University of Mosul

Collogue of agriculture and forestry

Department of food science

First Cycle – Bachelor's degree (B.Sc.) –Food Science

Table of Contents

- **Overview**

This guide covers the courses offered by the Agricultural Sciences programme for the Bachelor of food science 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 2024-2025

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. ChatGPT			

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
ECE2180	Economic Entomology	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
BIA2200	**Biochemical analysis**	5.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The "Biochemical analysis " module provides students with an understanding of the techniques and processes used to study and analyze the chemical substances and processes occurring within living organisms. It focuses on understanding the molecular composition and functions of biomolecules like proteins, nucleic acids, lipids, and carbohydrates, as well as the metabolic pathways they participate and Analyzing protein structure, function, and interactions, Western blotting, ELISA, mass spectrometry, and protein crystallography, Techniques: PCR, gel electrophoresis, Biochemical analysis plays a crucial role in understanding the molecular mechanisms underlying health, disease, and biological functions.			

Module 28

Code	Course/Module Title	ECTS	Semester
AGM2220	**Agricultural microbiology**	5.00	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The " **Agricultural microbiology** " module introduces students to study of microorganisms that inhabit, create, or contaminate food. It focuses on understanding the role of microbes in food production, food spoilage, foodborne diseases, and food preservation. This field is vital for ensuring food safety, enhancing food quality, and improving fermentation processes, Study of microorganisms that cause diseases when consumed with contaminated food, Prevention of foodborne illnesses through hygiene, proper cooking, and handling practices, Food microbiology is critical for both the food industry and public health, helping to ensure that food products are safe, nutritious, and free from harmful microorganisms.			

Module 29

Code	Course/Module Title	ECTS	Semester
FOH3500	**Food hygine**	2.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	50
Description			
The " **Food hygine** " module introduces students to study of microorganisms that inhabit, create, or contaminate food. It focuses on understanding the role of microbes in food production, food spoilage, foodborne diseases, and food preservation. This field is vital for ensuring food safety, enhancing food quality, and improving fermentation processes, Study of microorganisms that cause diseases when consumed with contaminated food, Prevention of foodborne illnesses through hygiene, proper cooking, and handling practices, Food microbiology is critical for both the food industry and public health, helping to ensure that food products are safe, nutritious, and free from harmful microorganisms			

Module 30

Code	Course/Module Title	ECTS	Semester
FAT3510	**Food Additves and Toxicology**	3.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12
Description			
The " **Food Additves and Toxicology** " focus on the substances added to food to enhance its properties and the study of their safety, potential risks, and effects on human health. Food additives are used to improve flavor, appearance, texture, shelf life, and nutritional value, while toxicology assesses the safety of these additives and other potential toxins present in food, studies the potential adverse effects of chemical substances, including food additives, on living organisms. It ensures that additives are safe for human consumption at the levels typically found in food, The amount of a food additive considered safe to consume daily over a lifetime without risk to health. ADIs are based on animal and human studies.			

Module 31

Code	Course/Module Title	ECTS	Semester
FOM3520	**FOOD MICROBIOLOGY**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	3	63	62
Description			
The Food Microbiology module explores the role of microorganisms in food production, preservation, and safety. Students will study beneficial and harmful microorganisms, their interactions with food, and the implications for human health and food quality. The course emphasizes both theoretical concepts and practical applications, preparing students for careers in food science, safety, and related fields.			

Module 32

Code	Course/Module Title	ECTS	Semester
FOB3530	**FOOD BIOCHEMISTRY**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Food Biochemistry module examines the chemical and biochemical processes that occur in food, focusing on the composition, structure, and function of macromolecules such as carbohydrates, proteins, and lipids. Students will explore the biochemical pathways involved in food processing, preservation, and digestion, as well as the nutritional implications of food components.			

Module 33

Code	Course/Module Title	ECTS	Semester
DAC3540	**DAIRY CHEMISTRY**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Dairy Chemistry module focuses on the chemical composition, properties, and processing of milk and dairy products. Students will explore the biochemical components of dairy, including proteins, fats, carbohydrates, vitamins, and minerals, and their roles in quality, functionality, and nutrition. The module also covers the principles of dairy processing, storage, and the biochemical changes that occur during these processes.			

Module 34

Code	Course/Module Title	ECTS	Semester
HUN3550	**HUMAN NUTRITION**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Human Nutrition module explores the fundamental principles of nutrition and its impact on human health and well-being. Students will examine the role of macronutrients and micronutrients, dietary guidelines, and the physiological and biochemical processes involved in digestion, absorption, and metabolism. The module emphasizes the importance of nutrition across the lifecycle and its implications for disease prevention and health promotion.			

Module 35

Code	Course/Module Title	ECTS	Semester
CEC3560	**CEREAL CHEMISTRY**	5.00	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Cereal Chemistry module delves into the chemical composition, properties, and processing of cereal grains, including wheat, rice, corn, and oats. Students will explore the roles of various components such as starch, proteins, lipids, and dietary fibers, and their implications for food quality, functionality, and nutrition. The module emphasizes both theoretical concepts and practical applications in the cereal industry.			

Module 36

Code	Course/Module Title	ECTS	Semester
FMB3571	**FOOD MOLECULAR BIOTECHNOLOGY1**	4.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	52
Description			
The Food Molecular Biotechnology module explores the application of molecular biology and biotechnology techniques in the food industry. Students will examine the molecular basis of food production, preservation, and safety, as well as the role of biotechnology in enhancing food quality and developing new food products. The course emphasizes both theoretical knowledge and practical skills in molecular techniques relevant to food science.			

Module 37

Code	Course/Module Title	ECTS	Semester
DAM3580	**DAIRY MICROBIOLOGY**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Dairy Microbiology module focuses on the role of microorganisms in dairy production, processing, and safety. Students will study both beneficial and harmful microbes associated with dairy products, examining their impact on quality, flavor, and health. The module emphasizes the microbiological principles underlying dairy fermentation, spoilage, and the methods used to ensure product safety and quality.			

Module 38

Code	Course/Module Title	ECTS	Semester
FLE3590	**FOOD LABORATORY ENGINEERING**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Food Laboratory Engineering module provides an in-depth understanding of the principles and practices involved in the design, operation, and management of food laboratories. Students will explore various laboratory techniques, equipment, and safety protocols used in food analysis, quality control, and product development. The module emphasizes both theoretical concepts and practical applications relevant to the food industry.			

Module 39

Code	Course/Module Title	ECTS	Semester
FOC3600	**FOOD CHEMISTRY**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Nutritional Chemistry module examines the chemical composition of food and the biochemical processes involved in the digestion, absorption, and metabolism of nutrients. Students will explore macronutrients (carbohydrates, proteins, and fats) and micronutrients (vitamins and minerals), as well as their roles in human health and disease. The course emphasizes the molecular mechanisms underlying nutrition and the impact of dietary choices on overall health.			

Module 40

Code	Course/Module Title	ECTS	Semester
CPT3610	**CEREAL PROSESSING TECHNOLOGY**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Cereal Processing Technology module focuses on the techniques and technologies used in the processing of cereal grains, including wheat, rice, corn, and oats. Students will explore the entire cereal processing chain, from grain selection and preparation to milling, processing, and product development. The module emphasizes both the scientific principles and practical applications relevant to the cereal industry.			

Module 41

Code	Course/Module Title	ECTS	Semester
MPT3620	**MILK PROCESSING TECHNIQUES**	5.00	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Milk Processing Techniques module provides an in-depth exploration of the methods and technologies used in the processing of milk and dairy products. Students will study the physical, chemical, and microbiological principles underlying various processing techniques, as well as the impact of these techniques on product quality, safety, and shelf life. The course emphasizes both theoretical knowledge and practical applications relevant to the dairy industry.			

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, presentation, and communication skills through a series of focused discussions and presentations on contemporary topics in food science and technology. Students will engage with experts from academia and industry, participate in discussions, and present their own research or case studies. The module aims to foster a collaborative learning environment and encourage the application of theoretical knowledge to real-world challenges in the food sector.			

Module 43

Code	Course/Module Title	ECTS	Semester
FPE4630	FOOD PACKAGING ENGINEERING	3	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12
Description			
The Food Packaging Engineering module explores the principles and technologies involved in the packaging of food products. Students will examine the role of packaging in preserving food quality, safety, and shelf life, as well as its impact on consumer acceptance and sustainability. The course emphasizes both the scientific and engineering aspects of food packaging materials, design, and processes.			

Module 44

Code	Course/Module Title	ECTS	Semester
FPE4641	**FOOD PROCESSING ENGINEERING1**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Food Processing Engineering I module provides a foundational understanding of the principles and technologies used in the processing of food. Students will explore various food processing methods, unit operations, and the engineering principles underlying these processes. The module emphasizes both the scientific concepts and practical applications relevant to the food industry.			

Module 45

Code	Course/Module Title	ECTS	Semester
DPE4651	**DAIRY PROCESSING ENGINERING1**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Dairy Processing Engineering I module provides a comprehensive introduction to the principles and technologies involved in dairy processing. Students will study the unit operations and engineering principles specific to the dairy industry, focusing on the production, processing, and preservation of milk and dairy products. The module emphasizes both theoretical concepts and practical applications relevant to dairy processing.			

Module 46

Code	Course/Module Title	ECTS	Semester
THN4660	**THERAPEUTIC NUTRITION**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Therapeutic Nutrition module explores the role of nutrition in the prevention and management of diseases. Students will study the relationship between diet and health, focusing on how specific dietary interventions can support the treatment of various medical conditions. The course emphasizes evidence-based approaches and practical applications in clinical settings.			

Module 47

Code	Course/Module Title	ECTS	Semester
FAM4670	**FOOD ANALYSIS and METROLOGY**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Food Analysis and Metrology module provides an in-depth exploration of the techniques and principles used in the analysis of food components and the measurement of food quality. Students will study various analytical methods for assessing food composition, safety, and quality, alongside the metrological principles that ensure accuracy and reliability in food testing.			

Module 48

Code	Course/Module Title	ECTS	Semester
MFT4680	**MEAT and FISH TECHNOLOGY**	5.00	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Meat and Fish Technology module provides a comprehensive examination of the technologies and practices involved in the processing, preservation, and quality assessment of meat and fish products. Students will explore the biological and chemical properties of meat and fish, the methods of processing, and the factors influencing product quality and safety.			

Module 49

Code	Course/Module Title	ECTS	Semester
AEP4291	**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 I module provides students with an opportunity to apply theoretical knowledge and engineering principles to a practical project in the field of agricultural engineering. Students will work independently or in teams to design, develop, and implement a project that addresses a specific challenge in agriculture, focusing on sustainability, efficiency, and innovation.			

Module 50

Code	Course/Module Title	ECTS	Semester
FQC4690	**FOOD QUALITY CONTROL**	3.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12
Description			
The Food Quality Control module focuses on the principles and practices involved in ensuring the quality and safety of food products. Students will learn about various quality control measures, regulatory standards, and methods for assessing food quality throughout the production process. The course emphasizes the importance of maintaining high quality in food products to meet consumer expectations and regulatory requirements.			

Module 51

Code	Course/Module Title	ECTS	Semester
FPE4642	**FOOD PROCESSING ENGINEERING2**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Food Processing Engineering II module builds upon the foundational concepts introduced in Food Processing Engineering I, focusing on advanced techniques and technologies used in the processing of various food products. Students will explore in-depth processing methods, equipment design, and the engineering principles that enhance food safety, quality, and sustainability.			

Module 52

Code	Course/Module Title	ECTS	Semester
DPE4652	**DAIRY PROCESSING ENGINEERING2**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Dairy Processing Engineering II module builds on the foundational knowledge gained in Dairy Processing Engineering I, focusing on advanced concepts and technologies in dairy product processing. Students will explore complex dairy processing operations, equipment design, and innovations that enhance product quality, safety, and sustainability in the dairy industry.			

Module 53

Code	Course/Module Title	ECTS	Semester
FCS4700	**FOOD CARE and STORAGE**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Food Care and Storage module examines the principles and practices essential for maintaining the quality and safety of food products throughout their storage and handling. Students will explore the factors that influence food spoilage, methods for effective food storage, and best practices for food care in both commercial and domestic settings.			

Module 54

Code	Course/Module Title	ECTS	Semester
FMB4572	**FOOD MOLECULAR BIOTECHNOLOGY2**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Food Molecular Biotechnology II module builds on the foundational concepts introduced in Food Molecular Biotechnology I, focusing on advanced techniques and applications of molecular biotechnology in food production and processing. Students will explore genetic, biochemical, and technological innovations that enhance food quality, safety, and sustainability.			

Module 55

Code	Course/Module Title	ECTS	Semester
FFT4710	**FUNCTIONAL FOOD TECHNOLOGY**	5.00	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Functional Food Technology module explores the development, production, and application of functional foods—foods that provide health benefits beyond basic nutrition. Students will examine the science behind functional ingredients, their mechanisms of action, and the regulatory and marketing considerations involved in their use.			

Module 56

Code	Course/Module Title	ECTS	Semester
AEP4321	**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 II module builds on the skills and knowledge gained in Agricultural Engineering Project I, providing students with the opportunity to engage in a more complex and comprehensive project within the field of agricultural engineering. Students will work independently or in teams to design, implement, and evaluate engineering solutions to specific challenges in agricultural production and sustainability.			

Contact

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