


FEDERAL BUDGETARY EDUCATIONAL INSTITUTION OF HIGHER EDUCATION  
"BASHKIR STATE MEDICAL UNIVERSITY"  
MINISTRIES OF HEALTH OF THE RUSSIAN FEDERATION  
INSTITUTE OF ADDITIONAL VOCATIONAL EDUCATION

APPROVED



Rector

  
V.N. Pavlov

  
2019

**ADDITIONAL PROFESSIONAL  
QUALIFICATION PROGRAM  
BY SPECIALTY "OPHTHALMOLOGY"  
"WETLAB ON CATARACT ULTRASONIC SURGERY"  
(development period 36 academic hours)**

Ufa  
2019

### COMPOSITION OF THE WORKING GROUP

An additional professional training program for doctors with a term of 72 academic hours in the specialty "OPHTHALMOLOGY" was developed by the staff of the Department of Ophthalmology with a course IPE BSMU.

№	Surname, name, patronymic of the Scientist power	Academic position, academic degree	Rank Position	Place of work
1.	Aznabaev Bulat Maratovich	DSc, Professor	Head of the Department of Ophthalmology with a course IPE BSMU	BSMU FSBEI HE BSMU MH RF
2.	Zagidullina Aigul Shamilevna	PhD, Associate Professor	Associate Professor of the Department of Ophthalmology with a course IPE BSMU	BSMU FSBEI HE BSMU MH RF
3.	Latypova Elmira Anvarovna	PhD, Associate Professor	Associate Professor of the Department of Ophthalmology with a course IPE BSMU	BSMU FSBEI HE BSMU MH RF
4.	Mukhamadeev Timur Rafaelievich	DSc, Associate Professor	Professor of the Department of Ophthalmology with a course IPE BSMU	BSMU FSBEI HE BSMU MH RF

## 1. Explanatory Note

### *Relevance and prerequisites for the creation of the program*

The relevance of the additional professional training program “Wetlab in Cataract Ultrasound Surgery” in the specialty “Ophthalmology” is due to the continuing increase in the incidence of cataracts, the medical and social significance of the disease; improvement of surgical techniques that a modern ophthalmologist needs to master, the need to improve existing and obtain new competencies in medical practice, adapted to new economic and social conditions, taking into account international requirements and standards.

**2. The purpose and objectives** of the additional professional training program for doctors “Wetlab in Ultrasound Cataract Surgery”.

**The purpose** of the additional professional advanced training program for doctors “Wetlab in Ultrasound Cataract Surgery” in the specialty “Ophthalmology”: improving and acquiring new competencies, raising the professional level within the framework of existing qualifications, obtaining new systematic theoretical knowledge, skills and necessary professional skills (labor functions ): improving the knowledge of diagnosis and indications for surgical treatment of cataracts, training in the technique of surgical intervention, as well as studying the design and operation principles of modern phacoemulsifiers, the practical development of the cataract phacoemulsification technique when working with ophthalmologists.

### **Tasks:**

1. To master the topographic anatomy of the anterior segment of the eyeball.
2. To study the design and operation principles of modern phacoemulsifiers of various manufacturing companies.
3. Master the methods of preoperative examination of patients with cataracts.
4. To master the preparation of the patient for phacoemulsification, the main types of anesthesia.
5. To develop in detail the practical skills of performing phacoemulsification:
  - master the technique of performing self-sealing lections, the use of viscoelastics;
  - to study the basic techniques for performing capsulorexis, hydrodissection and hydrodelineation;
  - to master the skills of crushing the nucleus, aspiration of the lens masses;
  - master the technique of implantation of various types of intraocular lenses.
6. To study the tactics in the event of intraoperative complications, the method of conversion of phacoemulsification into extracapsular cataract extraction.

## 3. Qualification requirements

Higher vocational education (higher education) and:

- 1) postgraduate professional education (internship or residency) and a specialist certificate in the specialty "ophthalmology".
- 2) postgraduate professional education (vocational retraining) in the specialty “Ophthalmology” and a certificate of a specialist in the specialty “Ophthalmology”;

**4. The volume of the program:** 36 academic hours.

**5. Form of study** - full-time with internship.

**6. Planned results of training** for doctors who have successfully mastered the additional professional advanced training program for doctors “Wetlab in Cataract Ultrasound Surgery” in the specialty “Ophthalmology”:

**5.1. Description of the new labor functions (professional competencies) of an ophthalmologist, which are formed as a result of the development of an additional professional continuing education program for ophthalmologists with a term of development of 36 academic hours in the specialty “Ophthalmology”**

According to the Order of the Ministry of Health and Social Development of the Russian Federation of July 23, 2010 N 541H "On the approval of the Unified Qualification Guide for the positions of managers, specialists and employees, the section" Qualification Characteristics of the Positions of Workers in the Healthcare Sector "and the Professional Standard (Order of the Ministry of Labor of Russia dated 05.06.2017 N 470H" On the Approval of Professional standard "Ophthalmologist" (Registered in the Ministry of Justice of Russia 06.06.2017 N 47191) the ophthalmologist must: provide qualified medical care in the specialty "ophthalmology" by methods of diagnosis, treatment, prevention and rehabilitation.

As a result of the development of an additional professional continuing education program for continuing education of ophthalmologists Wetlab in Cataract Ultrasound Surgery, the student must have the following new labor functions / professional competencies (hereinafter referred to as LF / PC):

Assign treatment to patients with cataracts in accordance with established standards using modern methods of surgical treatment, monitor their effectiveness and safety, determine indications and contraindications, carry out cataract phacoemulsification, implantation of an intraocular lens; develop a plan for postoperative management of patients, as well as prophylaxis or treatment of intra- and postoperative complications (A / 02.8);

A student who has successfully mastered the program will have new professional competencies, including:

<b>Labor function (professional competence)</b>	<b>Labor activities</b>	<b>Essential Skills</b>	<b>Necessary knowledge</b>



<p>LF / 02.8 Determine the tactics of managing a patient with cataract in accordance with established standards using modern methods of surgical treatment, monitor their effectiveness and safety. Conduct prophylaxis of complications.</p>	<p>1. Develop a plan and determine the tactics of cataract patient management in accordance with established standards and clinical recommendations. 2. Determine the indications for surgical treatment of cataracts (phacoemulsification), taking into account the clinical picture. 3. Perform phacoemulsification in patients with cataract in accordance with the current procedure for the provision of medical care, clinical recommendations (treatment protocols). 4. To evaluate the results of surgical interventions in patients with cataracts, to carry out the prevention or treatment of complications.</p>	<p>1. To justify the selection of the optimal method of surgical intervention in patients with cataracts in accordance with the principles of evidence-based medicine. 2. To determine the indications and contraindications for surgical intervention in patients with cataract 3. Develop a plan for preoperative and postoperative management of cataract patients. 4. To carry out the prevention and / or treatment of postoperative complications in patients with cataracts.</p>	<p>1. Federal clinical guidelines (treatment protocols) for the provision of medical care for patients with cataract 2. Modern methods of surgical treatment of cataracts in accordance with current procedures and standards for the provision of medical care, federal clinical guidelines; indications and contraindications, possible complications. 3. Preoperative preparation and postoperative management of cataract patients 4. Indications and contraindications for surgical treatment of cataracts; principles and stages of phacoemulsification: possible complications, their prevention and treatment. 5. The mechanism of action of the main groups of drugs and medical devices used for anesthesia and prevention of complications of the surgery: indications and contraindications to the appointment; possible complications and side effects.</p>
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## 7. REQUIREMENTS FOR THE CONTENT OF THE PROGRAM

### 7.1. Curriculum

№ п/п	Name of sections, topics (sections, topics)	Total (ac.h./set. ed.)	Lectures	Practical lessons	Workshop s	Forms of control
1.	<b>Training section 1. "Modern aspects of cataract surgery. Basic principles and stages of phacoemulsification"</b>	36/1			2	Source Test control
1.1	The anatomy of the lens. Cataract. Current aspects of cataract surgery	6	2	4		
1.2	The basic principles of phacoemulsification. The device and	6	2	4		

	operation of phacoemulsifiers of various manufacturing companies.					
1.3	Preparing for the operation. Anesthesia.	3	1	2		
1.4	The main stages of phacoemulsification. Classical extracapsular cataract extraction.	7	2	5		
1.5	Cataract phacoemulsification (translation from the operating room)	6		6		
1.6	Complications of phacoemulsification. Methods of phacoemulsification in complicated and combined cases.	6	2	4		
2.	<b>Training section 2. "Training course" - internship at the workplace.</b>				6	
3.	<b>Final examination</b>	2				<b>Offset</b>
4.	<b>TOTAL</b>	<b>36/1</b>	<b>9</b>	<b>15</b>	<b>2</b>	

## 7.2. The content of the curriculum

№	Topic Title	Main Content
1	<b>Educational section 1. «Modern aspects of cataract surgery. Basic principles and stages of phacoemulsification»</b>	
1.1	Theme 1. The anatomy of the lens. Cataract. Current aspects of cataract surgery.	The anatomy of the lens. Cataract: definition, etiology, classification, course, treatment. Modern cataract surgery.
1.2	Topic 2. The basic principles of phacoemulsification. The device and operation of phacoemulsifiers of various manufacturing companies.	Physical principles of phacoemulsification. Peristaltic pump. Flow. Vacuum. Occlusion. Reflux. Diaphragm pump. Phacoemulsifiers of various companies. The device and operation of the phacoemulsifier: device body, pedal, tips. Irrigation. Aspiration. Phacofragmentation. Adjustment of parameters.
1.3	Topic 3. Preparing for the operation. Anesthesia.	Patient selection The choice of operation technique. Operating device. Preparation of the surgical field. Anesthesia. Tactics for complications.

1.4	Topic 4. The main stages of phacoemulsification. Classical extracapsular cataract extraction.	Physical principles of phacoemulsification. The main modes of operation of phacoemulsifiers of various companies. Irrigation. Aspiration. Phacofragmentation. The technique of capsulorexis. Hydrodissection and hydrodelineation. The principles of classical extracapsular cataract extraction. Modern intraocular lenses. Lens construction, implantation technique. Conversion of phacoemulsification into extracapsular cataract extraction.
1.5	Topic 5. Complications of phacoemulsification. Methods of phacoemulsification in complicated and combined cases.	Intra- and postoperative complications of phacoemulsification. Prevention of bacterial infection. Techniques for hemming the IOL with the failure of the ligamentous apparatus of the lens and rupture of the posterior capsule.
2.	<b>Training section 2. "Training course" - internship at the workplace.</b>	To master the principles of phacoemulsification (irrigation, aspiration, phacofragmentation, aspiration of the lens mass), implantation of an intraocular lens, the principles of prevention and control of intra- and postoperative complications.

7.3 Equipping jobs during the internship fully reproduces the conditions of the operation room in modern conditions. At the disposal of students: pedal-operated operating microscopes equipped with digital video cameras; eye holders and facial imitations that reproduce the size and anatomical protrusions of a person's face; phacoemulsification tool kits; viscoelastics; flexible intraocular lenses. Eucleated pig eyes are used as the object of surgery. Students make manipulations using the domestic «Optimed» phacoemulsifiers and the «Optimed Profi» universal ophthalmic surgical system.

#### 7.4 Implementation of the internship program

An additional professional program for advanced training of doctors in the specialty "Ophthalmology" is partially implemented in the form of 6 hours of the internship program. During the internship, an ophthalmologist will receive new professional knowledge and skills, labor functions in the surgical treatment of patients with cataracts.

An internship includes developing a plan and determining tactics for managing a cataract patient in accordance with established standards and clinical recommendations, determining indications for surgical treatment of cataracts (phacoemulsification) taking into account the clinical picture, evaluating the results of surgical interventions in patients with cataracts, preventing or treating complications, and visiting the operating room, assisting in performing phacoemulsification for patients with cataracts in accordance with the current implementation procedure of medical care, clinical guidelines (treatment protocols).



**Purpose of the internship** – improvement and acquisition of new labor functions (professional competencies) in the diagnosis and provision of surgical care for patients with cataracts.

During the internship, the student should have the following new labor functions (LF A/02.8):

- prescribe treatment for patients with cataracts in accordance with established standards using modern methods of surgical treatment,
- monitor their effectiveness and safety,
- determine indications and contraindications, carry out cataract phacoemulsification, implantation of an intraocular lens;
- using phacoemulsification of cataracts, implantation of an intraocular lens;
- to develop a plan for postoperative management of patients, as well as to prevent or treat intra-and postoperative complications.

The internship is carried out at the clinical base of the department - at the Optimed Center for Laser Vision Recovery «Optimed» (Ufa, 50 years of the USSR str., 8).

**Internship curator** – Professor of the Department of Ophthalmology with a course ICPO BSMU, DSc. Mukhamadeev T.R.

## **8. Forms of certification**

### **8.1. Forms of intermediate certification**

The form of intermediate certification - is testing.

#### **Examples of test tasks** (with standards of answers).

CONTROL THE CURRENT LEVEL OF KNOWLEDGE (choose one answer)

1. With cataracts, the patient complains of:

- 1) lacrimation
- 2) decreased vision
- 3) eye pain
- 4) a spot in front of the eye.

2. Phacoemulsification is indicated for:

- 1) subluxation of the lens
- 2) overripe cataract
- 3) incomplete complicated cataract
- 4) one-side aphakia

Tests for sets that control current knowledge, in addition to compiled ones, traditionally include tests that allow you to evaluate cognitive skills (comprehension, understanding, analysis, comparison, comparison, generalization).

I TYPE - questions with one most correct answer

Secondary cataract develops

- A) when the lens is displaced
- B) after extracapsular cataract extraction
- C) when combined with other malformations of the eye

II TYPE - compliance questions



For each question marked with a letter, select the appropriate answer, numbered by a number. The same answer can be used several times, once or never.

Differential diagnosis of the lens pathology/

- A) dislocation    1) complete displacement of the lens from the plane of the pupil  
 B) subluxation    2) a complex displacement of the lens from its normal position, but remains in the plane of the pupil
- 3) decrease in visual acuity
  - 4) astigmatism
  - 5) monocular diplopia
  - 6) uneven front camera
  - 7) deep front camera
  - 8) iris trembling during eyeball movements
  - 9) a lens in the form of an oil drop
  - 10) the development of hypotension of the eyeball
  - 11) the development of acute secondary glaucoma

TYPE III - Multiple Answer Questions

For this question, one or more answers are correct

A	B	C	D	E
If true all answers	If true 1, 2, 3	If true 1, 3	If true 2, 4	If only true 4

The border of the transition of the cornea into the sclera is called

- 1) trabecula
- 2) the pupil
- 3) trellis plate
- 4) limb

IV TYPE - questions for determining

Select an answer using this diagram:

Answer	Statement 1	Statement 2	communication
A	Right	Right	Right
B	Right	Right	Not true
C	Not true	Right	Not true
D	Right	Not true	Not true
E	Not true	Not true	Not true

In case of unilateral aphakia, spectacle correction is not recommended, because aniseikonia occurs due to the different distance of the glasses and the lens, leading to a violation of binocular vision.

## 8.2. Final Attestation Requirements

The final certification for an additional professional training program for doctors in the specialty "Ophthalmology" is carried out in the form of a set-off and should identify the theoretical and practical training of an ophthalmologist.

The student is admitted to the final certification after studying the training modules in the amount provided for by the curriculum of an additional professional training program for doctors in the specialty «Ophthalmology».

Persons who have mastered the additional professional program for advanced training of doctors in the specialty «Ophthalmology» and successfully passed the final certification receive a document of the established form - a certificate of professional development.

#### **Document issued after completion of training - Certificate of professional development.**

#### **8.3. Final attestation form**

The final certification on the cycle of the additional professional advanced training program for doctors «Wetlab in Cataract Ultrasound Surgery» in the specialty «Ophthalmology» is carried out in the form of a test.

#### **Offset.**

The test is an interview, evaluates the professional thinking of a specialist, his ability to solve professional problems, analyze the available information and make an appropriate decision on it.

#### **The list of sample questions for offset:**

1. The main methods of surgical treatment of cataracts. The advantages of phacoemulsification over other methods.
2. Research methods for patients with cataracts.
3. Selection of patients, indications and contraindications for phacoemulsification..
4. Features of preoperative preparation and anesthetic management for phacoemulsification in an outpatient ophthalmic clinic.
5. The basic principles of the phacoemulsifier? Modes of phacoemulsification.
6. Description of the stages of phacoemulsification.
7. Complications of phacoemulsification. Methods of phacoemulsification in complicated and combined cases.

### **8. Organizational and pedagogical conditions for the implementation of the program**

#### **Legislative and regulatory documents in accordance with the profile of the specialty:**

- Federal Law of the Russian Federation dated December 29, 2012 No. 273-FL "On Education in the Russian Federation".
- Federal Law of the Russian Federation of November 21, 2011 N 323- FL "On the basics of protecting the health of citizens in the Russian Federation".
- Order of the Ministry of Education and Science of the RF of July 1, 2013 N 499 "On approval of the Procedure for the organization and implementation of educational activities for additional professional programs".
- Order of the Ministry of Health of the Russian Federation dated August 3, 2012 N 66H "On approval of the Procedure and terms for improvement of professional knowledge and skills by medical workers and pharmaceutical workers through training in additional professional educational programs in educational and scientific organizations".

- Order of the Ministry of Health of Russia No. 707n dated 08.10.2015 “On approval of the Qualification requirements for medical and pharmaceutical workers with higher education in the area of training“ Health and Medical Sciences ”),

- Order of the Ministry of Health and Social Development of the Russian Federation of July 23, 2010 N 541H "On the approval of a unified qualification directory of positions of managers, specialists and employees, section" Qualification characteristics of the positions of workers in the field of Health ".

- Professional standard (Order of the Ministry of Labor of Russia dated 05.06.2017 N 470n "On the approval of the professional standard" Ophthalmologist "(Registered in the Ministry of Justice of Russia 06.06.2017 N 47191)

**9. Training and methodological documentation and materials for all work programs of training modules:**

**9.1. Educational visual aids**

№	Name	Amount
1.	Multimedia presentations	
1.1.	Anatomy of the organ of vision, part 1.2. Authors: Zagidullina A.Sh., Latypova E.A.	1
1.2.	Eye examination methods. Author: Zagidullina A.Sh.,	1
1.3.	The basic principles of phacoemulsification. The device and operation of the phacoemulsifier. Authors: Aznabaev B.M., Mukhamadeev T.R.	1
1.4.	Preparing for the operation. Anesthesia. Authors: Aznabaev B.M., Mukhamadeev T.R.	1
1.5.	Incisions for phacoemulsification. The use of viscoelastics. Author: Aznabaev B.M. , Mukhamadeev T.R.	1
1.6.	Capsulorexis. Authors: Aznabaev B.M., Mukhamadeev T.R.	1
1.7.	Hydrodissection, hydrodelineation. Crushing the lens nucleus. Aspiration of the lens masses. Authors: Aznabaev B.M., Mukhamadeev T.R.	1
1.8.	Complications of phacoemulsification. Authors: Aznabaev B.M., Mukhamadeev T.R.	1

9.2. The list of guidelines, teaching aids, methodological developments published by the department

№	The name of guidelines, manuals and other teaching materials	Compilers, publisher, year of publication	Security	
			Number at the department	Electronic Edition
1.	2	3	4	5

	Viscoprotectors in cataract surgery	B. M. Aznabaev et al., Ufa, 2010.	2	1
2.	Phacoemulsification with pulse-modulated ultrasound	B. M. Aznabaev et al., Ufa, 2010.	1	1

### 9.3. Internet resources:

Library of BSMU	<a href="http://bgmy.ru/biblioteka_bgmu/">http://bgmy.ru/biblioteka_bgmu/</a>
<b>Full Text Databases</b>	
Publishing house Sage	<a href="http://online.sagepub.com/">http://online.sagepub.com/</a>
Publishing house Cambridge	<a href="http://www.journals.cambridge.org/archives">http://www.journals.cambridge.org/archives</a>
Annual Reviews Sciences Collection	<a href="http://arjournals.annualreviews.org/action/showJournals">http://arjournals.annualreviews.org/action/showJournals</a>
Company Patent Database Questel	<a href="http://www.orbit.com">http://www.orbit.com</a>
US National Library of Medicine National Institutes of Health	<a href="http://www.ncbi.nlm.nih.gov/pubmed">http://www.ncbi.nlm.nih.gov/pubmed</a>
<b>Periodic publications</b>	
Bulletin of Ophthalmology	<a href="http://www.mediasphera.ru">http://www.mediasphera.ru</a>
Science Journals	<a href="http://www.sciencemag.org">http://www.sciencemag.org</a>
The New England Journal of Medicine	<a href="http://www.nejm.org">http://www.nejm.org</a>

### 9.4. Interactive learning tools electronic publications, as well as audio and video manuals

№	Name of technical training aids	Compilers, year of publication	Security	
			Number at the department	Number at the department
	1	2	3	4
1.	Video film "Phacoemulsification of cataract"	Aznabaev B.M., 2019	1	1
1.	Video film "Laser correction of ametropia"	Aznabaev B.M., 2019	1	1
3.	Video film "The use of a femtosecond laser in the correction of ametropias"	Aznabaev B.M., 2019	1	1
4.	Video film "Vitreoretinal operations"	Aznabaev B.M., 2019	1	1
5.	Video film "Complications of phacoemulsification of cataract"	Aznabaev B.M., 2017-2019	1	1

## 10. Material and technical bases ensuring the organization of all types of disciplinary training

### 12.1. Material and technical security

№	The name of technical training aids	Number at the department



1.	a computer	5
2.	notebook	3
3.	multimedia projector	2
4.	biomicroscope	3
5.	ophthalmoscope	2
6.	refractometer	1
7.	perimeter	1
8.	contact and non-contact tonometer	1
9.	operating microscope	3

Training operating room «Wetlab Cataract Ultrasound Surgery» (leased equipment: operating microscopes, phacoemulsifiers, facial models, sets of microsurgical instruments)

Distance learning system

### 10.2. The list of thematic study rooms and laboratories

№ п/п	List of premises	Amount	Area in sq. m
1.	Training room № 2-1	1	20
2.	Training room № 2-1/2	1	18
3	Training room № 2-2	1	14,8
4	Training room № 2-3	1	28,8
5	Training room № 2-5	1	21,8
6	Training room № 2-6	1	56,1
7	Diagnostic room № 2-7	1	20,0
8	Training room No. 19 GBUZ RB CCH №. 10 (Koltsevaya St., 47)	1	15
9	Training room No. 19 GBUZ RB CCH №. 10 (st. Mira, 44)	1	24
1	Scientific group, office of assistants № 2-4	1	35,5
1	Head office	1	16,3

### 10.3 Training rooms

№ п/п	List of premises	Amount	Area in sq. m
1.	Head office chair	1	16,3
2.	Diagnostic room № 2-7	1	20.0
3	Training room No. 19 GBUZ RB CCH №. 10 (Koltsevaya St., 47)	1	55.6
4	Office Head Course ICPO	1	28.8
5.	Utility rooms		22.8M <sup>2</sup> +3,4 M <sup>2</sup> +2,3 M <sup>2</sup> +4,0 M <sup>2</sup> +3,3 M <sup>2</sup> +3,3 M <sup>2</sup>

+3,9M<sup>2</sup>=43 M<sup>2</sup>

The total area of teaching facilities is 368.9 sq.m. For one listener (with a maximum simultaneous load of 10 people) is 36.9 sq.m.

#### 10.4. Clinical premises

№ n/n	List of premises Number	Amount	Number of beds	Area in sq. m
	Ophthalmology Department, including:	1		
1.	Diagnostic	2	-	80,1
2.	Facilitator	1	-	30,0
3.	Emergency room	1	-	75,7
4.	Operation unit	1	-	93,5
5.	Treatment room	2	-	30,9
6.	Dressing room	2		47,2
	Total			357,4

The total area for teaching, including the premises of the clinical base is 1870 square meters. m. For one student (with a maximum simultaneous load) is 187 square meters.

#### 11. Educational process staffing

№ n/n	Name of modules (disciplines, modules, sections, topics)	Surname, name and patronymic	Academic degree, academic rank	Primary place of work, position	Place of work and part-time position
<b>Training section 1. "Modern aspects of cataract surgery. Basic principles and stages of phacoemulsification "</b>					
1.1	Theme 1. The anatomy of the lens. Cataract. Modern aspects of cataract surgery	Zagidullina A.Sh.	PhD, Associate Professor	BSMU, Associate Professor	-
		Latypova E.A..	PhD, Associate Professor	BSMU, Associate Professor	-
2.2	Theme 2. Basic principles of phacoemulsification. The device and operation of phacoemulsifiers of various manufacturing companies.	Aznabaev B.M.	DSc, Professor	BSMU, Head of the Department	-
		Mukhamadeev T.R.	DSc	BSMU, professor	-

3.3	Theme 3. Preparation for the operation. Anesthesia.	Aznabaev B.M.	DSc, Professor	BSMU, Head of the Department	-
		Mukhamadeev T.R.	DSc	BSMU, professor	-
4.4	Theme 4. The main stages of phacoemulsification. Classical extracapsular cataract extraction.	Aznabaev B.M.	DSc, Professor	BSMU, Head of the Department	-
		Mukhamadeev T.R.	DSc	BSMU, professor	-
5.	Theme 5. Complications of phacoemulsification. Methods of phacoemulsification in complicated and combined cases.	Aznabaev B.M.	DSc, Professor	BSMU, Head of the Department	-
		Mukhamadeev T.R.	DSc	BSMU, professor	-
6.	<b>Training section 2. "Training course" - internship at the workplace.</b>	Aznabaev B.M.	DSc, Professor	BSMU, Head of the Department	-
		Mukhamadeev T.R.	DSc	BSMU, professor	-

## 12. Basic information about the program (in electronic form)

№	Marked Fields	Fields to fill
1.	Program name	«Wetlab Ultrasound Cataract Surgery»
2.	The volume of the program, including classroom hours	36 h
3.	Training options	Full-time
4.	Type of issued document after completion of training	Persons who have successfully mastered the appropriate additional professional continuing education program in the specialty "Ophthalmology" and have passed the final certification are issued a certificate of advanced training.
5.	Requirements for the level and profile of previous vocational education of students	Certificate in «Ophthalmology»
6.	Student categories	Ophthalmologist <sup>1</sup> <sup>1</sup> The order of the MH of the RF of October 8, 2015 No. 707n "On the approval of the Qualification requirements for medical and pharmaceutical workers with higher education in the field of training medicine and healthcare"

7.	The structural unit implementing the program	FSBEI HE BSMU Ministry of Health of Russia. Department of Ophthalmology with IPE course
8.	Contacts	Ufa, 50 years of the USSR str., 8. Department of Ophthalmology with IPE course, BSMU, 8 (347) 275-97-65
9.	Estimated starting period	According to the curriculum IPE course
10.	The main teaching staff	Aznabaev B.M., DSc, Professor, Head of the Department of Ophthalmology with IPE course, Mukhamadeev T.R., DSc, Professor Zagidullina A.Sh., PhD., Associate Professor Head of the ICPO course Latypova E.A., PhD., Associate Professor
11.	Annotation	<p>This program is aimed to improving existing and obtaining new competencies necessary for professional activities, and raising the professional level within the framework of the available qualifications of an ophthalmologist. It is designed to provide knowledge of new theoretical concepts about the etiology, pathogenesis of lens diseases, improving the knowledge of diagnosis and indications for surgical treatment of cataracts, and teaching the technique of surgical intervention.</p> <p>The main parts of the program are the content of the discipline, including the organization of an ophthalmic microsurgical service, the anatomy of the lens with coverage of functional and clinical research methods, a description of the techniques of microsurgical techniques for phacoemulsification of cataracts, the implantation of modern IOL models, the basics of anesthetic techniques during surgery, and the organization of technical assistance in the operating room are presented.</p> <p>The content of the program is built in accordance with the modular principle. The training cycle of the PC cycle provides for on-the-job training, including visiting the operating room, assisting in performing phacoemulsification for patients with cataracts in accordance with the current procedure for the provision of medical care, clinical recommendations (treatment protocols</p>
12.	The purpose and objectives of the program	The acquisition and improvement of knowledge of the basic principles of cataract surgical treatment, the study of the design and operation principles of modern phacoemulsifiers, as well as the acquisition of new professional competencies - the practical development of cataract phacoemulsification techniques.
13.	Sections (themes) of the curriculum of the program	<p>Training section 1. "Modern aspects of cataract surgery. Basic principles and stages of phacoemulsification. "</p> <p>Training section 2. "Training course" - internship at the workplace.</p>



14.	The uniqueness of the program, its distinctive features, advantages	<p>Information will be obtained on the modern aspects of cataract surgery, the basic principles and stages of phacoemulsification, indications and contraindications for phacoemulsification, as well as complications, the fight against them and their prevention. The basics of anesthetics during the operation, the organization of technical assistance in the operating room will be presented.</p> <p>The training process includes lectures, practical exercises. An independent practical development of the phacoemulsification technique using a set of tools for cataract surgery is planned; Optomed domestic phacoemulsifiers and Optomed Profi universal ophthalmic surgical systems, flexible intraocular lenses. Enucleated pig eyes are used as the object of surgery. The equipment of workplaces fully reproduces the conditions of the operation in modern conditions.</p> <p>During the internship at the workplace, including visiting the operating room, assisting in the implementation of phacoemulsification for patients with cataracts in accordance with the current procedure for the provision of medical care, clinical recommendations (treatment protocols).</p>
15.	Additional formation	Web link for user details