



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

**Degree: Doctorate of Philosophy (PhD)**

**Total Course Credits**

Core: 28

Non-core: 2

Thesis: 20

Total: 50

**Program Description**

Traditional Pharmacy is a branch of pharmaceutical sciences in which its graduates are familiar with the Persian medicine and pharmacy, natural and traditional preparations, medicinal plants, and scientific comparison of them with modern pharmaceutical considerations along with Persian medicine, and provide education-based, research-based, and product-based services for people and society.

**Admission Requirements**

- Having a PharmD or MSc in pharmacy awarded by one of the domestic or overseas universities approved by the Ministry of Health and Medical Education.
- Passing the entrance exam and the following interview.

**Test Materials and coefficients:**

Medicinal chemistry: 1

Pharmaceutics: 1.5

Clinical pharmacy: 2

Pharmacology and toxicology: 2

Pharmacognosy and biotechnology: 3



\* For further information on the admission requirements, test materials and coefficients, in each yearly entrance exam, the latest published manual for Ph.D. entrance exam of universities of medical sciences should be followed.

### **Background and development in Iran and other parts of the world**

Traditional pharmacy in Iran has an ancient history which turns back to the time when *Ibn Masawayh* discussed different pharmaceutical dosage forms in Jundishapour university and defined it as part of Persian Medicine. Since then, this science was further developed by authoring *Qarabadin* books (pharmacopoeias). Also, there are academic majors the same as traditional pharmacy in other parts of the world such as China, India, etc.

### **Background (values and beliefs)**

In the revision of this plan, the following values are emphasized:

- Conservation of historical and native values of Iran
- Documentation and renovation of Persian medicine and pharmacy concepts
- Emphasis on the propagation of natural pharmaceutical products
- Try to achieve the fast and global development of science and technology
- Adherence to the national standards of education and research

### **Perspective (vision)**

It is expected that in the next future ten years, with educating promising, expert and knowledgeable specialists in the field of traditional pharmacy, as well as providing scientifically valid evidences, Iranian traditional pharmaceutical products find their way in the national, local, and global markets.

### **Mission**

The mission of this major is to educate traditional pharmacy specialist for educational, research, pharmaceutical, medical services, manufacturing, and management centers for recognition, explanation, propagation, and development of science and technology of traditional pharmacy, increasing the rate of scientific publications and role of traditional pharmaceutical products, natural products, and herbal medicines in the national pharmaceutical system.

### **Aims**

- Educating traditional pharmacy specialists according to the national educational, research, medical services, consultative, and manufacturing needs
- Recognition, explanation, updating, and application of traditional pharmacy knowledge and development of this major



- Expanding scientific knowledge frontiers regarding the native medicinal plants and traditional pharmacy
- Expanding university-industry collaboration

### **Expected Competencies at the End of the Program**

#### **General competencies expected of the graduates include:**

- Communication Skills
- Education
- Research and the scientific writing
- Critical thinking and problem solving skills
- Professionalism

#### **Specific Competencies and Skills**

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

- Evaluation of the primary natural materials (from herbal, animal, or mineral sources) regarding their temperaments.
- Understanding text books of Persian medicine and pharmacy
- Providing pharmaceutical care services from the Persian medicine's point of view with a focus on indication, mechanism of action, allowed daily dose, drug interactions, and adverse effects
- Identification of commonly used medicinal materials of Iran
- Quality control of medicinal materials, natural and traditional products
- Identifying adulterations of commonly used medicinal materials
- Designing formulation, production, and quality control of natural and traditional products
- Design and development of a business model based on entrepreneurship and commercialization principles

Educational Strategies:

This program is based on the following strategies:

- Task based learning
- A combination of student- and teacher-based learning
- Problem-based learning
- Hospital based learning
- Subject-directed learning
- Systematic learning
- Evidence-based learning



- Disciplinary learning with some integration as required
- Community-oriented learning

### **Educational Methods and Techniques:**

During this course, various methods and techniques will be used:

- Various intra- and intersectoral, hospital, interdisciplinary and inter-university conferences as well as seminars
- Discussion in small groups, workshops, journal clubs and reading groups as well as Case Presentation
- Participation in training lower ranks
- Self-Education, Self-Study
- Other training methods and techniques according to the requirements and objectives

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

#### **Methods of assessment**

- Written; Structured reports; Projects.

#### **Types of assessment**

- Periodic; Comprehensive (final); Monitoring the progress and completion of the thesis

### **Ethical Standards Expected of the Learners:**

#### **It is expected that learners:**

- Strictly adhere to the Patient Bill of Rights (1)
- Make provisions for the biosafety of the patients, staff and workplace (2).
- Strictly comply with the Dress Code (3).
- Carefully follow the ethical code with respect to working with animals (4).
- Protect resources and equipment used under any circumstances.
- Be respectful toward the faculty, staff, peers and other learners engaging in creating a sincere and respectful atmosphere in the workplace.
- Have considerations for the social and professional ethics in making criticism against others.
- Follow the code of ethics in research.



\*For items 1, 2, 3 and 4 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  | Number of credits |           |       | Total hours of the course |           |       |
|--------------------|--|-------------------|-----------|-------|---------------------------|-----------|-------|
|                    |  | Theoretical       | Practical | Total | Theoretical               | Practical | Total |
| 01                 | Principles of Plant Classification and Herbarium           | 1                 | 2         | 3     | 17                        | 68        | 85    |
| 02                 | Medical Information Systems*                               | 0.5               | 0.5       | 1     | 9                         | 17        | 26    |
| 03                 | Principles and practice of Persian medicine and Hifzosihha | 2                 | -         | 2     | 34                        | -         | 34    |
| 04                 | Research methodology in traditional** pharmacy             | 2                 | -         | 2     | 34                        | -         | 34    |
| 05                 | Philosophy   | 2                 | -         | 2     | 34                        | -         | 34    |
| Total              |  | 10                |           |       |                           |           |       |

\*Passing the course is obligatory for those who have not completed it previously.

\*\* Taking this course is upon providing the certificate of research methodology workshop.

**Table 2. Core course**

| Code of the course | Title of the course   | Number of credits |           |       | Total hours of the course |           |       | Prerequisite courses |
|--------------------|---|-------------------|-----------|-------|---------------------------|-----------|-------|----------------------|
|                    |   | Theoretical       | Practical | Total | Theoretical               | Practical | Total |                      |
| 06                 | Materia medica (1)  | 2                 | 1         | 3     | 34                        | 34        | 68    | 03                   |
| 07                 | Materia medica (2)  | 2                 | 1         | 3     | 34                        | 34        | 68    | 06                   |
| 08                 | Acquaintance with Traditional, Medical and Pharmaceutical Texts (1)           | 1                 | 1         | 2     | 17                        | 34        | 51    | -                    |
| 09                 | Acquaintance with Traditional, Medical and Pharmaceutical Texts (2)           | 1                 | 1         | 2     | 17                        | 34        | 51    | 08                   |
| 10                 | Persian medicine principles and practice in the treatment of common disorders | 4                 | -         | 4     | 68                        | -         | 68    | 03                   |
| 11                 | Recognition of Traditional Dosage Forms (Qarabadin) (1)                       | 2                 | -         | 2     | 34                        | -         | 34    | 06                   |
| 12                 | Recognition of Traditional Dosage Forms (Qarabadin) (2)                       | -                 | 2         | 2     | -                         | 68        | 68    | 11                   |
| 13                 | Modern methods for the formulation of natural products (1)                    | 1                 | -         | 1     | 17                        | -         | 17    | -                    |
| 14                 | Modern methods for the formulation of natural products (2)                    | -                 | 2         | 2     | -                         | 68        | 68    | 13                   |
| 15                 | Quality control of natural and traditional pharmaceutical products (1)        | 2                 | -         | 2     | 34                        | -         | 34    | 13                   |



|       |  |    |   |   |   |    |    |    |
|-------|--|----|---|---|---|----|----|----|
| 16    | Quality control of natural and traditional pharmaceutical products (2) | -  | 2 | 2 | - | 68 | 68 | 15 |
| 17    | Training course (1)  | -  | 1 | 1 | - | 51 | 51 | 06 |
| 18    | Internship   | -  | 1 | 1 | - | 68 | 68 | 12 |
| 19    | Training course (2)*   | -  | 1 | 1 | - | 51 | 51 | -  |
| 20    | Thesis   | 20 |   |   |   |    |    |    |
| Total |  | 48 |   |   |   |    |    |    |

\*Ph.D. students are supposed to pass the training course under supervision of the department of traditional pharmacy.

**Table 3. Non-core courses**

| Code of the course | Title of the course  | Number of credits |           |       | Total hours of the course |           |       | Prerequisite courses |
|--------------------|--|-------------------|-----------|-------|---------------------------|-----------|-------|----------------------|
|                    |  | Theoretical       | Practical | Total | Theoretical               | Practical | Total |                      |
| 21                 | Complementary and alternative medicine                         | 1                 | -         | 1     | 17                        | -         | 17    | -                    |
| 22                 | History of Medicine and Pharmacy in Iran and Islam             | 1                 | -         | 1     | 17                        | -         | 17    |                      |
| 23                 | Systems biology in traditional medicine and pharmacy           | 1                 | 1         | 2     | 17                        | 34        | 51    | 03                   |
| 24                 | Commercialization and entrepreneurship in traditional pharmacy | 1                 | -         | 1     | 17                        | -         | 17    | -                    |
| 25                 | Ethnopharmacology  | 2                 | -         | 2     | 34                        | -         | 34    | -                    |
| 26                 | Principles and practice on nutrition in Persian medicine       | 1                 | 1         | 2     | 17                        | 34        | 51    | 03                   |
| Total              |  | 9                 |           |       |                           |           |       |                      |

\*Ph.D. students are supposed to pass equal to 2 credits of the above courses according to the thesis title under supervision of the supervisor professor and postgraduates committee of the university.