

## In the Name of God

### Islamic Republic of Iran Ministry of Health and Medical Education Deputy for Education

## Ergonomics Master of Science (MSc)

### Total Course Credits

Core: 24

Non-core: 2

Thesis: 5

### Program Description

Ergonomics is the scientific discipline concerned with the understanding of interactions among humans and other elements of a system, and the profession that applies theory, principles, data and methods to design in a way to optimize human well-being and the overall system performance.

Many people suffer because their conditions at work and home are incompatible with their needs, abilities and limitations. This situation affects their safety and welfare, as well as, that of organizations and societies.

High technology can make our lives more efficient and exciting. However, fascination with technology and overly ambitious business expectations can cause us to overlook human factor risk. Neglecting these risks can have serious effects on manufacturers, suppliers and service enterprises. Therefore, the graduate in ergonomics and human factors will have a more important role in the postmodern era to help in propagating theoretical and practical aspects of the field, advancing the frontiers of knowledge by doing research and innovating and promoting health and well-being by designing products and work places ergonomically.

For the time being, the Islamic Republic of Iran is the pioneer for offering this course in the Middle East in terms of the educational excellence, and research products concerning ergonomics studies. In the next 10 years, the main mission of the program is to train committed, knowledgeable and competent graduates in this multidisciplinary field.

### Admission Requirements

- Having a bachelor degree (BSc) in one of the fields of occupational health, industrial safety, industrial engineering, industrial design, mechanical engineering, physics, psychology, medical engineering, occupational therapy, physiotherapy, or Doctor of Medicine awarded by one the home or foreign universities approved by the Ministry of Health, Treatment and Medical Education.
- Meeting admission criteria based on the regulations of universities
- Being eligible for entering the program

\*Important note: These general conditions do not necessarily exclude specific conditions of each specific institute or university.

## Expected Competencies at the End of the Program

### General Competencies\*

#### Specific Competencies and Skills

At the end of the program learners will be competent in the following skills:

- Keeping the physical and psychological environment as well as the workplace healthy
- Using specialized equipment
- Working in professional environments
- Handling the bio-signal equipment and data processing
- Interpreting the test results

### Educational Strategies, Methods and Techniques\* Student Assessment (Methods and Types)

- Formative (Quizzes and Midterm Exam)
- Summative (Final Exam)
- Methods of assessment: oral, written, OSLE, and Logbook

### Ethical Considerations\*

\***Note:** The related document(s) can be found at <http://hcmeq.behdasht.gov.ir/>

## Tables of the Courses

**Table 1. Compensatory Courses**

Code of the Course	Title of the Course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	practical	Total	Theoretical	Practical	Total	
01	Human Anatomy and Physiology	2	1	3	34	34	68	-
02	General Psychology	2	-	2	34	-	34	-
03	General Mathematics	2	-	2	34	-	34	-
04	General physics	2	-	2	34	-	34	-
05	* Medical Informatics Systems	0.5	0.5	1	9	17	26	-
06	Research Methods for Health Sciences	1	-	1	17	-	17	-
<b>Total</b>		<b>9/5</b>	<b>1/5</b>	<b>11</b>	<b>162</b>	<b>51</b>	<b>213</b>	<b>-</b>

These courses are basic for the PhD but have not been completed previously.

Students have to pass at least 16 compensatory credits (Table 1) as specified by the Department of education and approved by the Postgraduate Education Council.

\* Completing this course is obligatory for those who have not completed it before.

**Table 2. Core courses**

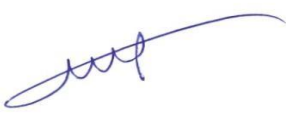

Code of the Course	Title of the Course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	practical	Total	Theoretical	Practical	Total	
07	Ergonomics Principles	1	-	1	17	-	17	-
08	Work Physiology	1	1	2	17	34	51	01
09	Anthropometry	0.5	0.5	1	9	17	26	01
10	Occupational Biomechanics	1/5	0/5	2	26	17	43	01
11	Environmental Ergonomics	1/5	0/5	2	26	17	43	-
12	Psychology in Ergonomics	1	-	1	17	-	17	02
13	Ergonomics in Design	1	1	2	17	34	51	07, 09, 10
14	Analytical Statistics	1	-	1	17	-	17	03
15	Macro-Ergonomics	1	-	1	17	-	17	-
16	Cognitive Ergonomics	1/5	0/5	2	26	17	43	12
17	Human Error and Systems Safety	1/5	0/5	2	26	17	43	-
18	Technical Language	2	-	2	34	-	34	-

19	Ergonomics Assessment Tools	3	1	4	51	34	85	08, 09, 10
20	Introduction to Musculoskeletal Disorders	1	-	1	17	-	17	-
21	MSc Thesis	-	5	5	-	-	-	-
<b>Total</b>		<b>18/5</b>	<b>10/5</b>	<b>29</b>	<b>317</b>	<b>187</b>	<b>504</b>	

**Table 3. Non-Core Courses**

Code of the Course	Title of the Course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	practical	Total	Theoretical	Practical	Total	
22	Special Topics in Ergonomics	1	-	1	17	-	17	-
23	Participatory Ergonomics	1	-	1	17	-	17	-
24	Economics of Ergonomics	1	-	1	17	-	17	-
25	Work-related Accidents	1	-	1	17	-	17	-
26	Sociology of Work	1	-	1	17	-	17	-
<b>Total</b>		<b>5</b>	<b>-</b>	<b>5</b>	<b>85</b>	<b>-</b>	<b>85</b>	

\* Students must pass 2 credits as specified by the corresponding department.

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