

Appendix 2. The Programme Specification

Training major: ENVIRONMENTAL ENGINEERING TECHNOLOGY

Training level: Bachelor

Major code: 52510406

Date revised: **August 2015**

1. Awarding institution:

HCMC University of Technology and Education

2. Name of the final award:

Bachelor of Environmental Engineering Technology

3. Mode of study: Full time

Type of study: Campus based

4. Training time: 4 years

The normal period of study for a full-time bachelor's degree is four years and the maximum period is eight years.

5. Admission criteria:

High school graduate candidates have total score of Mathematics, Physics and Chemistry (group A) or Mathematics, Chemistry, Biology (group B) or Mathematics, Chemistry, English (group D7) in annual National High School Graduation Examination held in July by MOET higher than the cut-off score set by the HCMUTE based on the student admission quota from MOET. The cut -off score will be published in August.

Candidates, who graduated from specialized high school, have an average score of five consecutive terms of high school larger than 7.5 and are in top 10% of the HCMUTE annual admission quota.

6. Programme objectives:

The objectives of the EET Programme are that most graduates about 3 years will

PO1. Graduates will be able to utilize foundational and advanced knowledge in science and engineering to achieve success in their career in the field of environmental engineering technology or related professional fields in accordance with their career goals.

PO2. Graduates will be able to become competent team leader or qualified team member who can solve practical socio-economic and environmental challenges.

PO3. Graduates will be able to participate in further education or research to pursue their professional development.

7. Expected learning outcomes

After successful completion the CET Programme, graduates will be able to demonstrate and attain the following ELOs:

ELO1. Apply the knowledge of mathematics, sciences and society in the field of environment

ELO2. Apply the core knowledge of environmental engineering technology.

ELO3. Apply the specialized knowledge of environmental engineering technology.

ELO4. Identify, analyze and solve environmental problems

ELO5. Conduct experiments and evaluate the experiment results.

ELO6. Possess sufficient insight on and ability to solve practical socio-economic and environmental contradictions

ELO7. Be highly aware of the need and responsibility in life-long learning.

ELO8. Exercise professional ethics, honesty, and be able to determine the professional objectives and orientation.

ELO9. Demonstrate the ability to work as a team leader and as a team member.

ELO10. Communicate effectively through written documents, electronic media, oral presentation and negotiation.

ELO11. Communicate effectively in English for environmental engineering technology.

ELO12. Practise the role and responsibility of an environmental engineer toward the society.

ELO13. Conceive ideas, model systems, implement and manage environmental projects.

ELO14. Design waste management and treatment systems.

ELO15. Implement and monitor waste management and treatment systems.

ELO16. Operate waste management and treatment systems.

8. Programme structures

Name	Credit		
	Total	Required	Elective
General education	56	50	6
Politics	10	10	
Social Sciences	8	2	6
Foreign Languages	9	9	
Science and Maths	23	23	
Introduction to Environmental Engineering Technology	3	3	
Informatics	3	3	
Professional Education	94	88	6
Fundamental courses	28	28	
Specialized courses	36	30	6
Practice	20	20	
Graduation Thesis	10	10	

- The programme structures comprise of the following 8 semesters

Semester	Code	Course	Number of credits			
			Theory	Practice	Total	
1 st Semester	LLCT150105	Principles of Marxist -Lenism	5	0	5	
	ENGL130137	English 1	3	0	3	
	MATH130101	Advanced Mathematics 1	3	0	3	
	GCHE130103	General Chemistry A1	3	0	3	
	ITET131710	Introduction to Environmental Engineering Technology	2	1	3	
	PHED110513	Physical Education 1	1	0	1	
	Total					18
2 nd Semester	ENGL230237	English 2	3	0	3	
	ADPR131185	MS Access program	2	1	3	
	MATH130201	Advanced Mathematics 2	3	0	3	
	PHYS120102	General Physics A1	3	0	3	
	GREN123110	General Environment	2	0	2	
	ENAC233610	Environmental Analytical Chemistry	3	0	3	
	EEAC316710	Experiments on Environmental Analytical Chemistry	0	1	1	
	PHED110613	Physical Education 2	1	0	1	
	Choose 1 of 2 courses (Social Science knowledge)					
		GEEC220105	General Economic	2	0	2
	IQMA220205	Introduction to Quality Management	2	0	2	
Total					21	
3 rd Semester	PHYS120202	General Physics A2	2	0	2	
	MATH130301	Advanced Mathematics 3	3	0	3	

Semester	Code	Course	Number of credits		
			Theory	Practice	Total
	ENGL330337	English 3	3	0	3
	EDDG230120	Technical Draw B	2	1	3
	EHAH223510	Environmental Hydraulic Engineering	2	0	2
	ENEC233210	Environmental Engineering Chemistry	3	0	3
	PHYS110302	Practice Physics	0	1	1
	EEEEC326610	Experiments on Environmental Engineering Chemistry	2	0	2
	PHED130715	Physical Education 3	3	0	3
	Choose 1 of 2 courses (Social Science knowledge)				
	PRSK320705	Presentation Skill	2	0	2
	TDTS320805	Writing Scientific and Technical Documents	2	0	2
Total					24
4th semester	MATH130401	Applied Probability	3	0	3
	GELA220405	General Laws	2	0	2
	CADM230320	Basic Auto CAD	2	1	3
	PEET233410	Process and Equipment in Environmental Technology	3	0	3
	ENRD227810	Environmental research design	2	0	2
	ENMI233910	Environmental Microbiology	3	0	3
	ENHE223510	Environmental Hydraulics and Hydrology	3	0	3
	EOEM327010	Experiments on Environmental Microbiology	2	0	2
	Choose 1 of 2 courses (Social Science knowledge)				
	PLSK320605	Planning Skill	2	0	2

Semester	Code	Course	Number of credits		
			Theory	Practice	Total
	INLO220405	Introduction to Logics	2	0	2
Total					23
5th semester	ENSO221610	Environmental System Optimization	2	0	2
	LLCT230214	Revolutionary Lines of VCP	3	0	3
	EFET233710	English in Environmental Technology	3	0	3
	SPRT424010	Soil pollution and remediation	2	0	2
	ANCT434210	Air and Noise Pollution Control Techniques	3	0	3
	DAPT415210	Design project on Air Pollution Treatment	0	1	1
	EAPT326910	Experiments on Air Pollution Treatment	0	2	2
	EOSP317110	Experiments on Soil pollution	0	1	1
	Choose 2 of 4 courses				
	ELAP125910	Environmental Law and Policy	2	0	2
	ENTO125410	Environmental Toxicology	2	0	2
	ENEC125510	Environmental Economics	2	0	2
	ENSM125810	Environmental System Modeling	2	0	2
Total					21
6th semester	SWMT434110	Solid Waste Management and Treatment	3	0	3
	SWTR434310	Supply Water Treatment	3	0	3
	WSDN424710	Water Supply and Drainage Network	2	0	2
	AWVI326110	Awareness Visits	0	2	2
	DSWT415010	Design project on Supply Water Treatment	0	1	1
	EOWS326410	Experiments on Supply Water Treatment	0	2	2

Semester	Code	Course	Number of credits		
			Theory	Practice	Total
	PWSD316210	Practice in Water Supply and Drainage Network	0	1	1
	EIAA124810	Environmental Impact Assessment	2	0	2
	ENMA134510	Environmental Management	3	0	3
Choose 1 of 3 courses					
	ENPM128310	Environmental project management	2	0	2
	IAUP125710	Industrial architecture and urban planning	2	0	2
	GISM124910	Geographic Information System	2	1	3
Total					21
7th semester	WWTR434410	Wastewater Treatment	3	0	3
	ENMO125310	Environmental Monitoring	2	0	2
	LLCT120314	Ho Chi Minh's Ideology	2	0	2
	CLPR124610	Cleaner production	2	0	2
	HSEN125610	Health, Safety and Environment	2	0	2
	EOEM316310	Practice in Environmental Monitoring	0	1	1
	PWWT415110	Design project on Wastewater Treatment	0	1	1
	EOWT326510	Experiments on Wastewater Treatment	0	2	2
	GRPR326010	Graduation Practice	0	2	2
Total					17
8th semester	GRTH407210	Graduate Thesis	0	10	10

Note: Credits of Physical Education 1, 2 and 3 are not included in total 150 credits of the programme

9. Progression points

Students must obtain a mark of 5.0 out of 10.0 for all course

In case where a student fails to accumulate a GPA (scales of 10) of 3.0 for the first year, or 3.5 for the second year, or 4.0 for the third year or 4.5 from the fourth year or over allowable study time, he or she will be required to withdraw from the programme.

10. Special features

A five-day introduction programme in the first week of the first year

A four-week internship at companies, national agencies in some sites such as supervisor/operator/manager/designer of waste treatment system or environmental management system

The last semester for a capstone project that is orally defended

Three course's projects

Many courses related to experiments and practices

11. Job opportunities

The EET programme equips graduates with competences to meet various requirements of different labor markets. Environmental engineers use the principles of engineering, soil science, biology, and chemistry to develop solutions to environmental problems. They are involved in efforts to improve recycling, waste disposal, public health, and water and air pollution control. They also address global issues, such as unsafe drinking water, climate change, and environmental sustainability. Environmental engineers conduct hazardous-waste management studies in which they evaluate the significance of a hazard and advise on treating and containing it. They also design systems for municipal and industrial water supplies and industrial wastewater treatment, and research the environmental impact of proposed construction projects. Environmental engineers in government develop regulations to prevent mishaps. After graduation, the graduates will be able to work in companies, factories, industrial zones, waste treatment plants, environmental monitoring stations, environmental consulting companies, universities, research institutes and local as well as state agencies.

12. Date of issue and revision

The programme was issued in August 2012 and revised in August 2015.