

**In the Name of God**

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

**Nutritional Sciences  
Doctor of Philosophy (PhD)**

#### **Total Course Credits**

- Core: 18
- Non-core (Elective): 8
- Dissertation: 20

#### **Program Description**

Sufficient food, in terms of both quality and quantity, has been known to be a vitally important determinant of maintaining and improving health status in the individual and society. This is considered the fundamental right of the public. In addition to meeting the nutritional requirements, food should be consistent with the socio-economic and cultural norms. These challenges have led to a growing demand for trained nutritionists to work in a range of contexts to achieve this aim at national and international levels. This field of study will offer the graduates the specialized, scientific knowledge and practical skills in accordance with the requirements of the individual and society. The aim of training nutritionists is to educate the experts with appropriate and specialized knowledge and communication skills to help in the treatment and prevention of the nutritional problems of the individual and society, using a holistic and community-oriented approach.

The Ph.D. program in Nutritional Sciences provides interdisciplinary training and integrated sciences of Biology and Social Sciences to prepare the nutritionist to expand the border of knowledge and to apply this knowledge in public and clinical health care settings through proper programming and research. This field includes a number of comprehensive and participatory activities that require deep knowledge of physiology, biomedicine, food and nutrients metabolism and epidemiology on the one hand, and ecological, cultural and socio-economic factors affecting the access to, choice, and consumption of food, on the other hand.

The goal of the Ph.D. program in Nutritional Sciences is to train professionals who can work efficiently as leaders and active participants in nutritional research and education at the national level and help to expand the boundaries of nutrition knowledge for public health promotion.

#### **Admission Requirements**

- Having a master's degree (MSc) in one of the fields of Nutrition, Public Health in Nutrition, or Doctor of Medicine, Pharm-D or Doctor of Veterinary Medicine
- Being eligible for entering the program according to the PhD educational rules and regulations

#### **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:

- The ability to develop and provide research and education in all aspects of nutrition including design, conduction and execution
- The ability to detect and resolve the nutritional problems in the individual and society
- The ability to manage and lead food and nutrition programs at policy making level

### **Educational Strategies, Methods and Techniques**

#### **Student Assessment (Types and Methods)**

- Formative (quizzes and midterm Exam)
- Summative (Final Exam)
- Comprehensive exam
- Oral and written exams, observation, clinical competence assessments
- (OSCE, OSLE, OSFE, DOPS, 360 degree evaluation competency)
- Portfolio assessment: Logbook, test results, reports, articles, certificates, promotions, etc.

#### **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	Medical Information Systems*	0.5	0.5	1	9	17	26	-
02	Nutritional Epidemiology	2	-	2	34	-	34	-
03	Biostatistical Methods I	3	1.5	1.5	34	34	68	-
04	Research Methodology in Nutritional Sciences	2	-	2	34	-	34	03
05	Advanced Nutritional Physiology	2	-	2	34	-	34	-
06	Advanced Nutrition I	2	-	2	34	-	34	05
07	Advanced Nutrition II	2	-	2	34	-	34	05
08	Clinical Nutrition or Diet Therapy	2	1	1	17	34	51	-
	<b>Total</b>	16						

Students should pass all or some of the course credits (Table 1) as specified by the Department of Education and approved by the Postgraduate Education Council.

\* All students must pass the course “Medical Information Systems” as a prerequisite or concurrent course.

**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	
09	Advanced Methods in Nutritional Research	2	0	2	34	-	34	02, 04
10	Advanced Statistical Methods	2	1	3	34	34	68	03
11	Metabolic Regulation	2	-	2	34	-	34	06,05,07
12	Nutrition and Disease	3	-	3	51	-	51	08
13	Planning and Management of Nutrition Programs	3	1	4	51	34	85	09,10
14	Cellular and Molecular Nutrition	2	1	3	34	34	68	05,11
15	Seminar	1	-	1	17	-	17	A Minimum of 8 Credits of core courses
	<b>Total</b>	18						

\* Dissertation: 20 credits and will be offered in the research step.

**Table 3. Non-Core Courses: Mycology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Medical Bacteriology	1	1	2	17	34	51	-
02	Fungal Physiology	2	-	2	34	-	34	-
03	Epidemiology of fungal diseases	2	-	2	34	-	34	-
04	Immuno Mycology	2	-	2	34	-	34	-
05	Advanced Bacteriology	1	1	2	17	34	51	01
06	Advanced Biochemistry and Applied Mycology	1	1	2	17	34	51	Metabolic Regulation
	<b>Total</b>	12						

Students have to pass 8 non-core courses (Table 3) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 4. Non-Core Courses: Clinical Biochemistry Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	General Biochemistry of hormone	2	-	2	34	-	34	-
02	Molecular biology	2	-	2	34	-	34	-
03	Clinical hormones biochemistry	2	-	2	34	-	34	General Biochemistry of Hormone
04	Cancer biochemistry	2	-	2	34	-	34	Molecular Biology
05	Membrane and nerves biochemistry	2	-	2	34	-	34	-
06	Clinical Biochemistry	2	-	2	34	-	34	-
	<b>Total</b>	12						

Students have to pass 8 non-core courses (Table 4) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 5. Non-Core Courses: Physiology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Advanced new topics in the physiology of the heart and circulatory	3	-	-	51	-	51	-
02	Advanced new topics in physiology of endocrinology and reproduction	3	-	-	51	-	51	-
03	Advanced new topics in physiology of cell	2	-	2	34	-	34	-
04	Advanced new topics in physiology of Gastric	2	-	2	34	-	34	-
05	Advanced new topics in physiology of kidney and water and electrolytes	2	-	2	34	-	34	-
	<b>Total</b>	12						

Students have to pass 8 non-core courses (Table 5) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 6. Non-Core Courses: Food Science and Technology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Food products formulation	2	-	2	34	-	34	-
02	Advanced food biochemistry	2	1	3	34	34	68	-
03	Functional foods	2	-	2	34	-	34	-
04	Special issues in food quality control	-	1	1	34	-	34	-
05	Foods cellulogy	2	1	3	34	34	68	-
	<b>Total</b>	11						

Students have to pass 8 non-core courses (Table 6) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 7. Non-Core Courses: Immunology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Advanced methods of theoretical and practical immunology	1	1	2	17	34	51	-
02	Theoretical and practical Immunochemistry	1	1	2	17	34	51	-
03	Advanced Immunology	2	-	2	34	-	34	-
04	Clinical Immunology	2	-	2	34	-	34	-
05	Organs Immunology	2	-	2	34	-	34	-
	<b>Total</b>	10						



Students have to pass 8 non-core courses (Table 7) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 8. Non-Core Courses: Bacteriology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Professional medical bacteriology (1)	3	1	4	51	34	85	-
02	Professional medical bacteriology (2)	3	1	4	51	34	85	-
03	The role of bacteria in Medical Biotechnology	2	-	2	34	-	34	-
04	Advanced virology	1	1	2	17	34	51	-
05	Genetic engineering methods	1	1	2	17	34	51	-
06	Working with electronic microscope	1	1	2	17	34	51	-
	<b>Total</b>	16						

Students have to pass 8 non-core courses (Table 8) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 9. Non-Core Courses: Health Education Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Theories and patterns of behavior study (1)	2	-	2	34	-	34	-
02	Theories and patterns of behavior study	2	-	2	34	-	34	01

	(2)							
03	Communication in health education and health promotion	2	-	2	34	-	34	-
04	Planning intervention in health promotion	2	-	2	34	-	34	01,02
05	Health education and socio-economic development	2	-	2	34	-	34	-
	<b>Total</b>	10						

Students have to pass 8 non-core courses (Table 9) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 10. Non-Core Courses: Economic Science Courses (The Field of Econometrics)**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Advanced Microeconomics (1)	3	-	3	51	-	51	-
02	Advanced Macroeconomics (1)	3	-	3	51	-	51	-
03	Selected topics in economics	3	-	3	51	-	51	-
04	Advanced Microeconomics (2)	3	-	3	51	-	51	01
05	Advanced Macroeconomics (2)	3	-	3	51	-	51	02
	<b>Total</b>	14						

Students have to pass 8 non-core courses (Table 10) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 11. Non-Core Courses: Medical Genetics Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	

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01	Medical Genetics (1)	3	-	3	51	-	51	-
02	Medical Genetics (2)	2	1	3	34	51	85	-
03	Advanced Population Genetics	2	1	3	34	34	68	-
04	Cytogenetic (2)	2	1	3	34	34	68	-
05	Molecular Cytogenetic	1	1	2	17	34	51	-
06	Advanced Molecular Genetics	2	1	3	34	34	68	-
07	Genetic Engineering (2)	2	1	3	34	34	68	-
08	Cancer Genetics (2)	2	1	3	34	34	68	-
09	Advanced Molecular Medicine	2	-	2	34	-	34	-
10	Advanced Immunogenetics	1	1	2	17	34	51	-
	<b>Total</b>	27						

\* Students have to pass 8 non-core courses (Table 11) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

\* The course “Medical Genetics (2)” is comprised of 2 theoretical credits (34 hours) and 1 practical credit (51 hours).

**Table 12. Non-Core Courses: Pharmaceutical Biotechnology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Cellular and molecular biology	3	-	3	51	-	51	-
02	Genetic engineering and molecular genetic	3	-	3	51	-	51	-
03	Biotechnology processes (1)	2	-	2	34	-	34	-
04	Biotechnology processes (2)	2	-	2	34	-	34	-
05	Biotechnology methods	-	3	3	-	102	102	-
06	Bioinformatics	1	1	2	17	51	68	-
	<b>Total</b>	15						

\* Students have to pass 8 non-core courses (Table 12) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 13. Non-Core Courses: Medical Biotechnology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Cell Culture	1	1	2	17	34	51	-
02	Human and Plant Molecular Genetics	2	-	2	34	-	34	Cell Culture
03	Advanced Molecular biology	2	-	2	34	-	34	Cell Culture
04	Genetic engineering (1)	1	1	2	17	34	51	Human and Plant Molecular Genetics
05	Genetic engineering (2)	2	-	2	34	-	34	Genetic engineering (1)

<b>06</b>	<b>Protein engineering</b>	2	-	2	34	-	34	-
	<b>Total</b>	12						

\*Students have to pass 8 non-core courses (Table 13) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

Some of the above courses will be taught in the English language.

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**Table 14. Non-Core Courses: Pharmacology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or concurrent courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Principles of Toxicology	2	-	2	34	-	34	-
02	Immuno Pharmacology	2	-	2	34	-	34	-
03	Neuroscience	2	-	2	34	-	34	-
04	Endocrine Pharmacology	2	-	2	34	-	34	-
05	Pharmacokinetics	2	-	2	34	-	34	-
06	Advanced pharmacology of the nervous system (CNS)	2	-	2	34	-	34	-
07	Medicines affecting the heart and blood vessels Pharmacology	2	-	2	34	-	34	-
08	Chemotherapy	2	-	2	34	-	34	-
	<b>Total</b>	16						

Students have to pass 8 non-core courses (Table 14) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 15. Non-Core Courses: Sociology Courses (the Field of Economic Sociology and Development)**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Criticism of contemporary theories of sociology	2	-	2	34	-	34	-
02	Integrating theories of sociology (Theoretical sociology)	2	-	2	34	-	34	-
03	Qualitative and quantitative methods in social research	2	-	2	34	-	34	-
04	Economics sociology (required)	2	-	2	34	-	34	-
05	Urban sociology	2	-	2	34	-	34	-
06	Rural sociology	2	-	2	34	-	34	-
07	Sociology of Organizations	2	-	2	34	-	34	-
08	Socioeconomic demographics	2	-	2	34	-	34	-
09	Social Stratification and Inequality	2	-	2	34	-	34	-
10	Sociology of development	2	-	2	34	-	34	-
	<b>Total</b>	20						

Students have to pass 8 non-core courses (Table 15) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

**Table 16. Non-Core Courses: Sociology Courses (the Field of Sociology of Social Groups)**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Criticism of contemporary theories of sociology	2	-	2	34	-	34	-
02	Integrating theories of sociology (Theoretical sociology)	2	-	2	34	-	34	-
03	Qualitative and quantitative methods in social research	2	-	2	34	-	34	-
04	Groups sociology (required)	2	-	2	34	-	34	-
05	Family sociology	2	-	2	34	-	34	-
06	Health and Mental sociology	2	-	2	34	-	34	-
07	Sociology of Youth	2	-	2	34	-	34	-
08	Social psychology sociology	2	-	2	34	-	34	-
09	Sociology of women	2	-	2	34	-	34	-
10	Sociology of minorities	2	-	2	34	-	34	-
11	Sociology of persons with disabilities	2	-	2	34	-	34	-
	<b>Total</b>	22						

Students have to pass 8 non-core courses (Table 16) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.



**Table 17. Non-Core Courses: Epidemiology Courses**

Code of the course	Title of the course	Credits			Teaching Hours			Prerequisite or Concurrent Courses
		Theoretical	Practical	Total	Theoretical	Practical	Total	
01	Epidemiology 1/methods	2	-	2	34	-	34	-
02	Epidemiology 2/Scientific inference in epidemiology	2	-	2	34	-	34	-
03	Epidemiology 3/Trials	2	-	2	34	-	34	-
04	Epidemiology 4/Case-control studies	2	-	2	34	-	34	-
05	Epidemiology 5/Ecologic, descriptive and cohort studies	2	-	2	34	-	34	-
06	Statistics 2/statistics in epidemiology	2	-	2	34	-	34	-
07	Epidemiology 6/secondary studies	2	-	2	34	-	34	02,06
08	Qualitative studies	2	-	2	34	-	34	-
	<b>Total</b>	16						

Students have to pass 8 non-core courses (Table 17) based on the dissertation subject after approval by the supervisor and Postgraduate Education Council.

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