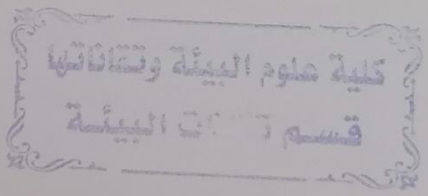
University of Mosul
College of Environmental Sciences

Department of Environmental Technologies

1. Program Description

Year/Level	Course Code	Course Name	Credit Hours	
			theoretical	practical
second / 2021-2022	EnvTch21	Mathematics	theoretical	2
	EnvTch22	Statistics	– theoretical	2
			practical	2
	EnvTch23	Environmental chemistry	– theoretical	2
			practical	2
	EnvTch24	Hydrology	– theoretical	2
			practical	2
	EnvTch25	Fluids mechanics	– theoretical	2
			practical	2
	EnvTch26	Survey	– theoretical	2



Academic Program and Course Description Guide

2021

Concepts and terminology:

Academic Program Description: The academic program description provides a brief summary of its vision, mission and objectives, including an accurate description of the targeted learning outcomes according to specific learning strategies.

Course Description: Provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the students to achieve, proving whether theyhave made the most of the available learning opportunities. It is derived from the program description.

Program Vision: An ambitious picture for the future of the academic program to be sophisticated, inspiring, stimulating, realistic and applicable.

Program Mission: Briefly outlines the objectives and activities necessary to achieve them and defines the program's development paths and directions.

Program Objectives: They are statements that describe what the academic program intends to achieve within a specific period of time and are measurable and observable.

Curriculum Structure: All courses / subjects included in the academic program according to the approved learning system (quarterly, annual, Bologna Process) whether it is a requirement (ministry, university, college and scientific department) with the number of credit hours.

Learning Outcomes: A compatible set of knowledge, skills and values acquired by students after the successful completion of the academic program and must determine the learning outcomes of each course in a way that achieves the objectives of the program.

Teaching and learning strategies: They are the strategies used by the faculty members to develop students' teaching and learning, and they are plans that are followed to reach the learning goals. They describe all classroom and extra-curricular activities to achieve the learning outcomes of the program.

1. Program Vision

The Department of Environmental Technology is considered one of the modern and rare departments. The department includes in its aspects a link between environmental technical aspects and environmental aspects. The bachelor's program provides students with a basic understanding of the basics of environmental science, in addition to a broad background in related fields.

2. Program Mission

Conveying all information related to environmental science during the four years of preliminary studies, as shown below:

First Year – During your first year of study, you begin to establish a strong foundation in the natural sciences, understand the structure and function of the environment, and apply environmental thinking to all aspects of life.

Second Year – The second study is a year dedicated to enhancing general technical skills and acquiring skills in environmental technologies and management practices. You will have the competence to assist under supervision in monitoring and managing projects in environmental technology.

Third Year – During the third academic year, you continue to deepen your skills in dealing with environmental problems, finding appropriate solutions, and building an efficient personality in project work and practical environmental tasks.

Fourth Year – The fourth year of study is a time to develop your proficiency in selected modules and prepare yourself for the challenges of practical life.

3. Program Objectives

The department aims to prepare environmental-technical cadres concerned with environmental affairs in all its components and works to graduate competent cadres specialized in the field of environmental technology capable of diagnosing

environmental problems and trying to develop appropriate solutions for them by linking the theoretical, laboratory and practical aspects of knowledge that the student receives over the years and stages of study that he receives. It extends for four years. The student who graduates from the department is awarded a bachelor's degree in the field of environmental science and technology and is qualified to work in state governmental departments and institutions and the mixed and private sectors concerned with environmental and health affairs and related departments.

4. Program Accreditation

The program doesn't have program accreditation.

5. Other external influences

None

6. Program Structure

Program Structure	Number of Courses	Credit hours	Percentage	Reviews*
Institution Requirements	5	11	%8	Basic course
College Requirements	5	20	%14	Basic course
Department Requirements	32	115	%79	Basic course
Summer Training		None		Basic course
Other				

* This can include notes whether the course is basic or optional.

7. Program Description

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			theoretical	**practical**
second /	**EnvTch21**	Mathematics	theoretical	2
	EnvTch22	Statistics	– theoretical practical	2 2
	EnvTch23	Environmental chemistry	– theoretical practical	2 2
	EnvTch24	Hydrology	– theoretical practical	2 2
	EnvTch25	Fluids mechanics	– theoretical practical	2 2
	EnvTch26	Survey	– theoretical practical	2 2
	EnvTch27	Environmental Science	theoretical	2
	EnvTch28	Organic chemistry	theoretical practical	2 2
	EnvTch29	Water quality	– theoretical practical	2 2
	EnvTch210	The crimes of the Baath regime in Iraq	theoretical	2
third /	**EnvTch31**	Water treatment	theoretical practical	2 2
	EnvTch32	Measurement technologies	theoretical	2
	EnvTch33	GIS	theoretical practical	2 2
	EnvTch34	Engineering analysis	theoretical	2
	EnvTch35	Solid waste treatment	theoretical	2
	EnvTch36	Soil pollution	theoretical practical	2 2
	EnvTch37	Biochemistry	theoretical practical	2 2
	EnvTch38	Industrial waste management	theoretical	2
	EnvTch39	Thermodynamics	theoretical	2

fourth /	**EnvTch41**	Wastewater treatment	theoretical practical	2 2
	EnvTch42	Environmental regulations	theoretical	2
	EnvTch43	Irrigation	theoretical	2
	EnvTch44	Air pollution	theoretical	2
	EnvTch45	Urban planning	theoretical	2
	EnvTch46	Remote sensing	theoretical practical	2 2
	EnvTch47	Water reuse	theoretical	2
	EnvTch48	Environmental cost and management	theoretical	2
	EnvTch49	Renewable energy	theoretical	2
	EnvTch410	Graduation project		2

8. Expected learning outcomes of the program

Knowledge	
Learning Outcomes 1	A1 Teaching basic concepts and topics of the environment - A2: Providing practical field and laboratory skills - A3: Follow environmental protection methods and avoid incorrect behaviors that harm the environment - A4 Developing the student's talents and raising his scientific and practical competence to ensure community involvement in environmental awareness
Skills	
Learning Outcomes 2	B1 Scientific field visits –
Learning Outcomes 3	B2 Conduct laboratory tests - B3 Decision making in solving environmental problems B4 Preparing scientific reports
Ethics	
Learning Outcomes 4	C1 Developing a sense of the necessity of protecting the local environment. -
Learning Outcomes 5	C2 Enhancing the spirit of group cooperation through group work in preparing scientific reports. - C 3 Voluntary projects for students in cleaning campaigns.

9. Teaching and Learning Strategies

1- Explaining the scientific material to students in detail in classrooms, scientific laboratories, and electronic classes
2- Students' participation in solving problems and exercises
3- Discussion and dialogue about vocabulary related to the topic

10. Evaluation methods

Conducting daily, quarterly and annual examinations, in addition to conducting practical examinations in laboratories, with the use of Questionnaire form at the end of each academic year.

11. Faculty

Faculty Members

Academic Rank	Specialization		Special Requirements/Skills (if applicable)		Number of the teaching staff	
	General	Special			Staff	Lecturer
Assist. Prof. Dr. Ayad Fadeel		Environmental Engineering			Staff	
Assistant Lecturer Abdullah Abdulsattar		Environmental science			Staff	
Assist. Prof. Dr. Eman Abdulmunaim		physical chemistry			Staff	
Assist. Prof. Dr. Hazim Jumma		Geochemistry			Staff	
Assist. Prof. Raid Mahmood Faisal		Natural geography			Staff	
Assist. Prof. Mohammed Fakhr Aldin		Environmental Engineering			Staff	
Lecturer Dr. Abdulsattar Jubair		Soil chemistry			Staff	
Lecturer Dr. Ali Basheer		Nuclear physics			Staff	
Lecturer Dr. Rasha Khalid		Environmental Engineering			Staff	
Lecturer Dr. Tahseen Ali		Hydrology			Staff	

Lecturer Diana Nooraldin		Biology			**Staff**	
Lecturer Muthaina Abdullah		Applied statistics			**Staff**	
Lecturer Roaa Mudhafar		Environmental Engineering			**Staff**	
Lecturer Dr. Ali Zain Alabdeen		Hydrogeology			**Staff**	
Lecturer Dr. Marwan Salih		Mathematics			**Staff**	
Lecturer Dr. Hassan Hassan		Environmental Cost			**Staff**	
Lecturer Wisam Saeed		Phonetics			**Staff**	
Assist. Lecturer Hamsa Burhan		Materials science			**Staff**	
Assist. Lecturer Hanaa Adalat		Financial			**Staff**	
Assist. Lecturer Omar Khair Aldin		Soil mechanics			**Staff**	
Assist. Lecturer Farah Khazaal		Hydraulics			**Staff**	
Assist. Lecturer Ahmed Abdulrazaq		Irrigation			**Staff**	
Assist. Lecturer Raghad Hazim		Computer science			**Staff**	
Assist. Lecturer Lina Nawfal		Inorganic chemistry			**Staff**	
Assist. Lecturer Mustafa Amer		Environmental science			**Staff**	
Assist. Lecturer Hanan Riad		Civil Engineering			**Staff**	
Assist. Lecturer Muhanad		Soil			**Staff**	

Qasim						
Assist. Lecturer Mohammed Saadallah		Analytical Chemistry			**Staff**	
Assist. Lecturer Asmaa Muaid		Hydraulics			**Staff**	
Assist. Lecturer Basma Ghazwan		Remote sensing			**Staff**	
Assist. Lecturer Abeer Salih		physical chemistry			**Staff**	
Assist. Lecturer Zahraa Mohammed		Networks			**Staff**	
Assist. Lecturer Maan Hashim		Environmental Science			**Staff**	
Assist. Lecturer Burkan Mutasim		Constructions			**Staff**	
Assist. Lecturer Alaa Jasim		Inorganic chemistry			**Staff**	
Assist. Lecturer Omar Abduljabbar		Environmental science			**Staff**	
Assist. Lecturer Mohammed Abdulrazaq		Environmental science			**Staff**	
Assist. Lecturer Ous Nawfal		Environmental science			**Staff**	

Professional Development

Mentoring new faculty members

The lecturers' capabilities are developed through their participation in training courses specialized in methods of teaching held in the continuing education center, and directing the new lecturers to follow the modern methods followed in the educational system.

Professional development of faculty members

Setting clear plans showing the development courses to be completed by the teaching staff and

according to the various specializations, as well as through the establishment of academic seminars at the department level delivered by the teaching staff of the department where and benefiting from accompanied discussions to increase new lecturers knowledge.

12. Acceptance Criterion

Working with the central admission system for morning studies.

13. The most important sources of information about the program

The college guide 2017-2018

14. Program Development Plan

The effectiveness of the study program is evaluated by observing student achievements, in addition to continuous responses and feedback from the teaching staff about the strengths and weaknesses of the program and ways to improve it for the purpose of continuously updating and developing it.

Program Skills Outline															
				Required program Learning outcomes											
Year/Level	Course Code	Course Name	Basic or optional	Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
	EnvTch23	Environmental chemistry	Basic		*		*		*		*		*		*
	EnvTch28	Organic chemistry	Basic		*		*		*		*		*		*
	EnvTch27	Environmental science	Basic	*		*		*	*	*	*	*	*	*	
	EnvTch24	Hydrology	Basic	*					*		*		*		
	EnvTch31	Water supply and water treatment	Basic		*		*	*	*	*	*	*	*		
	EnvTch38	Industrial wastewater treatment	Basic		*		*	*	*	*	*	*	*		
	EnvTch44	Air pollution	Basic		*		*	*	*	*	*	*	*		
	EnvTch41	Wastewater treatment	Basic		*		*	*	*	*	*	*	*		

- **Please tick the boxes corresponding to the individual program learning outcomes under evaluation.**