



*In the Name of God*

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

## Cornea and External Eye Diseases

Degree: Fellowship

### Program Description

During Recent years, there have been undeniable dramatic developments in ophthalmology. Invention and application of modern equipment for surgical procedures that were inconceivable in the 1980s have become commonplace. Furthermore, the patients' expectations of new medical and surgical treatments mandated establishment of new fellowship courses. In the field of ophthalmology, the fellowship of cornea and external eye diseases is one of the most accepted courses by the international ophthalmology societies.

In 2009, the Secretariat of the Medical and Specialized education Council intended to prepare a national curriculum for fellowship courses. Accordingly, the curriculum for cornea and external eye diseases was formulated. Thus, a committee was organized to study and figure out a plan for the curriculum. This committee studied the credible international curricula, used the experts' opinions and then mapped out the present curriculum. The curriculum was discussed in the commission for educational formulation and planning and was reported to the permanent commission of the council. We will welcome the experts valuable comments for using in upcoming revisions.

### Definition of the Training Program:

This training program is one of the fields of ophthalmology subspecialty that will increase knowledge and competencies of the graduates in the prevention, diagnosis and treatment of ocular diseases pertaining to cornea, anterior segment, crystalline lens, ocular surface diseases and surgeries for correction of refractive errors.

## **Course duration**

Duration of this educational course is at least 18 months.

## **Aims:**

- 1- To train up-to-date, competent, committed liable specialists who will serve the society with their knowledge and skills to provide preventive, educational, and therapeutic-diagnostic medical services in the field of cornea and external eye diseases .
- 2- To raise the standards in the field of cornea and external eye diseases and to become one of the top ranking in the Middle East for next 10 years to the level of developed countries.

## **Language Requirements:**

- Language requirements: Evidence of English Proficiency on the TOEFL or IELTS tests. The minimum score for TOEFL PBT, TOEFL iBT and IELTS is 533, 72 and 5.5 respectively.
- Applicants from Persian (Farsi) Speaking countries (They shall both speak and write in Persian) who have applied for graduate Degree-based programs may be exempted, based on the decision of the department, from submitting any certificates regarding their English Language Proficiency. Nevertheless, they are required to hand in their English language certificate which meets SUMS' minimal language proficiency requirements, within one year from commencing their studies at SUMS.

## **Admission Requirements:**

- M.B.B.S./M.D. and specialty or equivalent certificates
- Certificate of Internship or Certificate of Practice

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

### **General Competencies \***

### **Specific Competencies and Skills**

Procedural skills (diagnostic-therapeutic measures)

a. Lens related surgical Procedures:

1. Phaco surgery in complicated cases
2. Lensectomy with or without intraocular lens implantation in neonates and children
3. Aphakic secondary IOL implantation
4. Phakic IOL implantation (Artisan and Artiflex)
5. Lens surgery in complicated cases (subluxated crystalline lenses, subluxated intraocular lenses)

Different types of repair and replacement of iris

7. Intracapsular and extracapsular cataract surgery

8. YAG laser capsulotomy

b. The corneal transplantations techniques

1. Full thickness corneal transplantation

2. Deep anterior lamellar corneal transplantation (Melles, Pre-Descemet, Big Bubble)

3. Posterior lamellar corneal transplantation (DSAEK, DMEK)

4. Different types of transplantation repair

c. The transplantation of limbal stem cells and ocular surface reconstruction

1. The amniotic membrane transplantation and related surgeries, including reconstruction of the ocular surface and fornices

2. Different types of stem cell transplantation (CLAU, KLAL)

3. Conjunctival flap

4. Tarsorrhaphy and blepharorrhaphy mucous membrane graft

5. Removal of the ocular surface neoplasms

6. Different techniques of pterygium removal surgery

d. Refractive surgeries

1. Laser refractive surgery

2. Intra-corneal ring segment implantation (optional)

3. Lenticular refractive surgery

4. Incisional surgeries for corneal astigmatism

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

### **Fellowship Trainee Assessment (Methods and Types)**

#### **a. Assessment methods**

Major methods of assistants assessment includes

DOPS

Intradepartmental assessment

Computerized PMP, if possible

The 360° test

Portfolio assessment, including logbook assessment, results of intradepartmental assessments, and assessment of research article published in an indexed journal, etc.

**b. Periods of assessment**

Continuously

**Ethical Considerations\***

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

## The overall structure of the course:

Department, unit or setting	Contents- Measures	Duration (Month)
<p>Department of Ophthalmology cornea, refractive surgery, glaucoma, emergency room, clinic, laser room, operating room)</p>	<p>Working in the eye research center in order to become familiar with different methods of research and available facilities in the center, theoretical study of anterior segment (volume 8 of the Basic and Clinical Science Course book series by American academy of ophthalmology ) and selection of at the discretion of research projects educational department and participation in oral examination The 2nd and 3rd month:</p> <p>Theory: studying and presenting scientific conferences on diseases of the eyelids, conjunctiva, and cornea and immunology of anterior segment diseases</p> <p>Practice: Performing the following procedures: routine cataract surgeries (uncomplicated), conjunctival flap, superficial keratectomy and pterygium removal, examination under anesthesia, punctual occlusion, AMT, tarsorrhaphy, blepharorrhaphy and observing or assisting in other surgeries</p>	<p>The First Quarter</p>
	<p>Theory: studying and active participation in journal clubs and presentation of at least one comprehensive scientific conference in the areas of cornea, anterior segment and refractive surgeries</p> <p>Practice: corneal transplantation (PKP) in simple cases (including tectonics), PBK, ABK, transplantation in the eyes with low vision potential, independent phaco (Fellow Case), familiarity with imaging devices in the areas of cornea and refractive surgery and glaucoma, contact lens prescription, performing more complex extracapsular and intracapsular cataract surgeries, lensectomy and anterior vitrectomy (pediatric cataract), recurrent pterygiums and beginning of the early stages of corneal transplantation</p>	<p>The Second Quarter</p>

	<p>Theory: studying and presenting practical conferences in above- mentioned subjects, performing lensectomy and anterior vitrectomy, intraocular lens implantation in pediatric cataract, iris claw lens in aphakia</p> <p>Practice: corneal transplant in keratoconus and corneal dystrophy; independently and under the supervision of department faculties of cornea and phaco service (Attending, Senior Fellow)</p>	The Third Quarter
	<p>Theory: completion of the above- mentioned cases</p> <p>Practice: Deep anterior lamellar keratoplasty (DALK) Corneal standard lamellar keratoplasty and triple procedure (PK or LK), phakic IOL</p> <p>The last month: data collection, completion and presentation of articles</p>	The Fourth Quarter
	<p>Theory: studying and presentation of theoretical subjects and presentation of the related articles</p> <p>Practice: performing refractive surgeries, Presence in the keratorefractive surgery ward, performing different refractive surgery operations (phakic IOLs, IntraCorneal Ring segments) Participation in the contact lens clinic</p>	The Fifth Quarter
	<p>Advanced corneal surgeries, including refractive correction after transplantation (KRS), DMEK, DSAEK, DSEK, intracorneal rings, excimer laser Enhancement &amp; Reoperation</p>	The Sixth Quarter

**Important Notice:**

The above features the curriculum of the Cornea and External Eye Diseases Program designed and approved by the Iranian Ministry of Health and Medical Education. Given the fact that Shiraz University of Medical Sciences is constantly improving and updating itself to meet the international academic standards and the state of the art, and based on the availability of facilities, devices, ward, laboratories, etc. at SUMS, all the SUMS curricula are approximately 20% subject to change.