University of Mosul

First Cycle – Bachelor's degree (B. Sc) Plant Protection

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1. Overview

This catalogue is about the courses (modules) given by the program of Plant Protection to gain the Bachelor of Science degree. The program delivers (56) Modules with (6000) total student workload hours and 240 total ECTS. The module delivery is based on the Bologna Process.

2. 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	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 2

Code	Course/Module Title	ECTS	Semester
UOM1040	DEMOCRACY and HUMAN RIGHTS	2	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 LANGUAGE	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		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	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 40

Code	Course/Module Title	ECTS	Semester
ACE1020	AGRICULTURE CAREER ETHICS	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		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.			

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.

Code	Course/Module Title	ECTS	Semester
AET1040	AGRICULTRAL ENGINEERING TECHNIQUES TRANSFER	5	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.			

Code	Course/Module Title	ECTS	Semester
UOM1011	ARABIC LANGUAGE	2	2
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			

Code	Course/Module Title	ECTS	Semester
BSS1050	BIOSAFETY and SECURITY	3	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.			

Code	Course/Module Title	ECTS	Semester
AGS1060	AGRICULTURAL STATISTICS	5	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	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.			

Code	Course/Module Title	ECTS	Semester
AGI1080	AGRICULTURAL INFORMATICS	5	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.			

Code	Course/Module Title	ECTS	Semester
SUD1090	SUSTANIBLE DEVELOPMENT	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		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.

Code	Course/Module Title	ECTS	Semester
AMT1100	AGRICULTURAL MARKETING TECHNIQUES	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		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.			

Code	Course/Module Title	ECTS	Semester
UOM1012	ARABIC LANGUAGE2 2	2	1
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.			

Code	Course/Module Title	ECTS	Semester
UOM2050	The CRIMES of the BATH REGIME in IRAQ	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		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.			

Code	Course/Module Title	ECTS	Semester
IPM2110	INTEGRATED PEST MANAGEMENT	5	1
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.			

Code	Course/Module Title	ECTS	Semester
AEM2120	AGRICULTRAL ENGINEERING PROJECT MANAGEMENT	6	1
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.			

Code	Course/Module Title	ECTS	Semester
APT2130	AGRICULTURAL PRODUCTION MECHANIZATION TECHNIQUES	5	1
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.			

Code	Course/Module Title	ECTS	Semester
APT2140	AGRICULTURAL PRODUCTION TECHNOLOGIES	5	1
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.			

Code	Course/Module Title	ECTS	Semester
FTP2150	FOOD TECHNOLOGIES and HEALTH AGRICULTRAL PRODUCTS	5	1
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.			

Code	Course/Module Title	ECTS	Semester
UOM2022	ENGLISH LANGUAGE2	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		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.

Code	Course/Module Title	ECTS	Semester
UOM2032	COMPUTER SKILLS2	3	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
	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

Code	Course/Module Title	ECTS	Semester
DAE2160	DESIGN AND ANALYSIS of EXPERIMENTS	5	2
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.

Code	Course/Module Title	ECTS	Semester
DPF2170	DESIGN and PLANNING of AGRICULTURAL FACILITIES	5	2
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.			

Code	Course/Module Title	ECTS	Semester
BEI180	BENEFICIAL INSECTS	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The general objective of the course is to provide general information about beneficial insects with a focus on the most important modern techniques in their breeding, knowledge of their products and how to employ them in the labor market to benefit from them in increasing the individual's income. In addition, the basic knowledge of beneficial insects that will be covered in this lesson includes the effect of beneficial insects on plants and the environment, their types, methods of propagating beneficial insects according to modern techniques, their products, and general strategies for managing the most important diseases that affect beneficial insects and how to identify, diagnose and treat them will also be discussed. At the end of the course, the student will be able to identify the types of beneficial insects and choose the appropriate ones for breeding and their life cycle, and to understand modern techniques in breeding beneficial insects and the role of beneficial insects in preserving the environment and understanding how to deal with beneficial insects and benefit from their products and employ them in the labor market.			

Code	Course/Module Title	ECTS	Semester
AWE2210	AGRICULTURAL WASTE TREATMENT ENGINEERING	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
AGM2220	AGRICULTURAL MICROBIOLOGY2	5	2
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.			

Code	Course/Module Title	ECTS	Semester
RES3210	REMOTE SENSING	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	2
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
AGC3500	AGRICULTURE CHEMISTRY	3	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
PLN3510	PLANT NEMATODE	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The overall objective of the course is to provide general information on plant nematodes with emphasis on the most important diseases caused by parasitic nematodes in agricultural crops. The basic knowledge of nematodes that will be covered in this course includes the morphology and body structure of nematodes as well as their anatomy. Their life cycles on their hosts, methods of classification and diagnosis, their interactions with host plants and their relationship to other pathogenic microorganisms, and identification of important groups of plant-parasitic nematodes will also be discussed. General strategies for the management of diseases caused by plant-parasitic nematodes and means of controlling them will also be discussed. At the end of the course, the student will be able to define nematodes, describe their morphology and anatomy, understand the biology and life cycle of nematodes, understand how plant-parasitic nematodes interact with host crops and infect, diagnose and differentiate common plant-parasitic nematodes based on morphology and symptoms of damage, identify plant-parasitic nematodes of economic importance, and understand different management approaches for controlling plant-parasitic nematodes.			

Code	Course/Module Title	ECTS	Semester
ENT3520	ENTOMOLOGY	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The General Entomology course aims to provide students with a comprehensive knowledge of the			

insect world, starting from their classification and anatomy to their role in the environment and their impact on agriculture and humans. Special emphasis will be placed on insects that harm plants and crops, their reproduction and spread mechanisms, the damage they cause, and how to control them. At the end of the course, the student will be able to: Define insects and describe their classification and anatomy. Understand the life cycle of different insects and their reproduction mechanisms. Also, identify insects that harm plants and their infection mechanisms. Diagnose the damage caused by insects to crops. In addition to comparing different methods of insect control and evaluating their effectiveness. Understand the importance of beneficial insects in the ecosystem. Finally, apply the acquired knowledge in agricultural pest management.

Code	Course/Module Title	ECTS	Semester
PMC3530	PEST MANAGEMENT under PROTECTED CULTIVATION	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			

Training on methods of controlling plant pests, diseases and weeds (quarantine, agricultural,

physical, biological and chemical) with detailed and practical information based on examples Training on methods of management (quarantine, agricultural, physical, biological and chemical) against plant pests,

such as insects, mites, nematodes, rodents and others with detailed and practical information based on examples Giving basic information on controlling agricultural pests Quarantine practices

The use of chemicals within the framework of good agricultural practices against agricultural pests and giving

Basic information on the use of mechanical control methods for agricultural pests

Code	Course/Module Title	ECTS	Semester
BPD3540	BACTERIAL PLANT DISEASES	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**

2	2	63	62
The overall objective of the course is to provide general information about plant bacteriology with emphasis on the most important diseases caused by parasitic bacteria in agricultural crops. The basic knowledge of bacteriology that will be covered in this course includes plant pathogenic bacteria, their structure and types. Also discussed are their life cycles on their hosts and methods of classification and diagnosis, their interactions with host plants and their relationship with other pathogenic microorganisms, identification of important groups of plant-parasitic and non-plant-pathogenic bacteria that are used in biological control programs against plant pathogens. General strategies for the management of diseases caused by plant-parasitic bacteria and means of controlling them will also be discussed. At the end of the course, the student will be able to identify, describe morphologically and biochemically characterize bacteria, understand the biology and life cycle of bacteria, understand how plant pathogenic bacteria interact with host crops and infection, diagnose and differentiate common plant pathogenic bacteria based on their diagnostic characteristics and symptoms of damage, identify non-plant pathogenic bacteria of economic importance, and understand different management approaches to control plant pathogenic bacteria.			

Code	**Course/Module Title**	**ECTS**	**Semester**
MYC3550	MYCOLOGY	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	**Course/Module Title**	**ECTS**	**Semester**
UPM3560	URBAN PEST MANAGEMENT	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
1	2	48	52
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
ITS3570	INSECT TAXONOMY SYSTEMS	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The insect taxonomy method is a scientific system used to organize and name insects based on their anatomical, biological, and genetic characteristics. This method is based on a detailed study of the external and internal structures of insects, such as wings, legs, and mouthparts, as well as reproductive and developmental patterns. DNA analysis is also used to understand the evolutionary relationships between different species. Classification includes dividing insects into orders, such as the order Lepidoptera (butterflies and moths), and the order Coleoptera (beetles), and each order is divided into families, species, and subspecies. This system aims to facilitate the study of the vast diversity of insects, identify species that may be harmful or beneficial to the environment and agriculture, and enhance the understanding of the evolutionary relationships between them, which contributes to biology and environmental sciences in general.			

Code	Course/Module Title	ECTS	Semester
CMT3580	COMMERCIAL MUSHROOM PRODUCTION TECHNOLOGY	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
PDM3590	POST-HARVEST DISEASE MANAGEMENT	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester

PDE3600	PLANT DISEASES and EPIDEMIOLOGY	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
The general objective of the course is for the learner to be able to understand the disease and the information required to name the pathogens. How to describe plant diseases and identify the stages of disease development and the relationship between the parasite and the host. Distinguish between types of plant pathogens. Full knowledge of the ways in which pathogens attack their plant hosts. Identify the defenses used by plants against pathogens. Identify the physiological functions that are affected by pathogen attacks. The suitability of environmental factors for the spread of pathogens and what are the epidemiological aspects of plant pathogens will also be discussed. A comprehensive study of the various types of biological, chemical and agricultural control of plant pathogens. At the end of the course, the student will be able to distinguish between plant pathogens: fungi, bacteria, nematodes, viruses, etc., and distinguish between living (parasitic) and non-living (non-parasitic) pathogens, how to isolate and diagnose plant pathogens, what are the symptoms and signs of disease caused by plant diseases with their life cycles, and able to understand the different management approaches to combat plant pathogens.			

Code	**Course/Module Title**	**ECTS**	**Semester**
BIO3610	BIOSTATISTICS	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	**Course/Module Title**	**ECTS**	**Semester**
SEM3260	SEMINARS	1	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
		17	8
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
SPM4620	STORES PEST TECHNOLOGY AND CONTROL METHODS	3	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
CPT4630	CROP PESTS MANAGEMENT TECHNOLOGY	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
The Crop Pest and Control Technology approach is a scientific and applied framework that aims to protect agricultural crops from pests, including insects and plant diseases. This approach is based on a careful study of the behavior and reproduction of these pests and their impact on crops, and includes several strategies to reduce their negative impact and maintain agricultural productivity. Pest control technology includes several methods, including: Biological control: Using natural organisms (such as predatory insects and parasites) to attack pests. Chemical control: Using specific and effective pesticides against pests, while trying to reduce environmental damage. Agricultural control: Applying agricultural techniques such as crop rotation and selecting resistant varieties to reduce the chances of pest spread. Modern technology: Such as biotechnologies and gene editing, and using digital tools such as remote sensing and geographic information systems (GIS) to monitor pests and predict their spread. The approach seeks to achieve integrated pest management (IPM) that reduces environmental damage and maintains sustainable and healthy production.			

Code	Course/Module Title	ECTS	Semester
WCT4320	WEED CONTROL TECHNOLOGY	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			

Code	Course/Module Title	ECTS	Semester
NIP4730	NON- IMSECT ANIMAL PESTS	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
The course of non-insect animal pests aims to provide the student with comprehensive knowledge about the various types of animal pests that infect agricultural crops and animals, which are not classified as insects. The course also aims to train the student to identify these pests, study their damage, and develop effective strategies to control and protect crops and animals. At the end of the course, the student will be able to identify the types of non-insect animal pests and understand the life cycle of these pests. Study the damage caused by these pests and develop effective control strategies. He will also be able to assess the risks posed by these pests and apply theoretical knowledge practically			

Code	Course/Module Title	ECTS	Semester
PPM4640	PESTICIDE PREPARATION and MANAGEMENT	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
BIT4650	BIOCONTROL TECHNOLOGIES	5	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			

Summary of Biological Control Course
This course aims to provide students with comprehensive knowledge of the foundations and techniques of biological control, focusing on environmentally friendly methods to control agricultural pests and disease-causing organisms. The course covers the basic principles of biological control, including the different types of natural enemies, such as predatory insects, parasites, and pathogenic microorganisms that target pests. It will also explore techniques for isolating and breeding these natural enemies and their applications in agricultural fields, highlighting the effects of biological control on the ecosystem, interactions with hosts, adaptation mechanisms, and strategies to enhance their effectiveness.
By the end of the course, students will be able to:
1. Define the concept of biological control and explain its importance as a sustainable approach to managing agricultural pests.
2. Understand the different types of natural enemies and the role of each in reducing pest populations.
3. Identify and evaluate suitable biological control agents for managing specific types of agricultural pests.
4. Comprehend the methods and techniques for breeding biological control agents and releasing them in agricultural environments.
5. Analyze the environmental impacts of biological control and understand its interactive relationships within the ecosystem.
6. Apply integrated pest management strategies by using biological control techniques and promoting sustainable agricultural practices.

Code	Course/Module Title	ECTS	Semester
AEP4290	AGRICULTRUAL ENGINEERING PROJECT1	2	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
	3	47	3
Description			

This section includes a description of the module, 100-150 words

Code	Course/Module Title	ECTS	Semester
AQL4660	AGRICULTURAL QUARANTINE TECHNOLOGIES and LEGISLATION	3	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	12
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
PLV4670	PLANT VIRUSES	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
IET4680	INSECT ECOLOGY TECHNIQUES	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	Course/Module Title	ECTS	Semester
OPT4690	ORCHARD PESTS MANAGEMENT TECHNOLOGY	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			

This section includes a description of the module, 100-150 words			
Code	**Course/Module Title**	**ECTS**	**Semester**
AGM4700	AGRICULTURAL MITES	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	**Course/Module Title**	**ECTS**	**Semester**
SAT4310	SMART AGRICULTURAL TECHNIQUES	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	63	62
Description			
This section includes a description of the module, 100-150 words			

Code	**Course/Module Title**	**ECTS**	**Semester**
AEP4292	AGRICULTRUAL ENGINEERING PROJECT2	2	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
	3	47	3
Description			
This section includes a description of the module, 100-150 words