



Caucasus International University

Tbilisi, 2021

Faculty of Medicine

One-step higher medical education program in English

Medicine

0912

Modified program

Approved at the session of the academic council

18 March, 2021 year

Academic Council resolution # 01

18 March, 2021 year

1. Title of the education program

Medicine

2. Level (step) of the higher academic education

One-step higher medical education

3. Type of the educational program

Higher academic educational program

4. Field

Health and Welfare

5. Direction

Healthcare

6. Detail field

Medicine

7. Sphere of Education

Medicine

8. Program volume in credits

360 credits

9. Study duration

6 years, 12 semesters

10. Tuition form

Full-time

11. Tuition language

English

12. Qualification to be awarded

Medical doctor (MD)

13. Program Director

Tamar Giorgobiani, Medical Doctor, Associate Professor of the Faculty of Medicine, Caucasus International University.

14. Precondition for admission to the program

To support enrollees and with the purpose of mobility of students, subject to the rule and within the terms determined by the Ministry of Education and Science of Georgia, studying at higher education institutions without taking unified national exams is allowed for:

- A) Citizens of foreign countries and stateless persons who have studied abroad and acquired general education or its equivalent;
- B) Citizens of Georgia who have acquired complete general education or its equivalent abroad and studies in a foreign country for the last 2 years of general education;
- C) Foreign citizens (save to students participating in joint higher education programs or exchange education programs) studying/having studied and received credits/qualification in a foreign country at a higher education institution acknowledged in compliance with legislation of the concerned country;
- D) Citizens of Georgia (save to students participating in joint higher education programs or exchange education programs) who, for the term determined by the Ministry of Education and Science of Georgia, are living/have lived, are studying/have studied and received credits/qualification in a foreign country at a higher education institution acknowledged in compliance with legislation of the concerned country.

The mandatory precondition to enroll at the program is having level B2 in English.

To prove that command of English complies with level B2, a person is obliged to submit to the University a relevant certificate or take a test conducted by the Language Center of the University.

Georgian nationals who have passed unified national exams can be enrolled in the "Medical Educational Program in English" upon presenting B2 English language certificate, or after passing level appropriate exam.

Upon obtainment of the status of a student of Caucasus International University, a person is obliged to submit to the University a document approving complete general or equivalent education while a person being on file for military service in line with the applicable legislation shall submit a document confirming that a person is on file for military service.

Enrollment at medical Educational Program via mobility is permitted upon completion of one academic year. Mobility is allowed twice a year within the term established by the Ministry of Education and Science of Georgia with observation of obligatory procedures approved by the Act of the Director of LEPL National Center of Education Quality Enhancement and rules determined by the University.

already enrolled in the "Medical Educational Program in Georgian" can be transferred on the "Medical Educational Program in English" based on unified national exams and upon presenting B2 English language certificate.

15. The duration and volume of the study:

One academic year last **38 weeks;**

Duration of I semester is **19 weeks;**

Duration of II semester is **19 weeks;**

Out of this:

- a) **1-16 weeks** are a training period with lecture-seminars, practical and laboratory sessions, clinical practice/training, midterm exams, presentations, drafting of papers.
- b) The **17th-18th weeks** are a period of final exams;
- d) The **19th week** is used for repeated exams.

16. Goals of the program

Medical education is an important prerequisite for future successful medical practice. Reforms occurring in the country, internationalization and requirements of integrative learning is arising necessity of medical education to concur with international standards.

Presented undergraduate MD curriculum will assist in international acknowledgement of medical education taken in the country, and further, uninterrupted employment of medical graduates, also ensuring to offer higher quality medical services within the country.

The curriculum is based on sector benchmark, which is corresponding WFME standards. The compatibility of the quality of basic medical education and successful medical practice, based on international standards is important for ensuring the optimal performance of any country's health care system.

The goal of the program is to educate highly qualified medical doctors, who will be competitive both within the country and abroad.

The educational program has the following objectives: Provide the students knowledge and understanding of:

1. the basic biomedical sciences;
2. the behavioral and social sciences;
3. Public health;
4. Medical ethics, human rights and medical jurisprudence relevant to the practice of medicine;
5. The clinical sciences, including clinical skills with respect to diagnostic procedures, practical procedures, communication;
6. Treatment and prevention of disease, health promotion, rehabilitation;
7. Clinical reasoning and problem solving;
8. The ability to undertake lifelong learning;
9. In addition, demonstrate professionalism required for medical practitioner.

18. The Medical education program –360credits:

The medical education program in English is oriented towards training a student for his/her further engagement in respective adjustable profession. It is partially integrated and considers 360 credits

Program Structure credits:

Specialty mandatory education courses/ modules – 328 credits

Among them:

- basic education courses – 126 credits;
- Clinical education courses – 169 credits.
- Scientific skills mandatory courses – 12 credits;
- Clinical skills mandatory courses (among them in modules) - 21 credits.
- Specialty elective courses – 18 credits;
- General mandatory courses – 9 credits;
- General elective courses – 5credits.

19. The format of learning courses

The number of the credits for each learning course has been calculated based on its specifics, peculiarities and the volume and time needed for studying any given specific discipline.

The contact and independent working time has been calculated based on the above principles.

The professor himself/herself, with agreement with the program supervisor and quality assurance entity, assigns the hours designated for the contact-auditorium work of each training learning course. This will be reflected in the syllabus afterwards. The contact hours are allocated among various forms of activities, such as lectures, practical, laboratory, seminars, problem based and case-based learning sessions, clinical rotations, interim activities, midterm and final exams, preparation and submittal of presentations and papers. With

respect to the clinical subjects, preference is given to practical sessions during which the acquired theoretical knowledge is further reconsidered, improved and put into practice. The teaching of Clinical Courses is held by the method of clinical rotation.

20. Methods of achieving learning outcomes (learning methodology)

The goals and tasks of the learning defined within the educational program will be achieved through integration of theoretical and practical teaching.

The purpose of the lectures is to review basic topics of the learning program in theoretical light and provide students with mandatory literature and information on the methodological foundations of the discipline under study.

The purpose of the practical sessions is to help the student to enhance the theoretical knowledge obtained earlier; comprehend the essence and significance of the issue under study adequately and identify the capacities for its practical application; develop skills for analyzing and assessing objectively the factors influencing the preparation and approval of the decisions with respect to the subjects, also skills to be used for practical activities and independent work. During the training process, a particular attention is paid to using active methods of instruction.

The following methods are used during the lectures:

- **Verbal method** (oral presentation of lectures and seminars, presentation);
- **Discussion/debate** (prompting an argument among students, expressing one's own viewpoint during an interactive lecture);
- **Brainstorming** (considers stimulating the realization of the students' mental capacities, during which various ideas proposed by students are generated around one particular issue and then classified and prioritized);
- **The demonstrative method.**

During the practical sessions, the following methods will further contribute considerably to the strengthening of the obtained knowledge and the development of the skills necessary for carrying out professional activities by the student:

- **Analysis of a case or the case-based learning (CBL) method** (which describes the specific situations, requires a discussion and serves as an incentive for logical reasoning by the students);
- **Group discussion/debates** (prompting an argument among students, expressing one's own viewpoint during an interactive lecture);
- **The method of working on the book;**
- **The method of writing work**, which considers the following: test work, solution of quizzes, exercises and problems, preparation of abstracts, papers and synopses by using the main and complementary training literature);
- **Team work** (which considers forming teams each consisting of 5-6 persons within academic groups; mutual presentation of seminars and scheduled training-creative projects; development of healthy competition among the groups); bedside teaching. Conducting practical and laboratory sessions; Counseling and independent work.
- **Problem based learning (PBL)**- this method connects the learning process with decision making, problem solving skills so needed in both theoretical and practical medicine. Working with the tutor, students discuss clinical case, stating possible problems, discuss possible diagnose, diagnostic methods, treatment, plan studying, receive feedback. This method motivates for deeper understanding the concepts, look for and independently learn literature to make reasoned decisions and defend them, connect theoretical knowledge in basic subjects with clinical subjects, also develop team- working skills, essential for clinical practice.
- **The innovative information/material retrieval method;**
- **Participation in scientific research projects.**

21. Study, teaching and evaluation

Integration of theoretical and practical training, and development of clinical skills at a virtual simulation center and in a clinical environment (for junior as well as senior students). The university gives preferences to new technologies during the teaching process.

The teaching is carried out by using the following methods:

Discussion/debates, the group work, case study, the demonstrative method and the explanatory method.

After completing the educational program, the graduates shall be able to demonstrate the clinical skills acquired during the training process, independently, on the simulators or under supervision with patient.

It is very important to apply the following forms of instruction during the training process:

- Interactive lectures, seminars;
- interim exams;
- Bedside teaching;
- (PBL);
- (CBL);
- Training on simulators and molds;
- Role play of the patient and the physician;
- Laboratory study;
- Presentations;
- Clinical rotations in clinics.

Within the medical education, a considerable significance is attached to the development of clinical skills. In this regard, different kinds of simulators illustrating actual disease, a diagnostic or therapy procedure will be applied.

An essential requirement is to develop scientific research skills for students. It is important that students not only learn how to assess scientific information critically, but also to learn the basic principles for organizing, conducting and analyzing the research and presenting its outcomes. The students attend and participate in the scientific conferences organized by the university.

While assessing the knowledge and skills, there should be used oral and written tests, objective structured practical examination (OSPE), objectively structured clinical examination (OSCE) - utilizing standardized patients and/or simulators, presentation, abstract-thesis.

22. The system for evaluation of the student's knowledge

Evaluation of knowledge according to the study components of the program:

Study courses: During learning the study courses, the total grade of the work performed by the student is defined in accordance to two compound elements - interim and final exam evaluations; each of these elements has its own percentage share within the overall system of assessment;

The intermediate evaluation element is divided into components (working at the lectures and within the working group, midterm exams, preparation of the pre-selected topic and group or individual presentation, preparation of an abstract and its defense, etc.), which have their percentage share within the framework of this element;

Midterm exams are held for each subject once in a semester, each of them is evaluated by 20 points;

Based on the concrete study course specifics, it is possible to define more precisely the components of the interim evaluation element: the content and specific weight of the components are defined by the senior lecturer of the course;

The student may gather maximum 60 points by the intermediate evaluation;

The student will be allowed to pass the final exam in case of having minimum 25 points by the intermediate evaluation.

The final exam is mandatory, its specific share into the evaluation system is maximum 40 points;

The final exam is passed, if the student has minimum 20 points.

The student obtains credit in study course, if he/she has minimum 51 points, based on outcomes of intermediate evaluations and final exam.

The evaluation components and their specific share is represented in the syllabus of each course of study. Information on the evaluation system and the components is available for the students.

There are some specific issues in module evaluation. Each course of the module has interim evaluation, the integrated interim evaluation of the module is calculated from this results, and it depends on the proportion of the study course credits to the total credits of the module. For example, if the module has total 10 credits, and one of the courses is 3 credits, the interim evaluation of this course is multiplied to index 3/10. The integrated interim evaluation of the module is the sum of points, calculated in this way. The student has to gain minimum passing grade in each study course of the module, to be allowed to the integrated final exam. If the student has less than 25 points in one of the course, he/she has to retake only this course, If the student has less than 25 points in more than one study course of the module, he/she has to retake total module. This system is discussed in details in the syllabuses.

Knowledge Evaluation Forms and Grading Criteria:

- 1. At the Lectures and within the working groups (Seminars, practical and laboratory classes) Activity – maximum 30 - 40 points;**
- 2. Presentation of the pre-selected topic, Preparation and defense of abstract - maximum – 10 points;**
- 3. Midterm exam- maximum – 20 points;**
- 4. The final exam- maximum – 40 points;**
- 5. The final grade- maximum – 100 points**

Evaluation of modules:

In each course included in the module, the student receives an intermediate grade, the components of which are different for different courses, and they are described in detail in the syllabi.

The student must accumulate a minimum of 25 points out of 60 in each course to be eligible to take the module integrated final exam.

If a student scores less than 25 points in any course, he / she will not be admitted to the final exam, in which case he / she will have to repeat only this course.

The integrated interim evaluation of the module is calculated in proportion to the credit of the training course with the total credit of the module.

23. The system for evaluation of the student's knowledge/ achievements

During implementation of the program and teaching the study disciplines, the students' attainment for each discipline is evaluated by **the following system of evaluation** according to the European Credit Transfer and Accumulation System (ECTS) and approved by **the order #3 on the "Rule for calculation of the higher educational programs according to credits"** of the Minister of Education and Science of Georgia dated by **January 5, 2007:**

100-point system of evaluation has been introduced at the University

Evaluation system allows five types of positive and two types of negative evaluations:

point	Grade	
91-100 points	A	Excellent
81-90 points	B	very good
71-80 points	C	Good
61-70 points	D	Satisfactory
51-60 points	E	Enough
41-50 points	Fx	could not pass the exam(The student needs to work more to pass the exam, he/she is allowed to pass the additional exam one more time after working independently to be prepared for the exam).
0-40 points	F	Failed (the work performed by the student is not enough and he/she shall learn the subject from the beginning again).

The maximal positive grade is - 100 points, The minimal positive grade is - 51 points;
 In case of not passing the exam (Fx) student has the right to re-take the exam in the same semester not earlier than 5 days after having available the results of the final examinations.

Special mention should be made of one of the results of the program – professionalism.

Professionalism – is one of the most important competences for medical student, and thus, best practice, how to teach professionalism is one of the most important issues in Medical Education.

Developing professional elements the student begins from the first year of study, till 12-th semester.

Professionalism is assessed on different stages of learning, for this purpose different questionnaires, OSCE, 360 grade assessment, “critical case report”, Portfolio are used.

Professionalism it is difficult to evaluate, as evidenced by the numerous articles / literature dedicated to this topic.

Based on this literature review and analysis, we have developed methods for assessing professionalism that we believe are appropriate for our program and university.

24. Grade Point Average (GPA)

Academic performance of a student is determined by points scored in respect of courses of study, as well as by 4-point equivalent of mentioned points – Grade Point Average (GPA).

25. The academic degree/qualification to be awarded

The qualification to the graduated of the medical education programs shall be awarded **according to the decree of the Minister of Education and Science of Georgia as of April 10, 2019 № 96 / N on the Approval of the National Qualification Framework and Classifier of Fields of Study** .

The graduates of the educational program shall be awarded the **qualification/academic degree of the Doctor of Medicine (MD)** and shall be given a state diploma certifying the completion of respective program, together with the diploma annex determined by the state.

A pre-condition for awarding the academic degree/ qualification is gathering 360 ECTS credits by the student.

26. Issuance of a diploma certifying the qualification

In order to determine the category of a diploma for the medical educational program graduates, **cumulative GPA** shall be calculated after completion of the whole study program according to which the university awards its graduates the following diplomas:

GPA 3.5 or higher- with Honors Diploma: with a high competence level and the ability to use the obtained knowledge creatively; with positive grades in all subjects, and

Lower than GPA 3.5- regular Diploma.

For the purpose of changing the diploma category, a student may use the right to re-take the exam in the subject under question, but in no more than three subjects

27. Field of Employment

According to the applicable legislation, the graduates of undergraduate medical education program (MD) are not authorized to carry out independent medical activities independently.

In accordance with the “Law of Georgia on Medical Activities”, the “right to independent medical activities shall be exercised by a citizen or a stateless person of Georgia or a foreign country who graduated from an accredited higher medical institution of Georgia and has acquired a state certificate verifying his/her right to independent medical activities in conformity with this law` (article 7).

The field of employment for MDs are the following:

- Medical activity in the capacity of a junior doctor. The junior doctor performs the function of a doctor under the instructions and responsibility of the person authorized to carry out independent medical activities (article 5, Law of Georgia on Medical Activities);
- Pedagogic and scientific activities.

28. Opportunity of proceeding with the studies

The person holding an academic degree of MD is authorized to continue his/her studies for obtaining a doctoral degree or go through residency training and get the right to an independent medical activity after passing a unified state certification exam.

29. Material resource for implementing the program

For achieving the learning outcomes considered within the medical education program, the students can have limitless access to the university's infrastructure and logistical resources, in particular:

- **The lecture and conference halls equipped with appropriate furniture and information-communication facilities;**
- **The computer classes**, equipment switched to internet and intranet, and the computer programs relevant to the training/learning process; various technical equipment, etc.
- **The university study laboratories for chemistry, biochemistry, microbiology, immunology**
- **Clinical skills center** - In order to give the students ability to practice and improve important skills for medical practitioner, **clinical skills center** is equipped with following newest medical teaching technologies: Birthing simulator; Birthing interactive simulator with laptop; basic life support simulator for newborn; basic life support for adults, with interactive arrhythmic simulator; Auscultation trainer and smartscope; heart and lung sound simulator; manikin for patient care; Manikins for female and male urinary tract catheterization; Arm and hand manikin for intravenous injections; Simulator for intravenous injections (arm cuff); Manikin for central venous catheterization; arm manikin for sutures; simulator for trauma.
- **In 2021, a "Center for the Anti-Tumor chemotherapeutic drug Synthesis and Research " was established at Caucasus International University.**
- The **library** equipped with computer-aided equipment and information-communication technologies. The library houses a vast collection of training-methodic and scientific literature, printing and digital textbooks, the database of the fund of the books kept at the library and the digital catalogue allocated at the university's web portal. The collection of all the books preserved at the university has been fully represented within the integrated library system „openbiblio” (<http://www.ciu.edu.ge/openbiblio>).

The university has been connected to the international digital library network.

Caucasus International University has been registered as a consortium member of the participants of the association `Digital Information for Libraries– eIFL".

From 2019 it became known that the consortium, in which only state universities were involved, will expand, private universities will also have the opportunity to join the **Elsevier** system and have access to the bases - **Scopus and Science Direct**. The initiative is fully funded by the Fund.

For clinical teaching, the University has signed memoranda with various multidisciplinary clinics in Tbilisi, which provides clinical rotation in all clinical subjects covered by the curriculum.

These clinics and hospitals are:

#	Clinic
1	Ltd. # 5th clinical hospital
2	Ltd. Diacor
3	Ltd. V. Iveriel Endocrinology, Metabolism, Dietetics Center Enmedic
4	Ltd. The Mental Health Centre
5	Beritashvili experimental biomedical center
6	Infectious Diseases, AIDS and Clinical Immunology Research Center
7	K. Eristavi Experimental and clinical National Center for Surgery
8	Clinic Curatio
9	M. Iashvili Central Children's Hospital
10	Institute of Neurology and Neuropsychology
11	St. Joachim and Anna Medical Center of the Georgian Patriarchate
12	Davit TatiShvili Sports medicine and rehabilitation center
13	O. Gudushauri National Medical Center
14	Multiprofile clinical hospital named after St. Michael Archangel
15	Tbilisi central hospital (former railway hospital)
16	Allergology and immunology center
17	Ltd. Davit Metreveli medical center
18	Scientific- practical center of rheumatology named afer Academician V. Tsitlanadze
19	M. Zodelava hematology center
20	Ltd. Tbilisi pediatic private clinic
21	Institute of Bacteriophage microbiology and virology named aftr Giorgi Eliava
22	Neolab
23	Clinic Baiebi
24	Vivamedi
25	Jerarsi
26	Medison holding
27	Initisio
28	Reimann
29	Oncology Scientfic-research center (Mardaleishvili Clinic)
30	Ltd. Academician Phridon Todua medical center
31	A (A) IP "Jo Ann Medical Center"



Study course/ Module	Map of competencies		
	Knowledge and understanding	Skills	Responsibility and autonomy
Module - Body structure with clinical correlations 1 Systemic anatomy (musculoskeletal system) Introduction to diagnosis and disorders of musculoskeletal system Histology and embryology (General, bone and muscle)	X	X	X
Georgian language - 1	X	X	X
Basic communication skills	X	X	X
Module - Body structure with clinical correlations 2 Systemic anatomy (Nervous and cardiovascular systems) Introduction to diagnosis and disorders of nervous and cardiovascular systems Histology and embryology (Nervous and cardiovascular systems)	X	X	X
Biochemistry (general)	X	X	
Physiology (general)	X	X	
Georgian language -2	X	X	X
Basics of scientific research	X	X	X
Module - Body Function (Nervous system) Physiology (nervous system) Biochemistry (nervous system)	X	X	
Module - Body structure with Clinical skills of basic surgery Regional Anatomy 1 Clinical skills of basic surgery Histology (organ systems)	X	X	X
Molecular biology	X	X	

Medical bioethics	X	X	X
Medical psychology	X	X	
Clinical skills – patient care and nursing	X	X	X
Module - Body Function (organ systems)	X	X	
Physiology (organ systems)			
Biochemistry (organ systems)			
Regional anatomy II	X	X	
General pathology	X	X	X
Basic pharmacology (pharmacokinetics, -dynamics, ANS)	X	X	
General microbiology, bacteriology	X	X	
Medical genetics	X	X	
Module- Fundamentals of cardiovascular , haematopoetic , systems diseases	X	X	
<i>Pathology (haematopoetic, circulatory systems)</i>			
<i>Pharmacology ((haematopoetic, circulatory systems))</i>			
<i>Physical diagnosis ((General, circulatory, hematopoietic systems)</i>			
Module- Fundamentals of respiratory systems diseases			
<i>Systemic pathology (Respiratory System)</i>	X	X	
<i>Pharmacology (Respiratory System, antimicrobials)</i>			
<i>Physical diagnosis (Respiratory System)</i>			
Medical imaging	X	X	
Microbiology: virology, mycology, parasitology	X	X	
Basic Immunology	X	X	
Epidemiology	X	X	
Physiology of behavior	X	X	
Clinical skills- First aid	X	X	X
Module - Fundamentals of <i>Endocrine and Nervous Systems</i> diseases	X	X	

<i>Systemic pathology - of Endocrine and Nervous System</i> <i>Pharmacology (Endocrine and Nervous System)</i> <i>Physical diagnosis(Endocrine and Nervous System)</i>			
Module -Fundamentals of Digestive, Urinary Systems diseases <i>Systemic pathology - of Digestive, Urinary, Systems</i> <i>Physical diagnosis (Digestive, Urinary, Systems)</i> <i>Pharmacology (Digestive,system)</i>	X	X	
Clinical skills - Internal medicine	X	X	X
General surgery	X	X	X
Behavioral science	X	X	
Scientific research skills	X	X	X
Module - Desieses of cardiovascular and respiratory systems Internal medicine 1(Cardiology, Pulmonology) Surgery 1 (Thoracic surgery, Cardiovascular surgery)	X	X	X
Module - Desieses of genitourinary system Obstetrics and Gynecology 1 Urology Clinical skills in Obstetrics and Gynecology	X	X	X
Biostatistics	X	X	
Clinical skills (Communication)	X	X	
Anesthesiology	X	X	X
MODULE : PEDIATRICS Pediatrics 1 Clinical skills in Pediatrics	X	X	X
MODULE -DISEASES OF GASTROINTESTINAL, URINARY, ENDOCRINE SYSTEMS Internal Medicine 2 (gastroenterology, nephrology, endocrinology) Surgery 2 (abdominal , endocrine surgery)	X	X	X

Public health and Public health-care management	X	X	
MODULE- CLINICAL MEDICINE 1			
Clinical Hematology			
Oncology	X	X	X
Laboratory medicine			
Palliative care			
MODULE - BONE AND JOINT DISORDERS			
Rheumatology and systemic diseases	X	X	X
Traumatology and orthopedics			
Physical medicine and rehabilitation			
Forensic medicine and legal medical aspects	X	X	X
MODULE- EMERGENCY MEDICINE			
Clinical Toxicology	X	X	X
Emergency medicine			
Emergency Surgery			
MODULE - INFECTION, IMMUNOLOGY, DERMATOLOGY			
Infectious diseases	X	X	X
Allergology and clinical immunology			
Dermatology			
Scientific paper Writing	X	X	X
MODULE :-NERVOUS SYSTEM DISORDERS			
Neurology	X	X	X
Neurosurgery			
Psychiatry			
Geriatrics and Family medicine	X	X	X
MODULE- SENSATION ORGANS DISORDERS			
Ophthalmology	X	X	X
Otorhinolaryngology			
Module – Clinical Medicine 2			
<i>Differential diagnosis of syndromes</i>			
<i>*Clinical pharmacology</i>	X	X	X
<i>Obstetrics and Gynecology - advanced course</i>			
<i>Pediatrics - advanced course</i>			

<i>*Advanced clinical skills</i>			
Elective courses			
Latin medical terminology	X	X	
Biophysics and medical physics	X	X	
Medical chemistry	X	X	
Cell biology	X	X	
History of Medicine	X	X	
MS office programs and presentation skills	X	X	X
Hygiene	X	X	
Sociology	X	X	X
General Psychology	X	X	X
Preventive medicine	X	X	
Basics of philosophy	X		
History of world civilization	X		
Culturology	X		
Cultural anthropology	X		
Nutrientiology	X	X	
Electrocardiography	X	X	
Fundamentals of patients safety and medical service improvement	X	X	X
Clinical psychology	X	X	X
Principles of physiotherapy	X	X	X
Sports medicine	X	X	X
Major dental diseases	X	X	X
Maxillofacial surgery	X	X	X
Rational pharmacotherapy	X	X	X
Pediatric surgery	X	X	X
Neonatology	X	X	X
Substance-related disorders	X	X	X