

Alkarkh university of sciences جامعة الكرخ للعلوم



First Cycle – Bachelor's degree (B.Sc.) – Environmental Health Sciences

بكالوريوس علوم - علوم الصحة البيئية



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1. Overview

This catalogue is about the courses (modules) given by the program of environmental health science to gain the Bachelor of Science degree. The program delivers (48) 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 الصحة البيئية للحصول على درجة بكالوريوس العلوم. يقدم البرنامج (48) مادة دراسية، على سبيل المثال، مع (٦٠٠٠) إجمالي ساعات حمل الطالب و ٢٤٠ إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على عملية بولونيا.

2. Undergraduate Courses 2024-2025

Module 1

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| KUS1101 | Mathematics | 5 | 1 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 77 |
| Description | | | |
| the study of basic and advanced mathematical concepts. Mathematics courses deal with theoretical knowledge about number systems, data handling, algebra, geometry, trigonometry, etc. | | | |

Module 2

| Code | Course/Module Title | ECTS | Semester |
|--|---------------------------------|---------------|-------------|
| KUS1102 | Fundamental of Computer Science | 3 | 1 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 11 |
| Description | | | |
| the study of computers and computing, including their theoretical and algorithmic foundations, hardware and software, and their uses for processing information. | | | |

Module 3

| Code | Course/Module Title | ECTS | Semester |
|--|----------------------------|---------------|-------------|
| KUS1103 | Democracy and Human Rights | 2 | 1 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | - | 33 | 17 |
| Description | | | |
| تهدف المادة إلى بيان أهمية الحقوق الاصلية للصيقة بالانسان، التي تتفق مع فطرته، والتي يقبلها العقل المجرد، والتي لا تختلف باختلاف الزمان والمكان، وهذه هي حقوق الانسان. | | | |

Module 4

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| CRE1104 | analytic chemistry | 6 | 1 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| Study the principles of analytical chemistry and provides how these principles are applied in chemistry and related disciplines - especially in life sciences, environmental sciences and geochemistry. | | | |

Module 5

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| CRE1105 | physics | 7 | 1 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2/1 | 79 | 96 |
| Description | | | |
| study of the natural world, covering the behavior of matter and energy. It explores the fundamental laws and principles that govern the universe, such as motion, energy, force, and gravity. | | | |

Module 6

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS1106 | ecology | 7 | 1 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2/1 | 79 | 96 |
| Description | | | |
| Ecology courses offered through Coursera help learners gain knowledge on Ecology ecosystems and dynamics; how scientists study ecosystems; plant biology and biological research; what defines us as humans; the scientific, economic, and socio-political dimensions of ecosystems; and more. | | | |

Module 7

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| EHS1207 | human cytology | 7 | 2 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2/1 | 79 | 96 |
| Description | | | |
| This course explores the structure and function of human cells, emphasizing the cellular basis of life and the mechanisms that maintain cellular homeostasis. Students will learn about the cellular organization, cell cycle, signal transduction, and the relationship between cell dysfunction and diseases. The course includes lectures and laboratory work. | | | |

Module 8

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| CRE1208 | organic chemistry | 6 | 2 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| Description of the basics and principles of organic chemistry, the quality of chemical compounds, and the basis for their formation and composition. | | | |

Module 9

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| CRE1209 | Geology | 6 | 2 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <p><i>When you study geology, you look at the processes that change Earth, like volcanic eruptions, landslides, earthquakes, and floods. You also examine the products that Earth's materials produce, such as metals, ores, and petroleum</i></p> | | | |

Module 10

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| KUS12010 | Arabic Language | 2 | 2 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | | 33 | 17 |
| Description | | | |
| <p>توظيف المفردات الفصيحة في الصياغة الاكاديمية للبحوث العلمية مترجمة بنظيرها الفصيح التمكّن من كتابة البحوث والمقالات ذات المحتوى العلمي الصّرف باللغة العربية الفصحى</p> | | | |

Module 11

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| KUS12011 | English language | 2 | 2 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | | 33 | 17 |
| Description | | | |
| <p>Understand and use basic English vocabulary and expressions related to daily life, including greetings, introductions, and common objects.</p> | | | |

Module 12

| Code | Course/Module Title | ECTS | Semester |
|---|--------------------------------|---------------|-------------|
| EHS12012 | environmental health principle | 7 | 2 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2/1 | 79 | 96 |
| Description | | | |
| <p><i>This course provides an overview of the key concepts, issues, and methods in environmental health. It focuses on understanding the interactions between the environment and human health, including the assessment and management of environmental risks. Students will explore various environmental hazards and their impacts on public health, as well as the role of environmental policies and practices in promoting health and sustainability.</i></p> | | | |

Module 13

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS23013 | biostatistics | 4 | 3 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 52 |
| Description | | | |
| <p>Environmental Data Understanding: To equip students with an understanding of how to collect, analyze, and interpret environmental data using statistical methods.</p> | | | |

Module 14

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| ENV23014 | microbiology | 6 | 3 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <p>microbiology, study of microorganisms, or microbes, a diverse group of generally minute simple life-forms that include bacteria, archaea, algae, fungi, protozoa, and viruses. The field is concerned with the structure, function, and classification of such organisms and with ways of both exploiting and controlling their activities.</p> | | | |

Module 15

| Code | Course/Module Title | ECTS | Semester |
|---|--------------------------|---------------|-------------|
| EHS23015 | environmental toxicology | 6 | 3 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| Provide students with a comprehensive understanding of the interdisciplinary nature of environmental toxicology, including its connections to ecology, chemistry, and public health | | | |

Module 16

| Code | Course/Module Title | ECTS | Semester |
|--------------|-----------------------|---------------|-------------|
| KUS23016 | Baath crimes in Iraq | 2 | 3 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | | 33 | 17 |
| Description | | | |
| | | | |

Module 17

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS23017 | biochemistry | 6 | 3 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <i>Biochemistry is a sub-discipline of Chemistry & Biology. Biochemistry deals with the chemical processes within living organisms. Biochemistry courses are available as undergraduate, postgraduate & doctoral programs in top universities.</i> | | | |

Module 18

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS23018 | community health | 6 | 3 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 63 | 87 |
| Description | | | |
| <p>This course provides an overview of the principles and practices of community health. It covers the social, economic, and environmental factors that affect the health of communities and explores strategies for promoting health and preventing disease at the community level. Students will learn about the role of community health professionals, community health needs assessment, program planning, and evaluation. The course includes lectures, case studies, and fieldwork to provide students with practical experience in community health.</p> | | | |

Module 19

| Code | Course/Module Title | ECTS | Semester |
|--------------|-----------------------|---------------|-------------|
| CRE24019 | climate change | 5 | 4 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 77 |
| Description | | | |
| | | | |

Module 20

| Code | Course/Module Title | ECTS | Semester |
|--|------------------------|---------------|-------------|
| EHS24020 | management of disaster | 3 | 4 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | | 33 | 42 |
| Description | | | |
| <p>This course explores the principles, strategies, and practices of disaster management. It covers the entire disaster management cycle, including preparedness, response, recovery, and mitigation. Students will learn about different types of disasters, their impacts on communities and environments, and the roles of various stakeholders in disaster management. The course includes case studies, simulations, and practical exercises to provide students with real-world experience in disaster management.</p> | | | |

Module 21

| Code | Course/Module Title | ECTS | Semester |
|--------------|-----------------------|---------------|-------------|
| EHS24121 | human physiology | 5 | 4 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 61 |
| Description | | | |
| | | | |

Module 22

| Code | Course/Module Title | ECTS | Semester |
|--|-------------------------|---------------|-------------|
| EHS24022 | Environmental chemistry | 5 | 4 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 61 |
| Description | | | |
| <p><i>focuses on the presence and impact of chemicals in soil, surface water, and groundwater. Environmental chemists study how chemicals - usually contaminants - move through the environment. This is referred to as chemical "fate and transport". They also study the effects of these contaminants on ecosystems, animals, and human health.</i></p> | | | |

Module 23

| Code | Course/Module Title | ECTS | Semester |
|--|-------------------------|---------------|-------------|
| EHS24023 | environmental pollution | 6 | 4 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 63 | 87 |
| Description | | | |
| <p>In this lesson you will study about the major causes of pollution, their effects on our environment and the various measures that can be taken to control such pollutions</p> | | | |

Module 24

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| EHS24024 | immunology | 6 | 4 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <p>his course focuses on how various immune system components are integrated during the response to infectious agents, and how the system is naturally or artificially perturbed in clinical conditions, such as immunodeficiency, autoimmunity, and cancer therapies</p> | | | |

Module 25

| Code | Course/Module Title | ECTS | Semester |
|---|----------------------------|---------------|-------------|
| EHS35025 | radiation and human health | 4 | 5 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 52 |
| Description | | | |
| <p>This course explores the interactions between various types of radiation and human health. It covers the fundamentals of radiation physics, the biological effects of radiation exposure, radiation protection principles, and the use of radiation in medical applications. Students will learn about the risks and benefits associated with radiation exposure and the regulatory frameworks governing radiation safety.</p> | | | |

Module 26

| Code | Course/Module Title | ECTS | Semester |
|--|--------------------------------|---------------|-------------|
| EHS35026 | Occupational Health and Safety | 4 | 5 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 52 |
| Description | | | |
| <p>the science of the anticipation, recognition, evaluation and control of hazards arising in or from the workplace that could impair the health and well-being of workers, taking into account the possible impact on the surrounding communities</p> | | | |

Module 27

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS35027 | molecular biology | 7 | 5 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 111 |
| Description | | | |
| <p><i>Molecular biology is the study of proteins and nucleic acids and their role in the development, function, and replication of cells. Those cells may live within humans, animals, plants, or any other living organism. Molecular biologists work across a variety of disciplines, including vaccine development, biotechnology, and genetic modification. Their research and innovations can lead to medical breakthroughs in areas like disease prevention.</i></p> | | | |

Module 28

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------------------|---------------|-------------|
| EHS35028 | environmental health legislations | 4 | 5 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 52 |
| Description | | | |
| <p>This course provides an overview of the laws and regulations that govern environmental health. It explores the historical development of environmental health legislation, the roles of governmental and non-governmental organizations, and the impact of legal frameworks on public health and the environment. Students will analyze key environmental health laws, examine case studies, and explore the challenges and opportunities in implementing and enforcing these laws.</p> | | | |

Module 29

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS35029 | pathology | 5 | 5 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 77 |
| Description | | | |
| <p>The field of epidemiology, including its history and contribution to public health, is highly essential in a variety of undergraduate and graduate degree programs. Subjects of epidemiology are required in public health, environmental health, nursing, health research, and other health-related disciplines.</p> | | | |

Module 30

| Code | Course/Module Title | ECTS | Semester |
|--|------------------------|---------------|-------------|
| EHS35030 | environmental analysis | 6 | 5 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <p><i>This course introduces the principles and methodologies used in the analysis of environmental samples. Students will learn about different types of environmental pollutants, sampling techniques, analytical methods, and data interpretation. The course includes both theoretical and practical components, with hands-on laboratory sessions and fieldwork to provide students with real-world experience in environmental analysis.</i></p> | | | |

Module 31

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS36031 | biodiversity | 5 | 6 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 77 |
| Description | | | |
| <p><i>Biodiversity and Conservation explores natural landscapes, species and ecosystems and offers theories and practical methods to preserve environments and organisms. Biodiversity refers not only to endangered species but also to every organism, including microbes and fungi.</i></p> | | | |

Module 32

| Code | Course/Module Title | ECTS | Semester |
|--|------------------------------|---------------|-------------|
| EHS36032 | Air Quality and Purification | 6 | 6 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <p>This course explores the science of air quality, including the sources and types of air pollutants, their health and environmental impacts, and the technologies and strategies used to purify air. Students will learn about the regulatory standards for air quality, methods for monitoring and measuring air pollution, and the design and implementation of air purification systems. The course includes lectures, laboratory exercises, and field visits to provide students with practical experience in air quality management and purification.</p> | | | |

Module 33

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| EHS36033 | Food Safety | 6 | 6 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <i>Food safety is a management system that is applied by a food business to ensure that potential hazards are controlled to acceptable levels. Food safety concerns all types of hazards and includes the system of corrective actions, monitoring, and how to achieve safe</i> | | | |

Module 34

| Code | Course/Module Title | ECTS | Semester |
|--|-------------------------------|---------------|-------------|
| EHS36034 | Environmental Health Genetics | 6 | 6 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| Environmental factors, as related to genetics, refers to exposures to substances (such as pesticides or industrial waste) where we live or work, behaviors (such as smoking or poor diet) that can increase an individual's risk of disease or stressful situations. | | | |

Module 35

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS36035 | epidemiology | 4 | 6 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 52 |
| Description | | | |
| <i>The field of epidemiology, including its history and contribution to public health, is highly essential in a variety of undergraduate and graduate degree programs. Subjects of epidemiology are required in public health, environmental health, nursing, health research, and other health-related disciplines.</i> | | | |

Module 36

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS36036 | elective1 | 3 | 6 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | | 33 | 42 |
| Description | | | |
| <p>كيمياء خضراء , سيطرة على نواقل الامراض, علم التقانات النانوية</p> | | | |

Module 37

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------------|---------------|-------------|
| EHS47037 | scientific research methods | 2 | 7 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | | 33 | 17 |
| Description | | | |
| <p><i>This course focuses on research methodologies. the focus will be placed on qualitative and quantitative research methodologies, sampling approaches, and primary and secondary data collection. The course begins with a discussion on qualitative research approaches, looking at focus groups, personal interviews, ethnography, case studies and action research.</i></p> | | | |

Module 38

| Code | Course/Module Title | ECTS | Semester |
|---|---------------------------------|---------------|-------------|
| EHS47038 | environmental impact assessment | 6 | 7 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 63 | 87 |
| Description | | | |
| <p><i>Environmental Impact Assessment (EIA) is a process of evaluating the likely environmental impacts of a proposed project or development, taking into account inter-related socio-economic, cultural and human-health impacts, both beneficial and adverse.</i></p> | | | |

Module 39

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS47039 | Virology | 6 | 7 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <i>virology is the study of viruses and virus-like agents, including, but not limited to, their taxonomy, disease-producing properties, cultivation, and genetics.</i> | | | |

Module 40

| Code | Course/Module Title | ECTS | Semester |
|---|--------------------------------------|---------------|-------------|
| EHS47040 | solid and hazardous waste management | 6 | 7 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 63 | 87 |
| Description | | | |
| <i>The education needed to be a waste management specialist is normally a bachelor's degree. Waste management specialists usually study environmental science, business or biology. 61% of waste management specialists hold a bachelor's degree.</i> | | | |

Module 41

| Code | Course/Module Title | ECTS | Semester |
|--------------------------|-----------------------|---------------|-------------|
| EHS47041 | elective 2 | 6 | 7 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 63 | 87 |
| Description | | | |
| اسعافات أولية طفلييات | | | |

Module 42

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| EHS47042 | Bioremediation | 4 | 7 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | | 33 | 67 |
| Description | | | |
| <p><i>it is simply a sustainable method for cleaning up contaminated soil or water by enhancing natural biological processes to occur. Microorganisms/plants are able to break-down many types of contamination (e.g. fuels, oil, explosives, pesticides...) by a clean, efficient & relatively inexpensive biological process.</i></p> | | | |

Module 43

| Code | Course/Module Title | ECTS | Semester |
|--------------|-----------------------|---------------|-------------|
| EHS48043 | graduation project | 6 | 8 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| | 4/1/1 | 92 | 58 |
| Description | | | |
| | | | |

Module 44

| Code | Course/Module Title | ECTS | Semester |
|--|---------------------------------|---------------|-------------|
| EHS48044 | water and waste water treatment | 6 | 8 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 2 | 64 | 86 |
| Description | | | |
| <p>The major aim of wastewater treatment is to remove as much of the suspended solids as possible before the remaining water, called effluent, is discharged back to the environment. As solid material decays, it uses up oxygen, which is needed by the plants and animals</p> | | | |

Module 45

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| EHS48045 | transmission diseases | 5 | 8 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 77 |
| Description | | | |
| contact transmission includes direct contact or indirect contact. Person-to-person transmission is a form of direct contact transmission. | | | |

Module 46

| Code | Course/Module Title | ECTS | Semester |
|---|-----------------------|---------------|-------------|
| EHS48046 | Quality control | 5 | 8 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 77 |
| Description | | | |
| Quality control is the process by which services/products are measured and tested to ensure they are as uniform as possible and meet a standard. It helps businesses minimize inconsistencies and improve product quality | | | |

Module 47

| Code | Course/Module Title | ECTS | Semester |
|--|-----------------------|---------------|-------------|
| EHS48047 | Serology and vaccines | 4 | 8 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 52 |
| Description | | | |
| Vaccines are complex biologic products designed to induce a protective immune response effectively and safely. | | | |

Module 48

| Code | Course/Module Title | ECTS | Semester |
|------------------------------------|-----------------------|---------------|-------------|
| EHS48048 | elective 3 | 4 | 8 |
| Class (hr/w) | Lect/Lab./Prac./Tutor | SSWL (hr/sem) | USWL (hr/w) |
| 2 | 1 | 48 | 52 |
| Description | | | |
| مراقبة وتفتيش بيئي تدوير نفايات | | | |

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