In the Name of God
Islamic Republic of Iran
Ministry of Health and Medical Education
Deputy Ministry of Education

Associate of Science in Environmental Health

Total Course Credits:

- Core: 23 credits
- General: 15 credits
- Basic: 22 credits
- Internship: 8 credits
- Total: 68 credits

Program Description

Environmental health engineering is a broad and complex subject area that, at its core, seeks to understand the interactions of environmental factors with biological systems. Thus, exploration of environmental health necessitates concerted multidisciplinary approaches to understanding and addressing environmentally influenced health outcomes. Graduates can control the harmful impacts of pollutants or prevent their release into the environment by identifying the risk factors of environmental pollutants. Likewise, graduates must maintain and improve the level of health and hygiene of the society and solve the problems. So, environmental health aims to train students to solve problems in the following contexts:

- Supplying healthy food and water
- Analyzing mechanisms of environmentally transmitted diseases and how to prevent and control
- Treating and disposing sewage
- Treating and disposing solid and toxic waste
- Decreasing air, water, soil, food, and noise pollution
- Providing healthy housing environment and public places

Admission Requirements

Applicants must have successfully graduated in diploma of science from high schools and completed one semester for language courses such as Persian or English language.

Table 1. Expected Competencies at the End of the Program

Competence	Description of professional tasks	Course code
Communication and interaction skills	Active participation in intra- and inter-department programs	30
Teaching and consulting,	Environmental health education for public	10, 11
	Environmental health education for guilds	20, 22
	Consulting in control of carriers e.g. insects and rodents, and application of pesticides	11
	Participation in consulting programs for health control of public places	20, 21, 22
Control of environmental health status in public places	Control of health status in public places such as schools and educational centers, restaurants and food preparation centers, stadiums, parks, swimming pools, laboratories and health centers, offices, hospitals, mosques, prisons, etc.	20, 21, 22, 24, 25
	Control of foodstuffs hygiene status, sampling of suspicious foodstuffs, sending the samples to the laboratory and disposal of rotten foods according to the relevant instructions	22
	Health supervision on all steps of solid waste management such as collection, separation, transfer, temporary storage, treatment and disposal of hospital, dangerous and industrial solid wastes	19, 21, 25
Environmental health services	Participation in siting of environmental health units in health centers	20
	Participation in health control of hospitals, control of infection	21, 25
	Participation in maintenance of air pollution control devices within industrials	22
	Participation in sampling and experiments of water and wastewater as well as foodstuffs and other environmental health related issues	15, 16
	Participation in operation and maintenance of water and wastewater treatment plants, water distribution systems, and wastewater collection systems	12, 13, 15, 16, 19
	Participation in maintenance of solid waste systems including collection, recycling, composting, disposal, etc.	10, 22
	Collaboration in implementation of environmental health-related projects	
	Cooperation in environmental health management in emergencies	
	Implementation of article (13) of the law on food, beverage, cosmetics and hygiene products along with obtaining permission from the health center for closure of places and centers	

	Conducting experiments related to air pollution, water and wastewater, radiation hygiene, and solid waste	

Table 2. Expected Procedural Skills for Graduated Students

Course code	Skill	Minimum number of times required to do the activity to achieve mastery of the skill			
		Observation	Contribution	Done Independently	Total
18	Application of air sampling and monitoring devices	2	2	2	6
12,13	Sampling from various water resources for testing of physical, chemical and microbial characteristics, sampling of wastewater and effluent, preparation of microbial growth culture, conducting the microbial tests on water and wastewater samples	2	2	2	6
12,13	Experiments on chemical and physical characteristics of water and wastewater in accordance with the syllabus	2	2	2	6
07	Cartography, surveying, and working with related software such as AutoCAD	2	2	2	6
19	Determination of physical and chemical characteristics of solid waste, and determining of collection system routes	2	2	2	6
17	Operation of various	1	1	1	3

	types of pumps and turbines related to water distributing and wastewater collecting systems				
23	Foodstuffs sampling	3	3	3	9
25. 22, 24, 30	Sanitary inspection of public places, including hospitals, hotels, restaurants, laboratories and health centers, parks, stadiums, terminals, holy places, mosques, swimming pools, camps, prisons, slaughterhouses for livestock and poultry, gas stations, etc. (for control of health at public places).	1	1	1	3
30,22	Health inspection on food preparation and distribution places	2	2	2	6
	Health inspection on schools and educational centers	1	1	1	3

Educational Methods and Techniques:

In this course, various educational methods and techniques are used:

- Task-based education
- Problem-oriented education
- Community-oriented education
- Subject-based education
- Lab-based education

Student Assessment
All students will be assessed by oral assessments and written exams.

Ethical Considerations
Learners are expected to:

- Comply with the bill of rights of stakeholders
- Follow the safety regulations of staff and work environment
- Comply with dress code

- Strictly observe the ethical rules if working with animals
- Follow professionalism
- Protect resources and equipment to work under any circumstances
- Respect teachers, staff, peers, and other learners, and try to provide a friendly atmosphere in the workplace
- Observe social and professional ethical considerations in the critique of programs
- Observe ethical points of research in performing field-related studies

Tables of the Courses

Table 3. General Courses

Course code	Title of the Course	Hours			Total Credits
		Theory	Practical	Total	
1	Theoretical foundations of Islam	34	-	34	2
2	Islamic ethics	34	-	34	2
3	Persian language	51	-	51	3
4	English language	51	-	51	3
5	Exercise and physical Education (1)	1	-	34	1
6	Family and population knowledge	34	-	34	2
7	History of culture and civilization of Islam and Iran	34	-	34	2
	Total	15			

Table 4. Basic Courses

Course code	Title of the Course	Credits			Teaching Hours		
		Theory	**Practical**	**Total**	**Theory**	**Practical**	**Total**
1	General mathematics (1)	3	-	3	51	-	51
2	Computer sciences and its application	1.5	0.5	2	26	17	43
3	General physic	2	1	3	34	51	85
4	General chemistry	2	1	3	34	34	68
5	General microbiology	1	1	2	17	34	51
6	Principles of epidemiology	2	-	2	34	-	34
7	Surveying and cartography	-	2	2	-	102	102
8	Biostatistics (1)	1	-	1	17	-	17
9	Environmental ecology	2	-	2	34	-	34
10	Health education and	1	-	1	17	-	17

	promotion						
11	Principles of health service management	1	-	1	17	-	17
	Total	22					

Table 5. Core Courses

Course Code	Course Title	Credits			Teaching Hours		
		Theory	Practical	Total	Theory	Practical	Total
12	Environmental microbiology	1	1	2	17	34	51
13	Environmental chemistry	1	1	2	17	34	51
14	Fluid mechanics	2	-	2	34	-	34
15	Principles of water resources treatment and sanitation	1	-	1	17	-	17
16	Disposal of wastewater in small communities	1	-	1	17	-	17
17	Workshops for urban instruments (Pump motor and piping of water and wastewater)	-	2	2	-	102	102
18	Air hygiene	1	-	1	17	-	17
19	Solid waste principles (1)	1	-	1	17	-	17
20	House and public places hygiene	1	-	1	17	-	17
21	Application of disinfectants and sanitizers in environmental health	1.5	0.5	2	26	17	43
22	Control of health in food preparation and distribution places	1.5	0.5	2	26	26	52
23	Environmental health management in emergencies	2	-	2	34	-	34
24	Sanitation in schools and educational institutions	1	-	1	17	-	17
25	Environment health in hospitals and control of infection	2	-	2	34	-	34
26	National and international laws regarding environment and health	1	-	1	17	-	17
	Total	23					

Table 6. Internship in the Field of Environmental Health Engineering

Course code	Title of the Course	Credits			Teaching Hours		
		Theory	Practical	Total	Theory	Practical	Total
1	Internship in environmental health	-	8	8	-	408	408