochemical understanding in agricultural contexts.			

Module 29

Code	Course/Module Title	ECTS	Semester
AFE3500	**AGRICULTURAL and FOOD ECONOMICS**	2.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	50
Description			
Food and Agricultural Economics is a field that focuses on the economic principles and methodologies applied to the production, distribution, and consumption of food and agricultural products. The discipline combines aspects of both economics and agricultural sciences to address various issues relevant to the agricultural sector and food systems. Production Economics : Analyzes how agricultural producers make decisions regarding resource allocation, crop selection, and technology adoption, often using models to optimize yield and profitability Market Analysis*: Studies the supply and demand dynamics of			

agricultural product, including price formation, market structure, and the behavior of various stakeholders in the food supply chain. Food Policy*: Evaluates government policies related to agriculture and food, including subsidies, trade regulations, food safety standards, and their impacts on producers and consumers Resource Management : Examines the sustainable use of natural resources in agriculture, including land, water, and biodiversity, and the economic implications of resource depletion or conservation

Module 30

Code	Course/Module Title	ECTS	Semester
OIA3510	**ORGANIZATIONS and INTERNATIONAL RELATIONS AGRICULTURAL**	3.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12

Description

International agricultural organizations play a crucial role in improving agricultural productivity, enhancing food security, and promoting sustainable practices worldwide. These organizations work through various programs, policies, and partnerships with countries, NGOs, and the private sector. Here are some key international agricultural organizations and their roles.Food and Agriculture Organization (FAO) Established 1945.Headquarters:* Rome, Italy.Mission:* To defeat hunger and improve nutrition and food security. FAO helps countries implement agricultural policies, conduct research, and provide technical assistance. It also collects and disseminates agricultural data..International Fund for Agricultural Development (IFAD(Established 1977.Headquarters.Rome, Italy .Mission Focuses on rural development and poverty reduction by financing projects that improve agricultural productivity and rural infrastructure. IFAD partners with governments and local communities to enhance food security.

Module 31

Code	Course/Module Title	ECTS	Semester
FBE3520	**FARM BUSINESS ECONOMICS**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62

Description

The course enhances a comprehensive understanding of the challenges of agricultural business and provides students with the knowledge necessary to make informed decisions in the field of agriculture and focuses on the application of economic principles in the context of agriculture and agricultural business management. The course includes the following topics: The concept of agricultural economics and its importance in economic development. Analysis of the agricultural market and pricing of agricultural products, and competition in the market. How to

manage natural and financial resources in agriculture to achieve maximum productivity and efficiency. Costs of production. Modern agricultural technologies: the impact of technological innovations on productivity and efficiency. Agricultural policies: the role of government policies in supporting the agricultural sector and protecting farmers. Agricultural trade International trade on local markets and farmers.

Module 32

Code	Course/Module Title	ECTS	Semester
AGA3530	**AGRICULTURAL ACCOUNTING**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Teaching students agricultural accounting and its differences from financial accounting, then studying accounting cases for each type of agricultural project, learning about agricultural accounting methods, specializing in preparing agricultural calculators for different projects, learning about the nature of agricultural accounting and how accounting deals with agricultural projects.			

Module 33

Code	Course/Module Title	ECTS	Semester
MEA3540	**MATHEMATICAL ECONOMICS ANALYSIS**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Introducing the student to the subject of economic mathematics, which is considered the quantitative and contemporary method in understanding, analyzing and formulating economic theory. Also, introducing the student to the mathematical method, which is the best way to provide a clear, comprehensive and easy-to-understand picture of the theoretical foundations and how to transform them into practical applications. The student acquires skills in solving economic mathematical problems using matrices. The student acquires skills through the use of partial derivatives in calculating the elasticity of demand, supply and production. The student acquires skills in calculating profits and reducing costs for the economic establishment or farm.			

Module 34

Code	Course/Module Title	ECTS	Semester
AMT3551	**AGRICULTURAL**	5.00	5

	MICROECONOMIC THEORY1		
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
he program aims to familiarize the student with the hypothetical markets such as the perfect competition market, the perfect monopoly market, monopolistic competition, oligopoly, and monopoly purchasing, and how the establishment and industry are balanced in these markets, in addition to training the student towards choosing the size of the use of resources in different markets and their demand curves and the market demand for these resources, and then getting to know what is called welfare economics and achieving the optimal Pareto distribution in exchange and production.			

Module 35

Code	**Course/Module Title**	**ECTS**	**Semester**
FEB3640	**FOOD ECONOMICS and CONSUMER BEHAVIOUR**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
behavior are intertwined fields that explore how economic principles influence food production, distribution, and consumption, as well as how consumer preferences and behaviors affect these processes. Supply and Demand in Food Markets- Supply Agricultural production, technology, weather conditions, and global trade policies can influence the availability of food products. Demand Consumer preferences, income levels, health trends, and cultural factors shape the demand for different types of food Price Elasticity .Understanding how sensitive consumers are to price changes can help predict how an increase or decrease in food prices affects consumption. For instance, staple foods like bread may have inelastic demand, while luxury items like gourmet cheese may have more elastic demand .Market Structures. Food markets can range from perfect competition (many farmers producing similar goods) to oligopolies (few large companies controlling significant market shares, as seen in processed foods).			

Module 36

Code	**Course/Module Title**	**ECTS**	**Semester**
ETS3560	**ECONOMIC THOUGHT and SYSTEMS**	4.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	52
Description			

The course enhances the critical understanding of economic phenomena and helps students analyze economic issues from a multi-perspective perspective and deals with the study of the basic principles of economics and its various systems. The course includes an introduction to economic thought: the history of the development of economic thought and the most important schools of thought. Fundamentals of economics: the concepts of supply and demand, market, prices, and resources. Economic systems: a comparison between different economic systems. Economic policies: the role of government in the economy, fiscal and monetary policies. Economic development: the concepts of development, growth, and dimensions of sustainable development. Contemporary economic challenges: such as unemployment, inflation, and inequality.

Module 37

Code	Course/Module Title	ECTS	Semester
APE3570	**AGRICULTURAL PRODUCTION ECONOMICS**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Providing the student with information related to efficient production and how to reach a combination of products that will maximize the producer's profits, as well as providing the student with knowledge related to how the agricultural product interacts with price changes that its products may face, what the producer will do in the face of uncertain conditions facing its product, what the producer will do in the face of uncertain conditions facing its product, and what are the effects of technology on the farmer's product, and providing examples supported by facts, figures or drawings in order to bring the idea closer to the students in most of the necessary aspects that require clarification.			

Module 38

Code	Course/Module Title	ECTS	Semester
IAT3580	**INTERNATIONAL AGRICULTURAL TRADE**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Teaching students the meaning of foreign trade and the divisions of trade and which of them has the most impact on the local economy. Then students are taught other terms such as theories of foreign trade, balance of payments, exchange rate, and trade policies and which of them are most appropriate for the conditions of developing countries. Also, learning about the reality of foreign trade in developing and developed countries and learning how foreign trade contributes to economic growth and learning about the theories of foreign trade and understanding how foreign trade contributes to economic growth.			

Module 39

Code	Course/Module Title	ECTS	Semester
AED3590	**AGRICULTURAL ECONOMICS DEVELOPMENT**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Department of Agricultural Economics aims, through its educational programs and curricula, to prepare agricultural cadres capable of knowing the activities of the agricultural profession and the welfare of individuals through economic development in general and economic development in particular by finding appropriate solutions to agricultural problems in both its plant and animal aspects, as it is an integral part of the economic activities in the country and cannot be separated from those economic activities and economic growth. To advance the reality of the agricultural sector and its educational programs by teaching them the nature of the factors that control agricultural production and economic development, especially development specific to the agricultural sector. And to identify the goals, requirements and strategies of agricultural development.			

Module 40

Code	Course/Module Title	ECTS	Semester
REM3600	**RESEARCH METHODS**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Enabling the student to understand and comprehend the scientific method in research as well as defining the scientific research methodology, as the quality of scientific research lies in its conformity with reality and the ability to present and explain the scientific material and use methodological books to explain the material or auxiliary notebooks. As well as using the virtual library as well as the Internet and referring to scientifically reliable sites. Referring to modern sources and enriching the scientific material with everything new that serves the student and society.			

Module 41

Code	Course/Module Title	ECTS	Semester

AMT3552	**AGRICULTURAL MICROECONOMIC THEORY2**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The program aims to familiarize the student with the hypothetical markets such as the perfect competition market, the perfect monopoly market, monopolistic competition, oligopoly, and monopoly purchasing, and how the establishment and industry are balanced in these markets, in addition to training the student towards choosing the size of the use of resources in different markets and their demand curves and the market demand for these resources, and then getting to know what is called welfare economics and achieving the optimal Pareto distribution in exchange and production, and getting to know the conditions of the perfect competition market and the equilibrium of the establishment in the short and long term, as well as getting to know the monopoly market and how the establishment is balanced, and studying the patterns of different markets and deriving their demand curve and the establishments organized under them, and getting to know how to price and employ production factors in different markets, and studying the general equilibrium and welfare economics.			

Module 42

Code	Course/Module Title	ECTS	Semester
SEM3260	**SEMINARS**	1.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	0	17	8
Description			
The "Seminars" module is designed to enhance students' critical thinking, research, and presentation skills through a series of interactive discussions and presentations on contemporary topics in forestry and environmental science. Students will engage with faculty, industry experts, and peers to explore current research trends, challenges, and innovations within the field. The module emphasizes the importance of effective communication and the ability to articulate ideas clearly and confidently. Participants will present their findings from individual research projects and receive constructive feedback, fostering a collaborative learning environment. By the end of the module, students will be well-prepared for professional discussions and academic discourse in their careers.			

Module 43

Code	Course/Module Title	ECTS	Semester
AOR4610	**AGRICULTURAL OPERATIONS RESEARCH**	300	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	3	63	12

Description
Studying topics related to how to make decisions in an organized scientific manner by using some different mathematical and statistical models that address different aspects of the decision and various criteria for how to evaluate the available alternatives and compare them and make the best choice in light of the model used for that. General and transferable qualification skills (other skills related to employability and personal development) Using some special software for applying operations research models in a manner consistent with the objectives and requirements of the practical material. The most important of these software are (tora, winqsb, qm, lindo, lingo)

Module 44

Code	Course/Module Title	ECTS	Semester
AMT4621	**AGRICULTURAL MACROECONOMIC THEORY1**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Macroeconomic theory classifies the study of economics into macroeconomics and microeconomics. It explains the importance of national income and its accounts, the basic ideas that are used in its calculations, methods for measuring these accounts, knowledge of the concept of index numbers and methods for their composition, components of national product and its determinants, the relationship between income and consumption and the factors affecting them, explaining saving and investment and the factors affecting them, and defining Equilibrium levels in production, income and employment, determining planned and actual saving, planned and actual investment, knowing changes in the level of national product and the idea of the multiplier, addressing the characteristics of the multiplier, explaining the dilemma of saving, explaining the importance of the inflationary gap and the deflationary gap, drawing graphical and illustrative forms for them, studying the principle of the accelerator and the interaction between it and the multiplier, and explaining the importance of money and its concept. And finally, its functions and types of demand Study of financial policy tools and the effects of public expenditures			

Module 45

Code	Course/Module Title	ECTS	Semester
AEP4630	**AGRICULTURAL ECONOMICS POLICY**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Agricultural policy is one of the most important branches of agricultural economics that enables the student to learn how to establish the foundations and general frameworks for			

agricultural policy, as many third world countries suffer from a food crisis, which results in a decrease in their self-sufficiency. This may come in part from the lack of agricultural policies that can rationalize the use of economic resources. The dimensions and objectives of agricultural economic policy are identified, the types of Iraqi, Arab and international agricultural policies are known, and work is done to provide the student with skills in economic analysis and agricultural policy, and to learn skills in the importance of policies and their application in various aspects of life.

Module 46

Code	Course/Module Title	ECTS	Semester
APE4640	**AGRICULTURAL PROJECTS EVALUATION**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Project Evaluation: It is a method or approach used to identify the extent of the benefit that will be achieved through the expected investment decision, i.e. (the expected project), and this organized study will provide the investment decision maker with a comprehensive vision of what the project will be like during its expected life so that a specific decision can be made regarding establishing the project or not. According to specific financial, economic and social standards and criteria, in addition to that, this vision will guide the decision maker in addressing any shortcomings or financial obstacles that the project may face in the future. Therefore, the project evaluation process aims to achieve the best possible use of material and human resources by measuring the net benefits of the proposed project, and according to financial, economic and social standards as a basis for accepting or rejecting it, arranging alternative projects and comparing them.			

Module 47

Code	Course/Module Title	ECTS	Semester
AGE4651	**AGRICULTURAL ECONOMETRICS1**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Econometrics is one of the most important branches of economics, which specializes in addressing economic problems by developing solutions through quantitative calculation methods. Through it, the student learns about the concept of econometrics and its most important objectives. It can also explain to the student the curriculum, assumptions, and pillars of econometrics and its relationship to other sciences, and learn about econometric models and types of equations through which the student can understand and comprehend what is related			

to econometrics and work to know the role of econometrics in practical applications and economic research by knowing simple regression and knowing the most important economic and statistical tests. The student can also understand and comprehend what is related to econometrics with the extent of the student's application of econometric methods and methods in the practical field by solving tests (T, F. R2, R-2) and the extent of the student's practical experience to give importance to the material, as the student can solve mathematical exercises for statistical tests, as the student can measure the effect of independent variables on the dependent variable by conducting many economic and statistical tests

Module 48

Code	Course/Module Title	ECTS	Semester
AEE4660	**AGRICULTURAL ENVIRONMENT ECONOMICS**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62

Description

The course includes case studies and practical applications to understand the challenges and opportunities in this field. It focuses on studying the relationship between agricultural activities and the environment. The course covers concepts such as:Sustainability of agriculture: How to achieve a balance between agricultural production and environmental conservation.Costs and benefits: Analysis of the environmental costs associated with agriculture and their impact on the economy..Climate change: The impact of climate change on agricultural production and how to adapt to it.Natural resource management: Strategies for the efficient and sustainable use of resources such as water and soil.Agricultural policies: The role of governments in regulating agricultural activities and their impact on the environment.

Module 49

Code	Course/Module Title	ECTS	Semester
AEP4290	**AGRICULTRUAL ENGINEERING PROJECT1**	2.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	3	47	3

Description

The "Agricultural Engineering Project" module provides students with hands-on experience in applying engineering principles to solve real-world agricultural problems. Throughout the course, students will work on individual or group projects that focus on designing, developing, and implementing innovative solutions in areas such as irrigation systems, machinery design, and sustainable farming practices. Emphasis will be placed on project planning, resource management, and technical communication. Students will also engage in critical analysis and evaluation of their designs through feedback and peer review. By the end of the module, participants will gain valuable skills in project management and

practical engineering applications within the agricultural sector.

Module 50

Code	Course/Module Title	ECTS	Semester
FSE4680	**FOOD SECURITY and NATURAL RESOURCES ECONOMICS**	3.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12
Description			
Resource economics is a branch of economics that studies how to allocate limited natural resources in an efficient and fair manner. The main goal of this science is to achieve a balance between economic growth and environmental conservation.In short, how can we make the most of our natural resources without depleting them or destroying the environment?The main goals of resource economics: Optimal use of resources, making the most of available resources without wasting them, preserving the environment, and developing ways to manage natural resources that preserve the environment for future generations (sustainable development), achieving economic development in a way that ensures its continuity without negatively affecting the environment and society.In addition to evaluating environmental policies and analyzing and evaluating government policies related to natural resource management.And developing innovative solutions to search for innovative solutions to environmental challenges, such as climate change and pollution.			

Module 51

Code	Course/Module Title	ECTS	Semester
AMT4622	**AGRICULTURAL MACROECONOMIC THEORY2**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Macroeconomic theory classifies the study of economics into macroeconomics and microeconomics. It explains the importance of national income and its accounts, the basic ideas that are used in its calculations, methods for measuring these accounts, knowledge of the concept of index numbers and methods for their composition, components of national product and its determinants, the relationship between income and consumption and the factors affecting them, explaining saving and investment and the factors affecting them, and defining Equilibrium levels in production, income and employment, determining planned and actual saving, planned and actual investment, knowing changes in the level of national product and the idea of the multiplier, addressing the characteristics of the multiplier, explaining the dilemma of saving, explaining the importance of the inflationary			

gap and the deflationary gap, drawing graphical and illustrative forms for them, studying the principle of the accelerator and the interaction between it and the multiplier, and explaining the importance of money and its concept. And finally, its functions and types of demand

Module 52

Code	Course/Module Title	ECTS	Semester
APA4690	**AGRICULTURAL PRICE ANALYSIS**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62

Description

Enabling the student to understand and comprehend what is related to price analysis and the concepts associated with price discovery
- Enabling the student to know the changes in prices over time and to know the methods of analyzing the price trend
- Enabling the student to know the periodic and seasonal fluctuations in the prices of agricultural commodities and to know the analysis of methods for measuring fluctuations
- Enable the student to know the types of demand, the factors affecting demand, elasticities of demand, know the derivation of demand in the short and long run, and solve exercises on price elasticities.
- Enables the student to present goods, the factors influencing supply, elasticities of supply, and learn methods for analyzing supply and estimating the supply function
- The student can learn the objectives and methods of government intervention in the pricing of agricultural products
- The student can know the economic effects of the government intervention policy and learn about some government experiences in the government intervention policy
- The student can identify mathematical models to measure the economic effects of government intervention policy and learn ways to find the sensitivity analysis matrix and nominal and actual protection coefficients

Module 53

Code	Course/Module Title	ECTS	Semester
AFL4700	**AGRICULTURAL FINANCING and LENDING**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62

Description

Introducing the student to the subject of agricultural financing and lending, research methods in agricultural financing, as well as sources of financing and functions performed by credit, how to expand the scope of credit, knowledge of the basic rules in the process of granting agricultural loans, identification of the economic effects of agricultural credit, types of loans and their terms, and the guarantees required in granting loans, methods of repaying loans, and how to optimally exploit loans

and use them for the purpose for which they were granted.

Module 54

Code	Course/Module Title	ECTS	Semester
AGE4652	**AGRICULTURAL ECONOMETRICS2**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Econometrics is one of the most important branches of economics, which specializes in addressing economic problems by developing solutions through standard and quantitative calculation methods. Through it, the student learns about the concept of econometrics, its most important objectives, and the most important statistical and standard tests through prior knowledge of the least squares hypotheses, their most important characteristics, and the reasons for entering the random variable. It can also be explained to the student the curriculum, hypotheses, and reasons for the emergence of the four standard problems represented by (the problem of multiple linear correlation, the problem of autocorrelation, the problem of instability of variance, and finally the problem of errors), through which the student can understand and comprehend what is related to econometrics and the nature of its role in practical applications and economic research through knowledge of multiple regression and methods of measuring it, and how to get rid of these four standard problems and how to deal with each problem through detection methods and relying on the standard method to get rid of problems in a way that ensures the safety of variables and dealing with them through the results resulting from them			

Module 55

Code	Course/Module Title	ECTS	Semester
SAT4310	**SMART AGRICULTURAL TECHNIQUES**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
Smart agricultural technologies are a set of modern tools and techniques used to improve agricultural operations and make them more efficient and sustainable through the use of data and advanced technology. These technologies aim to increase agricultural production while reducing costs and conserving natural resources. Below is a summary of the most important aspects of smart agricultural technologies: Precision agriculture, remote sensing and the Internet of Things (IoT), , Artificial intelligence and data analysis. Vertical farming, smart irrigation systems, drones. Hydroponics			

, Smart agricultural technologies rely on advanced technology to make agricultural operations more precise and sustainable. Using technologies such as artificial intelligence, the Internet of Things, and robotics, productivity can be improved, costs reduced, and natural resources protected, contributing to sustainable and efficient agriculture

Module 56

Code	Course/Module Title	ECTS	Semester
AEP4292	**AGRICULTRUAL ENGINEERING PROJECT2**	2.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
0	3	47	3
Description			
The "Agricultural Engineering Project" module provides students with hands-on experience in applying engineering principles to solve real-world agricultural problems. Throughout the course, students will work on individual or group projects that focus on designing, developing, and implementing innovative solutions in areas such as irrigation systems, machinery design, and sustainable farming practices. Emphasis will be placed on project planning, resource management, and technical communication. Students will also engage in critical analysis and evaluation of their designs through feedback and peer review. By the end of the module, participants will gain valuable skills in project management and practical engineering applications within the agricultural sector.			

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