Tikrit university

First Cycle – Bachelor's Degree (B.Sc.) –Science Microbiology

بكالوريوس –علوم-علوم – علم الاحياء المجهرية

Table of Contents

1. Overview

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

نظره عامه

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج علوم الحياة للحصول على درجة بكالوريوس العلوم – علم الاحياء المجهرية . يقدم البرنامج. يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2023-2024

Module 1

Code	Course/Module Title	ECTS	Semester
Bio-1101	Zoology	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	79	96
Description			
Zoology is what is concerned with the study of everything related to these organisms in terms of structure, function, methods of coexistence among them, and the transmission of genetic material, as it includes many branches that deal with the study of that in detail. Basic principles for what will be taught in the subsequent stages of the branches referred to above.. Animals are considered one of the most important types of living organisms that live on the surface of the globe at all, as they together form an integrated kingdom that contains large numbers that extend over the entire surface area of the globe, and that they It lives side by side with humans and plants, influencing and being affected by them.			

Module 2

Code	Course/Module Title	ECTS	Semester
Bio-1102	Analytical Chemistry	7	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	79	96
Description			
Learn about the nature of chemicals, their classification, states, and the structure of the atom. Identifying analytical chemistry, its importance?, Descriptive and quantitative analysis methods. Learn about volumetric analysis and its types.			

Module 3

Code	Course/Module Title	ECTS	Semester
Bio-1103	General Mathematics	4	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		63	62
Description			
The curriculum deals with computers and mathematical operations. Teaching mathematics aims to develop ways and methods of thinking for the learner and how to deal with problems and solve them. The possibility of calculations using various mathematical operations.			

Module 4

Code	Course/Module Title	ECTS	Semester
Bio-1104	Biophysics	4	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	48	51
Description			
What is medical physics and its branches. Understand the relationship of physics to medicine and the life sciences. Learn about the applications of medical physics.			

Module 5

Code	Course/Module Title	ECTS	Semester
UNI-1105	Human Rights and Democracy	4	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		40	36
Description			
The curriculum deals with human rights. Women's rights ,Child Rights ,animals rights ,International agreements ,Universal Declaration of Human Rights ,UNICEF ,UNESCO and Red Cross Organization.			

Module 6

Code	Course/Module Title	ECTS	Semester
UNI-1106	Arabic Language	4	1
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		56	100
Description			
The curriculum deals with the rules of the Arabic language. The possibility of Arabization. The possibility of writing a piece of construction in an exact linguistic form.			

Module 7

Code	Course/Module Title	ECTS	Semester
Bio-1217	General Botany	7	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	44	56
Description			
Introduce students in the first stage on the basics of botany and plant cell that contains the components of plant tissues and internal members of the plant and its components and some of the processes that occur in the plant, including photosynthesis and respiration and cell division in plant.			

Module 8

Code	Course/Module Title	ECTS	Semester
Bio-1218	Organic Chemistry	7	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**

2	2	79	96
Description			
Knowing the type of organic compound based on the existing active group, as well as identifying the interactions and methods of preparing organic compounds, with a brief summary of methods for their diagnosis. Determine the site of an organic reaction by knowing the reactants and products of the reaction . Determine the reaction conditions required for the preparation of organic compounds. Naming organic compounds based on the law of the International Union of Pure and Applied Chemistry.			

Module 9

Code	**Course/Module Title**	**ECTS**	**Semester**
Bio-1209	Biostatistics	5	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		79	96
Description			
The curriculum covers learning the basics of statistical science, rules and concepts, with a solution to applied problems with a discussion of descriptive statistics and probability theory through solving problems after the theoretical lecture.			

Module 10

Code	**Course/Module Title**	**ECTS**	**Semester**
Bio-12010	Safety and biosecurity	3	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		63	62
Description			
BSS courses cover a variety of biosafety and biosecurity topics that address multiple regulations, standards, and guidelines. They are intended to complement the hands-on training and experience			

that those handling biohazards obtain from their principal investigators, laboratory managers, and fellow researchers.

Module 11

Code	Course/Module Title	ECTS	Semester
UNI-12011	Computer Science	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	2	48	27
Description			

Educating the student to be familiar with the basic rules for dealing with the computer and managing it to help him in completing projects, printing matters, preparing statistics and graphs, creating presentations, designing engineering diagrams, etc., and the emergence of the Internet as a means of communication available to all, it has become very necessary for the student to learn to use the computer because of the role of the Internet in many fields Including education, scientific research, trade and marketing through correspondence Electronic web pages and electronic speech.

Module 12

Code	Course/Module Title	ECTS	Semester
UNI-12012	English Language	4	2
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2		64	36
Description			

This course is a basic grammar course that helps students to improve their punctuation, capitalization, sentence structure, etc. The course also includes nouns, pronouns, definite and indefinite articles, adjectives and adverbs. The exercises and tests will help them increase their skills in these areas. The students are also taught to practice different forms of sentences such as affirmative and negative. Also, it will help them discover their weak and strong areas in grammar. As a result of the increased basic grammar skills, students will be able to write more effectively and speak more confidently.

Module 13

Code	Course/Module Title	ECTS	Semester
Bio-23113	Biochemistry I	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	63	37
Description			
General introductory course of biochemistry. This part includes coverage of chemical concepts related to vitality (chemical bonds, functional groups, chemical balance, and energy), building blocks for cell components, water structure and properties, regulators, structure and properties of amino acids, peptide bond, protein structure, structural and functional classification of proteins, and an introduction. About enzymes and metabolism.			

Module 14

Code	Course/Module Title	ECTS	Semester
Bio-23014	Plant Anatomy	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	77	48
Description			
Introducing the student to the basics of plant anatomy, which includes the components of the plant cell, plant tissues, plant organs and their internal components. Giving information to a student of the Faculty of Science - the second stage, the basics of plant anatomy and identifying the internal components of plant organs.			

Module 15

Code	Course/Module Title	ECTS	Semester

Bio-23015	Invertebrates	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	77	48
Description			
This curriculum covers the basics of studying invertebrate animal groups of all microscopic and visible types with the naked eye, with a focus on free-living species, whether in the aquatic environment or on land.			

Module 16

Code	**Course/Module Title**	**ECTS**	**Semester**
Bio-23016	Alge	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	77	48
Description			
This curriculum covers the basics of studying algae, its types and forms. And the types of reproduction and life cycles of these algae, and their classification and the principles adopted in their classification and the relationships between the types of algae and addressing the environments of these algae and their presence in different environments according to their nature and adaptation for living.			

Module 17

Code	**Course/Module Title**	**ECTS**	**Semester**
Bio-23017	Entomology	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	77	48

Description
Introducing and teaching the student entomology from a practical point of view and everything related to insects in terms of body structure, internal anatomy and classification, in addition to methods of collecting, killing and preserving them.

Module 18

Code	Course/Module Title	ECTS	Semester
Bio-23018	Microbiology I	5	3
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	62	63
Description			
Learn about the nature of general microorganisms. To know the methods of reproduction of microorganisms.			

Module 19

Code	Course/Module Title	ECTS	Semester
Bio-24219	Clinical Chemistry	6	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	94	56
Description			
Comprehensive understanding of the pathophysiology of many diseases, as well as the ability to make an appropriate diagnosis of clinical disorders and understand the pathogenesis mechanisms and laboratory changes associated with some lesions, and assess the importance of these changes in the follow-up of the course of the disease.			

Module 20

Code	Course/Module Title	ECTS	Semester
Bio-24120	Plant Taxonomy	5	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	46
Description			
Introducing students to the basics of plant taxonomy, which includes how to classify plants, classification methods, and identification of some plant families. Giving information to the student of the Faculty of Science - the second stage, the basics of plant classification, identifying the types of classification methods, and identifying some plants and the various plant families.			

Module 21

Code	Course/Module Title	ECTS	Semester
Bio-24121	Parasitology	5	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	46
Description			
This approach covers the study of animal parasites of all kinds, microscopic and visible with the naked eye, with a focus on species that infect humans (of medical importance).			

Module 22

Code	Course/Module Title	ECTS	Semester
Bio-24122	Entomology	5	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	46

Description
The curriculum deals with the study of applied insects. Definition of entomology, the reality of insects in the animal kingdom, the division of arthropods, their general characteristics, and their classification Class Insects General characteristics of insects.

Module 23

Code	Course/Module Title	ECTS	Semester
Bio-24123	Microbiology II	6	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	94	56
Description			
Learn about the nature of general microorganisms. To know the methods of reproduction of microorganisms.			

Module 24

Code	Course/Module Title	ECTS	Semester
Bio-24124	Argegonat	5	4
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	76	50
Description			
Teaching students of the second stage about low plants in terms of their characteristics, types, methods of reproduction, and the internal anatomy of some plants belonging to them. Study of corneal mosses, study of anthocera plant . Study of true mosses, study of the sphagnum plant.			

Module 25

Code	Course/Module Title	ECTS	Semester
Bio-35025	Cell Biology	4	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	40
Description			
Cell biology is one of the basic branches of life sciences.. All living organisms are single or multicellular organisms, and this science is concerned with the study of the cell as an integrated unit (its structure and the structure of its organelles) and the chemical reactions that take place in it, as well as the study of its life cycle, function and reproduction And its molecular composition as the building unit and the basic function of the living organism. The study of cell life science is of great importance, both from the academic and applied aspects. The cell is to innovate new techniques in research, and related innovations, including laboratory tools and devices.			

Module 26

Code	Course/Module Title	ECTS	Semester
Bio-35026	Ecology	6	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	90
Description			
This curriculum covers the basics of studying the environment, types of pollution, their risks and ways to treat them, based on knowledge of the ecosystem and its components, the types of environmental communities that exist on land and in the water (running and stagnant, rivers, lakes and estuaries), the concept of the center and the environmental habitat of living organisms, the way they coexist and the nutritional relationships among them, and productivity and transmission or flow Energy through food chains and the food web, or what we call food pyramids and their types, and which one is better in achieving or representing the flow of energy through living organisms, as well as addressing in the curriculum the terrestrial geochemical cycles of the circulation of materials and elements in nature, which represent sedimentary, water and air cycles, determinants and tolerance limits for the spread of			

organisms live.

Module 27

Code	Course/Module Title	ECTS	Semester
Bio-35027	Histology	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	65
Description			
Histology is the basic tool for biology and medicine.. It is a study of the microscopic anatomy of cells that make up tissues, through which the relationship between the microscopic structure of these cells and the functions they perform becomes clear, and through the lectures to be taught, basic histopathology will be discussed in some detail and then zigzagging on the tissue The constituent organs of the organism's body systems, as well as a summary of the subject of the cell and its components as the structural and functional unit of the organism's body, which, with its assemblies, based on its shape and the function it performs, will form the tissue.			

Module 28

Code	Course/Module Title	ECTS	Semester
Bio-35028	Mycology I	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	61	64
Description			
This curriculum covers the study of the basic concepts of fungi, their economic importance in different aspects of life, and methods of classifying these organisms.			

Module 29

Code	Course/Module Title	ECTS	Semester
Bio-35029	Microbiology physiology	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	46
Description			
Microbiology physiology is one of the sciences emanating from the science of cell life as well as cloning, and the progress of microbiology physiology relied on the innovation of new techniques in research, and the associated innovations that included laboratory tools and devices.			

Module 30

Code	Course/Module Title	ECTS	Semester
Bio-35030	Microbiology environment	5	5
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	46
Description			
The study of the science of biotechnology is of great importance, whether from the academic or applied aspects.. The science of life technologies is one of the sciences emanating from the science of life of biotechnologies as well as cloning, genetic imprinting and genetic engineering. The progress of cell life science has depended on the innovation of new techniques in research, and related It includes innovations that included laboratory tools and devices.			

Module 31

Code	Course/Module Title	ECTS	Semester
Bio-36131	Genetics	5	6

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	3	60	65
Description			
The curriculum deals with the study of genetics from the structure and transmission of genetic material. Providing students with academic and applied information about genetics.			

Module 32

Code	Course/Module Title	ECTS	Semester
Bio-36132	Pollution	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	65
Description			
This curriculum covers the basics of studying the environment, types of pollution, their risks and ways to treat them, based on knowledge of the ecosystem and its components, the types of environmental communities that exist on land and in the water (running and stagnant, rivers, lakes and estuaries), the concept of the center and the environmental habitat of living organisms, the way they coexist and the nutritional relationships among them, and productivity and transmission or flow Energy through food chains and the food web, or what we call food pyramids and their types, and which one is better at achieving or representing the flow of energy through living organisms.			

Module 33

Code	Course/Module Title	ECTS	Semester
Bio-36133	Biological treatment	4	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	40
Description			

Describes wastewater, its composition, the method of using microorganisms to treat water and get rid of the pollutants present in it, and the most important mechanisms that occur within the organism to digest all the pollutants present in the water.

Module 34

Code	Course/Module Title	ECTS	Semester
Bio-36034	Bacterial toxins	4	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	40
Description			
About the statement of the seriousness of microbial toxins in food, as microbial toxins are defined as toxins produced by microorganisms, including bacteria, fungi, and algae. Microbial toxins promote infection and disease by directly damaging host tissues and disrupting the immune system. Some bacterial toxins such as the neurotoxin botulinum toxin are the most powerful known natural toxins. Many microorganisms create toxins, the most common of which are bacterial toxins resulting from bacteria and mycotoxins, aflatoxins.. Microbial poisoning is not limited to bacteria, but may occur from fungi, algae, or protozoa.			

Module 35

Code	Course/Module Title	ECTS	Semester
Bio-36035	Antibiotics	5	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	46
Description			
Definition of an antibiotic / Characteristics of an antibiotic / A brief history of an antibiotic. Penicillins and cephalosporins (b-lactam group). Tetracyclines Aminoglycosides Antibiotics. Ansamycins Macrolides antibiotics			

Module 36

Code	Course/Module Title	ECTS	Semester
Bio-36036	Hematology	6	6
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	71
Description			
Introduction to science of hematology. The normal Erythrocyte. Introduction to Erythron .Red blood cell production and removal. Hemoglobin, Structure, Synthesis, Iron metabolism, Oxygen transport. Erythrocyte metabolism, energy metabolism in the erythrocyte. The erythrocyte membrane. The normal Leukocyte, Introduction to white blood cell, Types of white blood cells, Leukocyte Functions: an overview. Hemostasis and coagulation.			

Module 37

Code	Course/Module Title	ECTS	Semester
Bio-47037	Molecular Biology	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	79	46
Description			
Synthesis and construction of DNA and RNA, detailing the central axiom of the central dogma, gene expression, its steps and control. Mutation and its types.			

Module 38

Code	Course/Module Title	ECTS	Semester
Bio-47038	Food Microbiology	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**

2	3	60	65
Description			
A brief history of food biology. Microorganisms in food. Sources of food contamination with microorganisms. General principles in foods and factors affecting their microorganisms.			

Module 39

Code	**Course/Module Title**	**ECTS**	**Semester**
Bio-47039	Pathological bacteria	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	65
Description			
Pathogenic bacteriology is one of the branches of medical microbiology, which is concerned with the study of bacteria that cause disease in humans.			

Module 40

Code	**Course/Module Title**	**ECTS**	**Semester**
Bio-47040	Viruses	6	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	90	60
Description			
Virology is a modern and important science, and it has a close relationship with human health, life, and animal and plant resources. Therefore, giving students the basics of this science and clarifying its ideas from all aspects, including the applied aspects, with examples.			

Module 41

Code	Course/Module Title	ECTS	Semester
Bio-47041	Classification of bacteria	5	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	77	48
Description			
Bacterial taxonomy is one of the branches of microbiology that deals with the study of bacteria that cause diseases in humans.			

Module 42

Code	Course/Module Title	ECTS	Semester
Bio-47042	Research Project	4	7
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
	2	33	67
Description			
The subject of the research project is considered one of the ancient and approved curricula in most of the academic courses of the humanities and scientific faculties, as it aims to introduce the student to the terminological concept of scientific research and to identify its methods and methods of adopting them in writing research in general and graduation research in particular to plan for himself a research methodology that he adopts in the event of his attempt to create a research Outside the academic framework, we also focus in our study on how to use some of these approaches in an applied manner, such as building hypotheses, imagining the research model, drawing the relationships and influence between variables, methods of referring to sources, formulating conclusions and recommendations, and the logical sequence in the transition between topics and to serve the hypotheses. To be discussed research completed at the end of the academic year.			

Module 43

Code	Course/Module Title	ECTS	Semester
Bio-48043	Genetics Engineering	4	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	50	50
Description			
Basic concepts of genetic engineering (cloning), types of cleavage enzymes, types of cloning vectors, linking DNA segments together, crossbreeding and detection of new combinations.			

Module 44

Code	Course/Module Title	ECTS	Semester
Bio-48044	Immunity	4	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	40
Description			
In this course, the student studies laboratory and laboratory applications in the field of clinical immunology and serology, in order to evaluate the efficiency of the patient's immune system and calibrate different vaccines.			

Module 45

Code	Course/Module Title	ECTS	Semester
Bio-48045	Industrial microbiology	4	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	40

Description
An introduction and a brief history of industrial microbial fermentation. Important microorganisms in industrial fermentation. Requirements for industrial microbial fermentation, including (microorganism, raw material, fermentation conditions, product). Initiators or inoculants used in industrial fermentations. General principles of anaerobic fermentation, including their chemistry and types.

Module 46

Code	Course/Module Title	ECTS	Semester
Bio-48046	Pathological analyses	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	70	55
Description			
Pathological analyzes are considered one of the important sciences in our lives, due to their various applications in various aspects of life. This science is concerned with studying pathological analyzes, including examining body fluids, examining enzymes, and hormones.			

Module 47

Code	Course/Module Title	ECTS	Semester
Bio-48047	Microbiological inheritance	5	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	60	65
Description			
Chemical basis of heredity. The structural system of genetic material in living cells. Genetic material duplicates the origin and properties of DNA. Reproduction of genetic material: RNA formation, types and characteristics. Translating genetic information and making protein and genetic code			

Module 48

Code	Course/Module Title	ECTS	Semester
Bio-48048	Medicinal fungi	6	8
Class (hr/w)	**Lect/Lab./Prac./Tutor**	**SSWL (hr/sem)**	**USWL (hr/w)**
2	3	78	72
Description			
The field of medical mycology is a branch of medical science in which Masters graduates learn more about human fungal infections, their diagnosis, treatment and prevention, and the importance of fungi from a medical and health perspective. Graduates help teach practical medical mycology to undergraduates, advance the frontiers of knowledge, and promote public health by providing laboratory diagnosis of fungal infections.			

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