In the name of God

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

Food Science & Technology (Quality Control)

Degree: Doctor of Philosophy (PhD)

Total Course Credits:

- Core: 18
- Non-core (Electives): 8
- Dissertation: 24

Program Description

Food science and technology draw from many disciplines, such as biology, chemical engineering, and biochemistry, in an attempt to better understand food processes and ultimately improve food products for the general public. As stewards of the field, PhD graduates study the physical, microbiological, and chemical makeup of food. By applying their findings, they are responsible for developing safe, nutritious food and innovative packaging that lines supermarket shelves everywhere. The mission of the program is to train experts to conduct extensive and systematic research on a variety of food properties and composition to improve production, quality, and maintenance of food and food products.

Admission Requirements

Applicants must have the following degrees:

- Holding an MSc degree in one of the following fields: Food Science and Technology (various branches), Agricultural Engineering (with a specialization in Food Science and Technology), Food Chemistry, Food Microbiology, or Food Science and Technology Engineering from an accredited home or foreign university.

Meeting the eligibility criteria for entry into the program according to the PhD educational rules and regulations.

The entrance exam includes the subjects in the following table.

Subjects of Entrance Exam	weight
Food Microbiology	2
Food Chemistry	2
Food Technology	3
Food quality Control	3
Total	10

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:

- Applying principles of food technology in the production of healthy foods.
- Utilizing food technology principles for producing foods for special patients.
- Developing and employing modern technologies and methods for analyzing and controlling food quality.
- Promoting health and safety in the food industry.
- Enhancing food manufacturing processes and maintenance to reduce waste and increase product variety.
- Conducting specialized research on food production, control, maintenance, and quality.

Educational Strategies, Methods and Techniques*

Student Assessment (Methods and Types)

a) **Methods of Assessment:**

- Written and oral assessments
- Direct Observation of Procedural Skills (DOPS)
- Objective Structured Clinical Examination (OSCE)
- Logbook-based assessment

b) **Types of Assessment:**

- Formative assessments (quizzes, mid-term exams)
- Summative assessments (final exams)
- Comprehensive exams

- Monitoring progress and completion of the dissertation

Ethical Considerations*

*Note: The related document(s) can be found at http://hcmep.behdasht.gov.ir/

Tables of the Courses

Table 1. Core Courses

Code of the Course	Title of the Course	Credits			Teaching Hours		
		Theoretical	Practical	Total	Theoretical	Practical	Total
1	Advanced Food Biochemistry	2	1	3	34	34	68
2	Advanced Food Rheology	2	1	3	34	34	68
3	Flavors Chemistry	2	1	3	34	34	68
4	Food Formulation	2	-	2	34	-	34
5	Bioactive Food	2	-	2	34	-	34
6	Application of Modeling in Food Technology	2	-	2	34	-	34
7	Special Issue in Foods Control	-	-	1	-	34	34
8	Seminar 1	1	-	1	17	-	17
9	Seminar 2	-	1	1	-	34	34
10	Dissertation	-	-	24	-	-	-
11	Total	12	4	43	187	180	357

Table 2. Non-Core Courses

Code of the Course	Title of the Course	Credits			Teaching Hours		
		Theoretical	Practical	Total	Theoretical	Practical	Total
1	Nano Biotechnology	2	-	2	34	-	34
2	Advanced Food Packaging	2	-	2	34	-	34
3	Food Toxicology	2	-	2	34	-	34
4	Physical Chemistry	2	-	2	34	-	34
5	The Modern Methods for Food Analysis	1	1	2	17	34	51
6	New sources of Food	2	-	2	34	-	34
7	Biofilm in Food Technology	2	-	2	34	-	34
8	Total	13	1	12	221	34	255

Students should pass 8 credits from the course credits in Table 2, depending on the topic of their dissertation, and the approval of their supervisor and the Council of Graduate Education

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