

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

Pharmacy
Degree: Bachelor of Pharmacy (B. Pharm)

Total Number of Credits

Total: 157

Prerequisites: 6

General Credits: 21

Fundamental Course: 42

Specialized: 71

Introductory Practice Experience: 4

Advanced Practice Experience: 7

Thesis: 2

Elective Credits: 5

Program Description:

Bachelor of Science in Pharmaceutical Sciences (BSPS) is a four years, eight semesters degree program that begins with a foundation of coursework in mathematics and the basic sciences, chemistry, biology, and physics. This interdisciplinary program then progresses to advanced coursework in the pharmaceutical sciences, including aspects of drug design and synthesis, mechanisms of drug action, pharmacology and toxicology, dosage formulation, manufacturing, quality assurance, and regulatory compliance. This is not a professional degree program and

completion of the BSPS degree does not qualify graduates to take the state board examination to become a registered pharmacist.

The four years, eight semesters BSPS program trains students for diverse positions in industrial, academic, or other research environments within the areas of drug discovery, development, and commercialization. It also prepares students for professional or graduate studies in graduate education in pharmaceutical, medical, and basic sciences and post-baccalaureate professional education in medicine, law, and business.

Aims and Objectives:

- To produce Pharmacy graduates with strong fundamental concepts and high technical competence in pharmaceutical sciences and technology.
- To provide students with a strong and well defined concept in the various fields of pharmaceutical sciences viz., Pharmaceutics, Pharmaceutical chemistry, Pharmacognosy, Pharmacology and Pharmacy Practice according to the requirement of pharmaceutical industries, community and hospital pharmacy.
- To develop a sense of teamwork and awareness amongst students towards the importance of interdisciplinary approach for developing competence in solving complex problems in the area of Pharmaceutical Sciences.
- To encourage the students to participate in life-long learning process for a highly productive career and to relate the concepts of Pharmaceutical Sciences towards serving the cause of the society.
- Developing students' scientific and professional skills.
- Improving students' personal and pharmacy professional skills.
- Continuous updating and improving program's curriculum.
- Encourage scientific research.
- Encourage and counsel students to further their postgraduate studies.
- Improving and developing the academic and research skills of the faculty members of staff
- Capability in smart and electronic health system

The Specific Objectives are as Follows:

- To meet the general educational, professional, and research needs in the field of pharmacy to better understand pharmaceutical sciences and better serve to the needs of the society.
- To achieve scientific capabilities in the area of research and study in pharmaceutical sciences

B. Pharm Program Outcome

- * Develop ability for in-depth analytical and critical thinking in order to identify, formulate and solve the issues related to Pharmaceutical Industry, Regulatory Agencies, Hospital Pharmacy & Community Pharmacy.
- * Develop an ability to solve, analyze and interpret data generated from Formulation Development, Quality Control & Quality Assurance.
- * Develop written and oral communication skills in order to communicate effectively the outcomes of the Pharmaceutical problems.
- * Develop team spirit, apart from responding to the social needs and professional ethics.
- * Develop an aptitude for lifelong learning and continuous professional development.
- * Develop an understanding for the need of pharmaceutical sciences and technology towards giving quality life to people in society.

Admission Requirements:

An undergraduate or a first-level university student is a student working towards a B.Pharm degree. To apply for the undergraduate level, filling out the Online Application Form and uploading high-quality scans of the following documents are required (some documents are mandatory and some are optional):

Documents with (*) symbol are mandatory.

- A letter of application or motivation in which you clearly specify your major and level of interest. Guidelines on writing a letter of motivation is available
- A Resume or C.V.
- * High School Diploma/Secondary School Certificate/Higher Secondary School Certificate with courses in biology, chemistry, Mathematics and Physics. along with its complete transcript of records (Minimum GPA of 3.00/4.00 or equivalent)
- Proficiency in English and Acceptable Scores:

IELTS with a minimum band score of 5.5 or its equivalent in TOEFL iBT (minimum 69) or TOEFL PBT (minimum 525) is required upon registration. For further information.

- * A passport-size photograph
- A high-quality scan of the main pages of your passport

Expected Competencies at the End of the Program:

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

- * To work as a responsible and professional pharmacist everywhere needed from public to hospital or industry
- * To do study and research in the field
- * To take a role in pharmaceutical marketing, policy and regulatory aspects, etc.
- * To work in the pharmaceutical and related industries (food, cosmetics, hygienic, biological products, etc.)

Educational Strategies, Methods and Techniques:

Studying B. Pharm lasts approximately four years.

Applicants are required to hold high school diploma.

Pharmacy students study basic sciences for 2 year and then, continue on specialized courses.

Student Assessment:

Students should take part at final exams for each course, separately. Some lecturers may decide to take an additional exam as midterm. The pass criteria for each exam is 50% of the total mark.

However, if the average mark for all exams taken in each semester (GPA) is less than 12 (out of 20), student's registration for the next semester would be "conditional" in which a reduced number of course could be taken again. Repetitive conditional registration may result in the student being expelled from the study.

Academic years can be extended to 12 semesters. In case of academic probation in 4 consecutive semesters or 4 alternating semesters, the student will be expelled from education. In the internship course, the acceptable score is 12. Also, the acceptable overall academic average is 12. Students are required to take 1 optional course.

General Competencies and Specific Competencies and Skills

Program Learning Outcome		Competencies
Knowledge and Understanding	K(1): Follow up on new updates in drug discoveries	<ul style="list-style-type: none"> • <u>Foundational Basic Knowledge:</u> To be able to integrate basic and pharmaceutical sciences knowledge to make medication therapy related decisions.
Intellectual Skills	I(1): Master skills in scientific, logical, critical and creative thinking and utilize such skills in professional and personal life.	<ul style="list-style-type: none"> • <u>Personal and Professional Development Competencies:</u> To demonstrate the commitment to become a lifelong learner and have the communication, managerial and marketing skills, problem solving skills, and other related skills.
		<ul style="list-style-type: none"> • <u>Industrial and Pharmaceutical Formulation Competencies:</u> To acquire the skills needed for industrial and pharmaceutical professional fields
		<ul style="list-style-type: none"> • <u>Pharmacy Practice Competencies:</u> To recommend appropriate drug therapy, to ensure therapeutic efficacy and to prevent toxicity, to have the knowledge of pharmacy practice in various fields that is to include community pharmacy, clinical, industrial, and pharmaceutical fields
General and Transferable Skills	T(1): Master communication skills in both Farsi and English languages.	<ul style="list-style-type: none"> • <u>Pharmacy Ethics Competencies:</u> To have the knowledge of local pharmacy laws, regulations, and ethics.
	T(2): Acquire skills in information technology, Internet and its various services	
	T(3): Achieve loyalty and belonging to homeland in word and deed, and develop knowledge of civil rights and social responsibility.	
	T(4): Participate in various scientific research activities and utilizing their results.	
Professional and Practical Skills	P(1): Have potential for continuous development in pharmaceutical domains.	<ul style="list-style-type: none"> • <u>Patient Care Competencies:</u> To Interpret patient's therapeutic database or medication profile, to initiate follow-up contact with patients to evaluate the effectiveness of the care plan. • Capability in smart and electronic health system
	P(2): Collaborate with other healthcare professionals.	
	P(3): Abide by the effective pharmacy practice ethics and legislations professionals.	
	P(4): Apply the pharmacy practice ethics and legislations when providing pharmaceutical services.	
	P(5): Use recent technologies in pharmacy profession.	

Total Course Credit:**Prerequisites:**

Prerequisites:		
	Credit Theoretical	Credit Practical
Chemistry	2	
Mathematics	2	
Biology	2	
Total	6	

General Courses:

General Courses		
	Credit Theoretical	Credit Practical
Introduction to Religion I	2	
Introduction to Religion II	2	
General English Language	3	
Persian Language	3	
Family Planning	1	
Divine texts	2	
Divine Ethics	2	
Iran Revolution	2	
Physical Training I		1
Physical Training II		1
Life Skills I	1	
Life Skills II	1	
Total	21	

Fundamental Course:

Fundamental Course		
	Credit Theoretical	Credit Practical
General Chemistry	3	
General Chemistry (Lab)		1
Anatomy & Histology	2	
Anatomy & Histology (Lab)		1
Physiology I	4	
Physiology II	4	
Physiology II (Lab)		1
English for B-Pharm students	3	
Organic Chemistry I	2	
Organic Chemistry I (Lab)		1
Organic Chemistry II	2	
Organic Chemistry II (Lab)		1
Biochemistry	3	
Biochemistry (Lab)		1
Medical Microbiology and Virology	2	
Medical Microbiology and Virology (Lab)		1
Parasitology & Medical Mycology	2	
Parasitology & Medical Mycology (Lab)		1
Immunology	2	
Immunology (Lab)		1
Mathematics in Pharmacy	1	
First Aid	1	1
Public Health	1	
Total	42	

Specialized:

Specialized Course		
	Credit Theoretical	Credit Practical
Pharmacology I	3	
Pharmacology II	3	
Pharmacology III	3	
Pharmaceutics I	2	1
Pharmaceutics II	3	1
Medicinal Plants	2	1
Clinical Biochemistry	2	
Medicinal Chemistry	3	
Nutraceuticals & Nutrition Care	2	
Pharmacognosy	2	1
Traditional and Alternative Medicine	2	
Biological Products	2	
Physical Pharmacy	2	
Pharmacotherapy I	3	
Pharmacotherapy II	3	
Pharmacotherapy III	3	
Biopharmacy & Pharmacokinetics	2	
Toxicology	2	1
Medical Devices	1	
Pharmaceutical Policy & Pharmacoeconomics	2	
Drug Control (Physicochemical and Microbial)	3	1
Ethics in Pharmacy	1	
Drug & Chemical Poisoning Management	2	
Clinical Pharmacy I	2	
Clinical Pharmacy II	2	
Tele Consultation for pharmacy	1	
Pharmacy warehouse	1	
Biology and Genetics	2	
Analytical Chemistry	1	1
Instrumental Methods	1	1
Total	71	

Introductory Practice Experience:

Introductory Practice Experience		
	Credit Theoretical	Credit Practical
Community Pharmacy Training I		2
Community Pharmacy Training II		2
Total		4

Advanced Practice Experience:

Advanced Practice Experience		
	Credit Theoretical	Credit Practical
Pharmacy Internship I		3
Pharmacy Internship II		3
Industrial Training		1
Total		7

Thesis:

Thesis		
	Credit Theoretical	Credit Practical
Research Project & Seminar		2
Total		2

Elective Credits:

Elective Credits:		
	Credit Theoretical	Credit Practical
Biostatistics	1	1
Radiopharmaceuticals	2	
Hygiene & Cosmetic Products	2	
Total		6

Table of the Courses:

B.Pharm: First Semester Courses				
Subject	Credit T.	Credit P.	Total Credit	Prerequisite
General Chemistry	3		3	—
General Chemistry (Lab)		1	1	—
Anatomy & Histology	2		2	—
Anatomy & Histology (Lab)		1	1	—
Physiology I	4		4	—
General English Language	3		3	—
Persian Language	3		3	—
Introduction to Religion I	2		2	—
Total Credit			19	

B.Pharm: Second Semester Courses				
Subject	Credit T.	Credit P.	Total Credit	Prerequisite
Organic Chemistry I	2		2	General Chemistry
Organic Chemistry I (Lab)		1	1	—
Biochemistry	3		3	—
Biochemistry (Lab)		1	1	—
First Aids	1	1	2	
Physiology II	4		4	Physiology I and Anatomy & Histology
Physiology II (Lab)		1	1	—
Mathematics in Pharmacy	1		1	
Immunology	2		2	—
Immunology (Lab)		1	1	—
Introduction to Religion II	2		2	Introduction to Religion I
Total Credit			20	

B.Pharm: Third Semester Courses				
Subject	Credit T.	Credit P.	Total Credit	Prerequisite
Organic Chemistry II	2		2	Organic Chemistry I
Organic Chemistry II (Lab)		1	1	
Medical Microbiology and Virology	2		2	—
Medical Microbiology and Virology (Lab)		1	1	—
Pharmacology I	3		3	Physiology II and Biochemistry & Immunology
Pharmaceutics I	2		2	Physiology II
Biology and Genetics	2		2	
Divine texts	2		2	
English for B-Pharm students	3		3	
Total Credit			18	

B.Pharm: Fourth Semester Courses				
Subject	Credit T.	Credit P.	Total Credit	Prerequisite
Clinical Biochemistry	2		2	Biochemistry
Pharmacology II	3		3	Pharmacology I
Medicinal Plants	2	1	3	Physiology II
Analytical Chemistry	2		2	
Pharmacognosy	3	1	4	Medicinal Plants
Biological Products	2		2	Pharmacology I
Clinical Pharmacy I	2		2	
Pharmaceutics II	3		3	
Physical Training I		1	1	
Public Health	1		1	
Total Credit			20	

B.Pharm: Fifth Semester Courses				
Subject	Credit.T	Credit.P	Total Credit	Prerequisite
Pharmacology III	3		3	Pharmacology I
Parasitology & Medical Mycology	2		2	Medical Microbiology and Virology
Parasitology & Medical Mycology (Lab)		1	1	Medical Microbiology and Virology (Lab)
Pharmacotherapy I	3		3	Pharmacology II
Community Pharmacy Training I (Skill Lab)		2	2	Pharmacology II
Clinical Pharmacy II	2		2	
Medicinal Chemistry I	3		3	
Nutraceuticals & Nutrition Care	2		2	
Physical Training II		1	1	
Total Credit			19	

B.Pharm: Sixth Semester Courses

Subject	Credit.T	Credit.P	Total Credit	Prerequisite
Pharmacotherapy II	3		3	Pharmacotherapy I
Medicinal Chemistry II	3		3	
Physical Pharmacy	2		2	
Biopharmacy & Pharmacokinetics	2		3	Pharmacology III
Community Pharmacy Training II		2	2	Pharmacology III & Pharmacotherapy I
Medical Devices	1		1	Pharmacotherapy II
Pharmaceutical Policy & Pharmacoeconomics	2		2	Pharmacology III
Family Planning	1		1	
Life Skills I	1		1	
Total Credit			18	

B.Pharm: Seventh Semester Courses				
Subject	Credit T	Credit P	Total Credit	Prerequisite
Ethics in Pharmacy	1		1	
Pharmacy Internship I		3	3	
Industrial Training		1	1	
Drug & Chemical Poisoning Management	2		2	
Pharmacotherapy III	3		3	
Toxicology	2	1	3	Pharmacology III
Drug Control (Microbial)	3	1	4	Medical Microbiology and Virology
Life Skills II	1		1	
Total Credit			18	

B.Pharm: Eighth Semester Courses				
Subject	Credit T	Credit P	Total Credit	Prerequisite
Instrumental Method	1	1	2	Analytical Chemistry
Pharmacy Internship II		3	3	
Traditional and Alternative Medicine	2		2	
Pharmacy warehouse	1		1	
Divine Ethics	2		2	
Tele Consaltation for pharmacy	1		1	
Iran Revolution	2		2	
Research Project & Seminar		2	2	
Elective Course I	2		2	
Total Credit			17	

Total Credits: 157

Elective Courses	
Subject	Credit T
Biostatistics	1
Radiopharmaceuticals	2
Hygiene & Cosmetic Products	2
Total	5

