



# University of Debrecen Medical School

## HUNGARY



Medicine, Dentistry, Pharmacy  
graduate programs  
and Public Health Postgraduate Program  
for international students in English





## PREFACE

*Debrecen is a traditional educational center in Eastern Hungary. With a population of over two hundred fifty thousand, it is the second largest city in the country. Debrecen is also well known as a holiday resort with its majestic "Great Forest" (Nagyerdő) and luxurious thermal baths. One of the main natural attractions of Hungary is the "puszta", or the Great Hungarian Plain, located in the Hortobágy National Park on the outskirts of Debrecen. This region is unmatched in Europe for its natural wonders and ethnic traditions.*

The history of higher education in Debrecen goes back to the 16th century. The city established the Calvinist College of Debrecen in 1538. The College became soon the most important cultural center of the whole country, where a great number of writers, scientists and politicians received their education. In the 18th century the schools of Law and Theology were founded and although no separate School of Medicine existed, physicians were also trained in the College.

Today's University of Debrecen Medical and Health Science Center (Medical School) is rooted in this spiritual heritage. The present day Debrecen is also famous for its schools and higher educational establishments. The Medical School of Debrecen is Central Europe's first campus medical school. It was in the year of the millennium (1896)

of Hungary's foundation when the establishment of a modern University was decided upon in Debrecen. The University was officially inaugurated on 23 October, 1918 and at that time consisted of four faculties: Arts, Science, Theology and Medicine. The Faculty of Medicine became an independent University Medical School under the supervision of the Ministry of Health in 1951.

Medical education in English started in 1987, Dentistry Program for international students in the 2000/2001 academic year and we started the Pharmacy Program in English in the 2004/2005 academic year. The curriculum of the medicine program meets all the requirements prescribed by the European medical curriculum, outlined by the Association of Medical Schools in Europe in 1993.

The clinical departments of the Medical School specialized in various fields, e.g. clinical biochemistry, internal medicine, surgery, orthopedics, radiology, neurology, neurosurgery, psychiatry, pediatrics, obstetrics and gynecology, cardiology and pulmonology, oto-rhino-laryngology, dermatology, ophthalmology, stomatology and urology. The Medical School serves as the city hospital for Debrecen therefore students of upper terms may also obtain their clinical training here.

Both medical science and medical service have entered a new era; the medical science of the 21st century, molecular medicine is opening up basically new possibilities of diagnosing, preventing, predicting and treating diseases;





we can witness a progress never seen before. Accordingly up-to-date attitudes of therapy concerned with the explanation and prevention of diseases, the preservation of health as well as the efforts to comprehend the human personality in its complexity must be enforced in its practice, which raises new requirements in all fields of higher level medical education.

The programs of the Medical School want to meet the challenges of times. They are comprehensive and encompass the whole human personality -body and soul- in its natural and social surroundings; their approach to the patients is based on the best European humanistic traditions; they are unselfish in their responsibility to the society; their basis is broad professionalism, thus preparing preventive and therapeutic activity based upon co-operation and teamwork.

Within the scope of education, we inspire both students and teachers – according to the possibilities of the free creative spirit due to the university rank – to acquire a high level of professionalism, exactness and problem solving skills, upon which the foundations of specialist training and an independent medical practice can be built, which enables them to absorb the prospective scientific development of the next decades, which facilitates further education and development of their knowledge throughout their life. The interplay of all these factors should ensure their ability of

understanding and handling the changing demands of health service in the various fields of society.

With respect to research, we will continue to acquire, internalize and subsume new knowledge especially concerning the causes, prevention and treatment of diseases, as well as new knowledge aimed at improving, preserving and restoring the healthy condition. Our objective in both the basic and clinical research – in those areas where we have already achieved it – is to remain at the internationally recognized level; on the other hand, we will strive to raise other research teams to that level. Special attention is paid to and support is provided for the co-operation of researchers between basic and clinical research projects, and researchers of interdisciplinary studies.

With respect to therapeutic practice, the objective is to achieve an effective, up-to-date and devoted curing activity, available for each member of the society, which in its quality can serve as a model for other medical institutions of the country. We consider one of its primary tasks to improve the highest standards of diagnostic and therapeutic treatment, and to establish nation-wide and regional profiles.

In service of the community, we want to play a significant role in shaping the policies of the health service both within the region and in the country.



We want to meet the requirements of the region by providing ample supply of doctors, dentists, pharmacists and other experts with university education.

With respect to development of the institute, we strive to develop and reinforce those features and skills of our organizational units, lecturers, collaborators and students which are of vital importance in meeting the challenges of medical education, research and therapy of the 21st century: humanity, empathy, social sensitivity, team-spirit, creativity, professionalism, independence, critical thinking, an ability to innovation, co-operation and management.

The organizational structure of the institution apparently reflected in the multi-faculty construction is a constantly improving, colorful educational environment, in which co-operation is manifest between medical, dental, pharmaceutical education and health service/health science college faculties, postgraduate social health educational programs as well as molecular- and medical biologist education. In order to achieve our aims both in the field of tuition and in research we utilize possibilities of integration at the Debrecen and regional institutional level at the same time contributing to its enrichment too.





## MEDICAL TRAINING

International students may study in either the English or the Hungarian Program at the Medical School of the University of Debrecen. The English Program is an integral part of the educational work at the Medical School. The curriculum parallels that of the Hungarian Medical Program.

Its stages are:

- Premedical Studies
- Medicine

### BASIC MEDICINE COURSE (Premedical Studies)

A one-year premedical (Basic Medicine) course is recommended for those not having enough knowledge in biology, physics and chemistry from high school. In addition to these subjects, courses in English, Latin and Hungarian are also included.

The requirements in the premedical science subjects, biology, physics, chemistry and mathematics are rigorous. It is recommended that students who do not have a thorough knowledge in these subjects or who need a period of preparation prior to beginning the Medicine Program join the Premedical Studies Program. In addition to scientific subjects, courses in Medical English and Hungarian are also included in the program. Students successfully finishing the Premedical Studies Program are directly admitted into the Medicine program.

### BLOCKS AND SUBJECTS

<i>Subjects</i>	<i>Credit hours</i>
Biology	165
Chemistry	180
Physics	180
Hungarian Language	60



## MEDICINE (M.D.)

Medical studies take six years (ten semesters + 1 year internship). For foreign students the language of instruction is English. However, foreign students are required to learn Hungarian in order to be able to communicate with patients from the third year on. Those students who are fluent in Hungarian may join the Hungarian Program of the Medical School.

### BLOCKS AND SUBJECTS

During **the first two years** the curriculum focuses on theoretical aspects of medicine that lay the foundation for subsequent medical subjects.

	<i>Credit hours</i>
Biophysics	105
Medical Chemistry	151
First Aid and Reanimation	21
Medical Psychology	20
Hungarian Language	120
Anatomy, Histology, Embriology	296
Molecular Biology	71
Cell Biology	75
Biochemistry	176
Physiology	211
Neurobiology	128



In the 3<sup>rd</sup> year, disciplines exploring the theoretical foundations of diseases, as well as the preliminaries of internal medicine and surgery are taught.

	<i>Credit hours</i>
Pathology	165
Immunology	60
Clinical Biochemistry	118
Microbiology	110
Prop. Internal Medicine	60
Basic Surgical Techniques	40
Medical Psychology	30
Basic Oncology	13
Medical Hungarian Language	60
Internal Medicine (Immunology, Rheumatology)	45
Prop. Of Surgery	45
Clinical Physiology	47

In the 4th and 5th years training in pharmacology begins and the study of clinical subjects continues.

	<i>Credit hours</i>
Pharmacology	119
Internal Medicine (Cardiology)	49
Preventive Medicine	171
Orthopedics	35
Radiology	21
Surgery	63
Obstetrics and Gynecology	63
Traumatology	35
Bioethics	14
Stomatology	33
Clinical Genetics	21
Internal Medicine (Endocrinology, Nephrology)	49
Urology	35
Pulmonology	42
Radiology and Nuclear Medicine	42
Internal Medicine (Gastroenterology, Metabolism)	98
Dermatology	55
Oxyology	42
Pediatrics	91
Neurology	70
Psychiatry	77
Forensic Medicine	56
Family Medicine	10
Otolaryngology	35
Ophthalmology	35
Intensive Anesthesiology	33
Infectology	35
Clinical Oncology	21

## FINAL EXAMINATIONS

During the 6th and final year students take their final examinations in internal medicine, surgery, gynecology, neurology, psychiatry and pediatrics.

Internal Medicine	10 week
Pediatrics	7 weeks
Surgery	5 weeks
Obstetrics and Gynaecology	5 weeks
Neurology	4 weeks
Psychiatry	4 weeks
Preparatory Period for the State Examination	1 month

Each final exam is preceded by a two or three month internship period. Students in the final year are required to submit a thesis. The last academic year is concluded with a comprehensive final state examination in which the future medical doctors must demonstrate their competence in the most important practical and theoretical aspects of medicine. Students having passed all examinations and having successfully defended their theses are granted an M.D. degree.

## ELECTIVE COURSES

Required elective courses form a part of the undergraduate training in medicine. These are, in the Clinical Sciences, based on clinical reality, and practical issues and aspects of direct patient care e.g., patient management, therapeutics and diagnostics. For the Theoretical Sciences these electives are based on aspects of basic research, social sciences, economic and legal sciences.







## DENTISTRY

### BLOCK AND SUBJECTS

Dental studies take five years (10 semesters).

The five year program at Debrecen has been carefully structured and designed to ensure a high standard of knowledge, skills and responsibility of dental surgeons.

During the 1st year a thorough understanding of the basic medical sciences such as Biophysics, Biochemistry and Genetics is gained and in the second year the program broadens to encompass Anatomy, Histology, Physiology and Behavioral Sciences in topics which are relevant to the practice of Dentistry. Even in the first and second years, special dental subjects (Odontology, Preventive Dentistry, Dental Materials and Technics) are taught.

In the third year, disciplines exploring the theoretical foundations of diseases, such as Pathology, Pathophysiology and Microbiology are taught with aspects related to Oral Sciences. In the same year Propedeutics of Clinical Dentistry introduces various dental procedures and techniques involved in the clinical treatment of patients by laboratory demonstrations and in the phantom head room.

1<sup>st</sup> and 2<sup>nd</sup> year

	<i>Credit hours</i>
Biophysics	105
Medical Chemistry	151
Medical Psychology	20
Odontology	30
Hungarian Language	120
First Aid and Reanimation	21
Oral Anatomy	85
Genetics	90
Molecular Biology	71
Cell Biology	75
Preventive Dentistry	30
Anatomy, Histology, Embryology	140
Biochemistry	176
Physiology	189
Dental Materials	30
Neurobiology	128
Introduction to the fixed Prosthodontics	30

3<sup>rd</sup> year

	<i>Credit hours</i>
Pathology	172
Clinical Physiology	38
Immunology	48
Clinical Biochemistry	33
Microbiology	60
Surgery	45
Propedeutics and Technology of Fixed Prosthodontics	75
Oral Biology	30
Cariology Propedeutics	45
Medical Hungarian Language	60
Basic Surgical Techniques	18
Medical Psychology	45
Bioethics	15
Propedeutics and Technology of Total and Partial Removable Dentures	75
Endodontics Propedeutics	60
Oral Radiology	41
Oral Surgery Propedeutics	45

In the 4th year, students begin to treat patients in the Clinical Practice Unit and other special clinical departments. They are introduced to all clinical dental fields (Restorative Dentistry, Prosthetic Dentistry, Periodontology, Oral Surgery, Oral Medicine,



## DENTISTRY

4<sup>th</sup>, 5<sup>th</sup> year

	<i>Credit hours</i>
Pharmacology	90
Internal Medicine	90
Preventive Medicine	60
Dermatology	15
Otolaryngology	15
Pediatric Dentistry	135
Periodontology	93
Prosthetic Dentistry	120
Oral Surgery	198
Restaurative Dentistry Cariology	45
Traumatology	10
Oxyology	44
Restaurative Dentistry Endodontics	45
Orthodontics	60
Pediatrics	30
Neurology	20
Psychiatry	10
Forensic Medicine	30
Ophthalmology	15
Gynecology	15
Praxis Management	12
Endodontics	90
Cariology	84
Oral Medicine	30
Prosthetics Dentistry	174

Paedodontics and Orthodontics). During the 4th and 5th years students take responsibility for treating their own patients in small-group practice classes under the close supervision of staff members.

Parallel to the dental courses, other clinical medical sciences are also included within the curriculum.

By the end of the 5th year dental students are required to submit and defend a thesis and take a final examination.

Students having passed all examinations and having successfully defended their theses are granted a D.M.D. degree.



## PHARMACY

### MISSION STATEMENT

The main goal of the Faculty of Pharmacy is to improve education and to promote the creation of new courses and educational structures in the interest of creating an ever more rational training program and to gain access to the various fields of the health sciences within the European Union, including pharmacy education.

The primary mission of the College of Pharmacy, the University of Debrecen, is to serve the pharmaceutical health care needs of Hungary and foreign countries by educating pharmacists to provide contemporary as well as innovative pharmacy services. The College of Pharmacy offers a dynamic curriculum, which includes a broad base of both didactic and experimental components, enabling the graduate to develop practical skills that will enable him or her to function effectively and efficiently in a changing and challenging health care environment all over the world. Consistent with this mission, contribution to the body of pharmaceutical knowledge through scholarly activity and service are also important goals.



### THE FUTURE OF PHARMACY AND PHARMACISTS

Pharmacists are trained in the clinical use and application of drugs, the therapeutic goals of drug use, their formulations, contraindications, adverse effects, and potential for drug interactions. As drugs have become more potent and specific and information more plentiful, pharmacists have assumed a primary responsibility for monitoring drug therapy. Because the professional role of the pharmacist has become integral to modern health care, education in this field is constantly evolving.



<i>Subjects (1st and 2nd Year)</i>	<i>Credit hours</i>
Mathematics	60
Physics	45
General Chemistry Theory	45
General Chemistry Practice	75
Pharmaceutical Biology	116
Hungarian Language	120
Pharmaceutical Latin Language	60
Pharmaceutical Propedeutics	15
Inorganic and Qualitative Analytical Chemistry Theory	45
Inorganic and Qualitative Analytical Chemistry Practice	90
Biophysics	44
Physical Chemistry	90
Organic Chemistry Theory	120
Organic Chemistry Practice	116
Pharmaceutical Anatomy	75
Pharmaceutical Botany Theory	30
Pharmaceutical Botany Practice	30
Quantitative Analytical Chemistry Theory	75
Human Physiology	105
Basic Biochemistry	45
Colloid and Surface Chemistry Theory	28
Colloid and Surface Chemistry Practice	28
Quantitative Analytical Chemistry Practice	75
Pharmaceutical Biochemistry	50
Pharmaceutical Technology Theory	30
Pharmaceutical Technology Practice	60
Pharmacognosy Theory	30
Pharmacognosy Practice	60

<i>3rd Year</i>	
Pharmaceutical Technology Theory	60
Pharmaceutical Technology Practice	240
Pharmaceutical Neurobiology	65
Complex Pathology	135
Pharmacognosy Theory	30
Pharmacognosy Practice	60
Pharmaceutical Chemistry Theory	105
Pharmaceutical Chemistry Practice	60
Immunology	37
Hungarian Language	60

## PHARMACY

Pharmacists are active in primary patient care activities such as hypertension screening, therapy with over-the-counter products, patient profiles, and drug regimens review. They understand the health care needs of specialized patient groups, such as children and the elderly. In addition to a thorough familiarity with the nature of the drugs they work with, pharmacists must also be people-oriented. Their professional training must consider both the medication and the patient, with emphasis on making certain that the patient has the right drug, in the right amount, for the right length of time, and with a minimum of adverse effects. Most pharmacists practice in patient-oriented settings, which include:

- The community (which includes self-employment),
- Hospitals,
- The extended health care facility or public health clinics,

Other opportunities for employment of pharmacists exist in the following areas:

1. Pharmaceutical industries in research and development,
2. Manufacturing industries,
3. As medical service representatives,
4. Educational institutions, government agencies, health maintenance organizations, and home-based health care programs.

As in the other health professions, pharmacy practices are subject to fairly rigorous legal regulatory codes. In Hungary, state laws limit practice to those who have been duly licensed by the state. Qualifications for licensure are:

- Graduation from an accredited college of pharmacy,
- Completion of a required internship program,
- A passing grade on an examination conducted by the University Board of Pharmacy.

The College of Pharmacy of Debrecen University has a dual admission program for undergraduate studies, and for a select number of highly motivated, qualified students interested in pursuing both undergraduate and professional studies in Pharmacy and health care related education. Candidates must maintain a specified grade point average and achieve acceptable scores for graduation. This allows the best students to receive their Doctorates (Ph.D.) of Pharmacy within a certain period of time after graduation. This is usually a 3-year period after receiving the undergraduate degree.



## RESEARCH WORK

There is a considerable amount of scientific research being carried out at the Medical School. Students interested in medical research are encouraged to join ongoing research projects.

Scientific work is done at the departments for basic sciences and laboratories of clinical departments. The faculty members of the Medical School publish about 600 scientific papers in international scientific journals per year. According to scientometric data the Medical School of Debrecen is among the 4 best ones of the more than 80 Hungarian research institutions and Universities. Many of our scientists could reach international recognition exploiting the possibilities provided by internal and international collaborations. Internationally acknowledged research areas are cell biology, immunology, experimental and clinical oncology, hematology, neurobiology and neurology, physiology. The scientific exchange program involves numerous foreign universities and large proportion of our staff is actively involved in programs that make use of foreign connections.





## PH.D. DEGREE AND SPECIALIZATION

After graduation outstanding students may continue their education by joining one of the ongoing research projects being conducted by clinical or theoretical departments. Successful completion of research work will lead to the awarding of a Ph.D. degree.

Specialization courses are offered for Medical School graduates for further studies. Our recently accredited Ph.D. program includes the following topics:

- Molecular and Cell Biology: Mechanism of Signal Transduction
- Microbiology and Pharmacology
- Biophysics
- Physiology-Neurobiology
- Experimental and Clinical Investigations in Hematology and Hemostasis
- Epidemiological and clinical epidemiological studies
- Cell and Molecular Biology: Study of activity of cells and tissues in healthy and pathological conditions
- Immunology
- Experimental and Clinical Oncology
- Public Health
- Preventive Medicine
- Dental Research

The Ph.D.-programs are run by more than 100 accredited highly qualified coordinators and tutors.

## MEDICAL ACTIVITY AT THE DEBRECEN MEDICAL SCHOOL

The Medical School is also one of the largest hospitals in Hungary. There are 18 different clinical departments with more than 1800 beds. It is not only the best equipped institution in the area, but also represents the most important health care facility for day-to-day medical care in this region. This includes, beside other services, an adult hemodialysis center, open-heart surgery facilities and a kidney transplantation unit.

The Kenézy Gyula County Hospital (with approx. 1400 beds) is strongly affiliated with the Medical School and plays an important role in teaching the practical aspects of medicine. The Department of Obstetrics and Gynecology of the Medical School has been an official reference center of the WHO for many years. There is also a close contact between the University and other health institutions of its district. We have a Teaching Hospital Network of 10 hospitals in nearby counties.

It is also of importance that the Medical School can rely upon the collaboration with the Nuclear Research Institute of the Hungarian Academy of Sciences in Debrecen. They coordinate the work that is related to the use of their cyclotron with respect to diagnostic and therapeutic procedures (e.g., Positron Emission Tomography).





## ACCREDITATION

Education at Debrecen Medical School is accredited by the World Health Organization, US Department of Education, The State Education Department (NY, USA), Medical Board of California ([www.medbd.ca.gov/Applicant\\_Schools\\_Recognized.htm#H](http://www.medbd.ca.gov/Applicant_Schools_Recognized.htm#H)), the General Medicine Council (UK – PLAB exam is compulsory), Medical Councils of Israel, Ireland, Iran and Norway. In most European countries – not listed above – and also in India the diploma of the University of Debrecen, Medical and Health Science Center is accepted for registration purposes; however a qualifying exam is compulsory.

### CREDIT SYSTEM

The introduction of credit system, starting in September, 2003 has been made compulsory in every Hungarian University. It serves the quantitative and qualitative evaluation of a student's achievement. A credit point is a relative index of cumulative work



invested in a compulsory, required or elective subject listed in the curriculum.

Credit based training is flexible. It provides students wider range of choices, enables them to make progress at an individual pace, and it also offers students a chance to study a compulsory or required subject at a different university, or even abroad. Owing to the flexible credit accumulation system, 'repetition of a year' does not make sense any longer.

