



Erasmus+



HUMAN  
RESOURCE  
DEVELOPMENT  
CENTRE

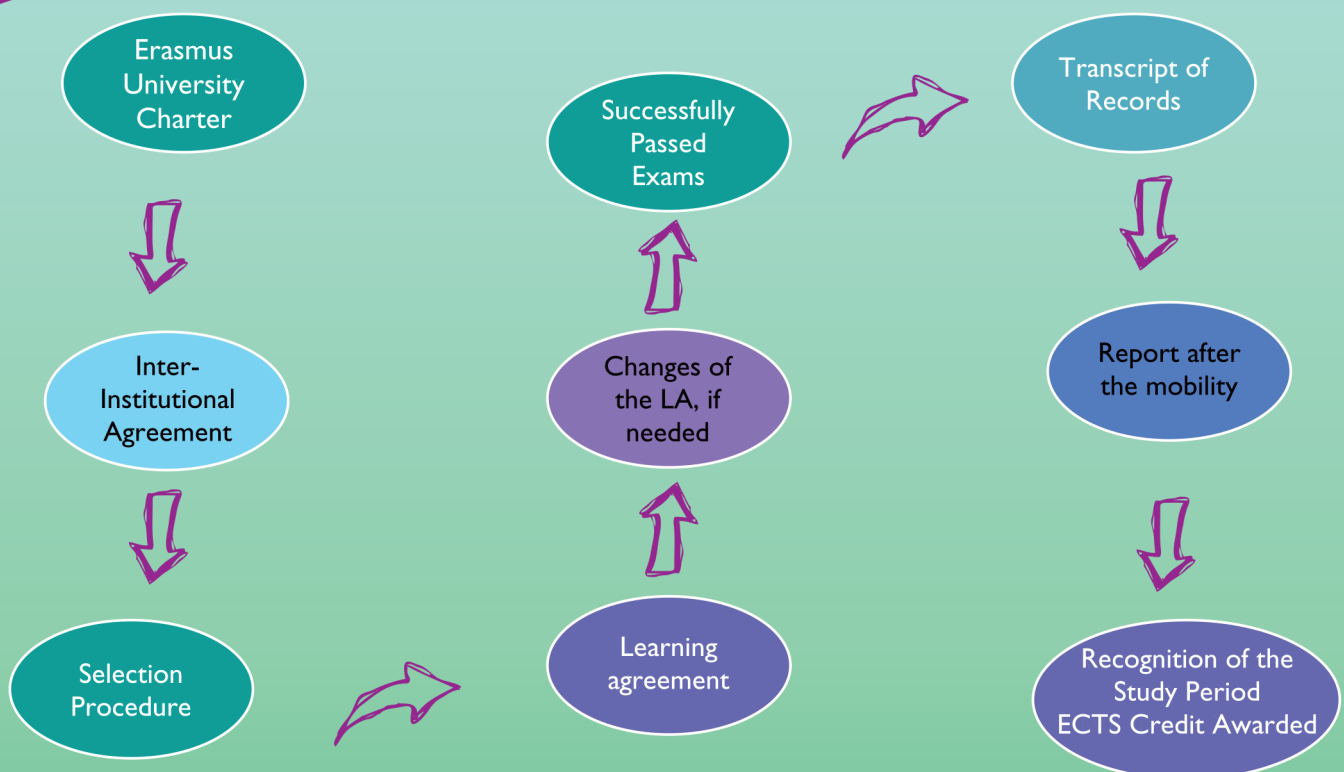
# EUROPEAN CREDIT TRANSFER SYSTEM

## AT MEDICAL UNIVERSITY – SOFIA

The Common Language of Recognition



## MEDICAL UNIVERSITY - SOFIA



**European Credit Transfer System at Medical University – Sofia**  
**The Common Language of Recognition**

**Dear Students,**

**It is my pleasure to welcome you at the 100 years old Medical University in Bulgaria!**

**I would like to invite you to experience with us one of the most popular mobility schemes in Europe – Erasmus+.**

**Medical University - Sofia is highly esteemed and the undisputed leader in its area of education in all five professional fields showed the new fifth consecutive ranking of universities in the country for 2017. It is №1 in each of five areas of study: Medicine, Dental Medicine, Pharmacy, Health Care and Public Health. The Institutional accreditation: granted by the National Evaluation and Accreditation Agency for a period of 6 years, rating: 9.68 out of 10 points.**



**According the institutional strategy for internationalization and the Erasmus Policy Statement and Erasmus Charter of Medical University – Sofia – all the Study Programmes in Medicine, Dental Medicine and Pharmacy are taught in parallel both English and Bulgarian languages. As it is stated in the Agenda for the Modernization of Europe's Higher education systems, globalization and digitalization emerged as important "mega trends" affecting higher education institutions directly and the world for which they are preparing graduates. For that reason each year the Curricula are updated with new educational modules, exploring the Intersection of Regulation, Medicine, Science, and Law to meet the needs of a changing scientific and policy landscape. They have been structured to explicate core competencies in medical science and technology through illustrative case studies.**

**The Medical University – Sofia explores the modular system of education and the bedside learning with a lot of hours of clinical practice. This is the reason the MU-Sofia to attract more & more Incoming students. Both Incoming and Outgoing students highly appreciate the bedside learning and the higher horarium of clinical practice at MU-Sofia.**

**Quality assurance and the contribution to European and international level are confirmed by the long list of graduates, including former Erasmus ones, employed in prestigious hospitals and health care institutions worldwide.**

**Erasmus mobility helps to fulfill one of the major objectives set up in the Institutional Strategy for Internationalization of Medical University – Sofia to build up the „Global" doctor, possessing the following skills:**

- **Understanding and tolerance for human diversity, multiculturalism and religious affiliation.**
- **Ability to work in an international perspective.**
- **Knowledge of a second language/languages.**
- **General knowledge outside the field of medicine**
- **Strengthening the knowledge triangle (education, research, innovation).**

**PROF. DR. VICTOR ZLATKOV, MD  
RECTOR OF MEDICAL UNIVERSITY - SOFIA**

# **Medical University – Sofia - Rectorate**

*15, Akad. Ivan Geshov Blvd., 1431 Sofia, Bulgaria*

## **Rector**

Prof. Dr. Victor Zlatkov, MD, PhD

*Phone (+359-2) 9523 791, Fax (+359-2)9532 816*

*E-mail: rector@mu-sofia.bg*

## **Vice Rector**

### **in Charge of Students' Education**

Prof. Tihomira Zlatanova, MD, PhD

*Phone (+359-2) 9523 798,*

*Fax (+359-2) 9532 898*

*E-mail: tzlatanova@mu-sofia.bg*

## **Vice Rector**

### **in Charge of Science and Research**

Prof. Valentina Petkova, PhD, DSc

*Phone (+359-2) 9152 163,*

*Fax (+359-2) 954 11 53*

*E-mail: vpetkova@pharmfac.mu-sofia.bg*

## **Vice Rector**

### **in Charge of Postgraduate Studies, University Hospital Coordination, International Integration, and Project Funding**

Prof. Radomir Ugrinov, DDM, PhD, DSc

*Phone (+359 2) 9152 180, Fax: +359 2) 9152 167*

*E-mail: rugrinov@mu-sofia.bg*

## **Head of International Integration and Project Funding Department**

Prof. Radoslav Girchev, MD, PhD, DSc

*Phone (+359 2)9152 165, (+359 2)8510892*

*E-mail: girchev@mu-sofia.bg*

## **Erasmus Office**

**Institutional Erasmus & ECTS Coordinator:**

Savena Borisova, PhD

*Phone (+359-2)9152 138*

*E-mail: sborisova@mu-sofia.bg*

Simeon Manolov - smanolov@mu-sofia.bg, *Phone + 359 2 9152 138*

Tanya Todorova - ttodorova@mu-sofia.bg, *Phone + 359 2 9152 165*



# ECTS GUIDE

## MEDICAL UNIVERSITY – SOFIA



The Medical University - Sofia is the oldest National Higher Medical Education institution. It was founded by Decree of His Majesty King Ferdinand in 1917.

The Medical University of Sofia comprises four faculties. These are the Faculty of Medicine, Dental Medicine, Pharmacy and Public Health, the Central Medical Library, the Medical College for education of paramedics (social workers, X-ray technicians, laboratory technicians, assistant pharmacists, dental technicians, etc.) and the Language Training and Sport Center. Fifteen University hospitals are associated as clinical educational bases at the University. More than 82,000 medical specialists have graduated the Medical University of Sofia since its foundation including 10,500 international students from more than 80 countries.

The fundamental goals of the University are the superior education of under-, post-graduate and PhD students, scientific research and the provision of specialized, highly qualified and modern health care. The Medical University of Sofia is internationally recognized for the achievements in cardio-thoracic surgery, neurosurgery, ophthalmic surgery, high-tech diagnostics, prevention programmes for cardio-vascular and inherited diseases, bone-marrow transplantation, development of new compounds of synthetic and natural origin, etc.

The main objectives of the University are to provide high-quality education in an environment supported by research; to preserve and strengthen its position as educational and scientific institution of the highest international quality; to inspire high professional and humane virtues of its graduates in the spirits of the European democracy and tolerance; to foster the formation of high quality lecturers and instructors and improve their effectiveness.

The aims and objectives of the Erasmus mobility project are set in line with the European Union flagship initiatives: Youth on the Move; Education and Training 2020 Agenda and the Renewed modernization agenda of Europe's higher education systems in compliance with the specific national and institutional needs and challenges listed in the National Strategy for Higher Education and the Institutional Strategy for internationalization and the Erasmus Policy Statement of Medical University – Sofia.

As stated in the main institutional documents, listed above the quality and relevance of learning and teaching is the main priority of Medical University – Sofia. For that reason EDUCATIONAL GOALS AND LEARNING OUTCOMES have been set up and adopted at a meeting of the Faculty Council of the Faculty of Medicine at the Medical University - Sofia on 27/09/2013: <http://medfac.mu-sofia.com/?q=node/257>.

Medical University –Sofia start to exchange students since 2000, when Erasmus Programme has been open for participation for Bulgaria as a pre-accession country in 1999.

For the period of 18 years more than 135 Erasmus Inter-institutional Agreements have been signed with partner universities from 25 Programme countries and 8 Partner Countries.

During the 18 years Erasmus history out of 100 years of Medical University – Sofia, 550 Outgoing students have been sent and 380 Incoming students received. The number of students who have spent time abroad for studies and/or internship during their full degree study at Medical University – Sofia is fairly stable over time. The last two years the number of Incoming students exceeds the Outgoing ones. This is due to the fact that the education at Medical University – Sofia explores the patients' bedside learning approach. A lot of practical hours are included in the curriculum. During their study the students practice at the 15<sup>th</sup> university hospitals under the supervision of highly qualified Professors. This opportunity is greatly appreciated by the students from our partner universities.

Additionally 130 Teaching staff has the opportunity to realize a teaching and/or training Erasmus period at more than 81 partner universities in 25 Programme and Partner counties. Most training periods abroad were undertaken by academic staff for teaching (75 %) followed by general administrative staff, including international office (25 %).

Teaching assignment mobility contribute to achieving the objectives set in the strategy of internationalization of the Medical University - Sofia, developed in accordance with the EU Programme for the Modernisation of 2011 and its priority areas and implementation of the Communiqué 2013 on "Open Education", in particular: improving the quality of education through mobility and cross-border cooperation. Particular emphasis is placed on mobility of teachers, in order to:

- provide support to promote the development of new ways of learning, in particular the integration of a wide variety of ways of learning through new forms of personalized learning, strategic implementation of educational resources, free access platforms and virtual learning;
- Internationalization of the Medicine curriculum at Medical University – Sofia with the ones from European and non-European countries.
- Exchange of research knowledge and results and development of joint research and educational projects.

The European Community promotes co-operation between universities as a means of improving the quality of education for the benefit of students and higher education institutions, and student mobility is the predominant element of the cooperation. The recognition of studies and diplomas is a prerequisite for the creation of an Open European area of education and training where students and teachers can move without obstacles. That is why The European Credit Transfer System (ECTS) has been developed as a means of improving academic recognition for study abroad.

## **ECTS - EUROPEAN CREDIT TRANSFER SYSTEM**

### **What is ECTS?**

ECTS, the European Credit Transfer System, developed by the Commission of the European Communities, is designed to provide common procedures to guarantee academic recognition of studies abroad. It provides a way of measuring and comparing learning achievements of students by using commonly acknowledged measurements, credits and grades, and transferring them from one institution to another and thus widening the choices available to students. In itself, ECTS in no way regulates the content, structure or equivalence of study programmes.

ECTS is a decentralized system, based on the principle of mutual trust and confidence between the participating education institutions. The few rules of ECTS, concerning *Information* (on courses available), *Agreement* (between the home and host institutions) and the *Use of Credit Points* (to indicate student workload) are set out to reinforce this mutual trust and confidence.

### **ECTS credits**

In general, the ECTS credits are a value allocated to the course units. ECTS credits represent the workload of a given course or year of academic study at the institution, including lectures, practical work, seminars, individual work (in the library or at home), and examinations or other assessment activities. Sixty ECTS credits represent the workload of an academic year of study, normally 30 credits are given for a semester. No special courses are set up for ECTS purposes, all courses are compulsory courses for the home students at the participating institutions. Credits are also allocated to elective courses, project work, thesis, and practical placements, which form an integral part of the degree programme.

ECTS credits are allocated to the course units only in case the students successfully completed the course by satisfying the assessment requirements.

In the academic year 2004/2005 the credit system, compatible with the ECTS, was introduced –at the Medical University of Sofia – at the Faculties of Medicine, Dental Medicine, Pharmacy, and Public Health.

## **THE EUROPEAN CREDIT TRANSFER SYSTEM AT MU-SOFIA**

1. The Regulation № 21/30.09.2004 of the Ministry of Education and Science authorized the credit system to be implemented for all the students at the Medical University of Sofia.
2. Each student at the Medical University of Sofia should earn 60 credits per year from:
  - Compulsory courses;
  - Participation in scientific research programs;
  - Authorship of scientific reports;
  - Elective courses (modules).
3. Credits are a digital representation of students' workload and the learning outcomes of their study. Credits are awarded upon completing and passing the course with minimum grade 3 (Satisfactory) assessed through exams or other forms of evaluation for acquired knowledge and skills according to the education plan.
4. The elective courses are chosen by the students according to their personal interests from a number of optional courses in the curriculum. A minimum of earned credits is mandatory for all students.
5. The elective course training is organized by the Course Supervisor and by the department in authority. The syllabus and schedules for each class are presented to the Dean's Office in the beginning of the school year.

6. The Head of the Department in authority issues certificates for completion and passing the elective courses. A list of the successfully completed the course students is sent to the Dean's Office at the end of the academic year. The course supervisor is responsible for entering the credits in the student's academic record.

7. The student is awarded credits for participation in scientific research after presenting to the Education Department at the Dean's Office a copy of an abstract, publication and/or projects accompanied by an official confirmation from the Department or the Project Principal Investigator that the student has been part of the project/research team in the time period.

8. On condition the student was not awarded with the required credits for the school year, the option is a provisional authentication of the year completion. In this case, the required credits should be obtained in the following year.

9. The students are enrolled in an elective course or a project at the Department in authority. The responsible persons are the Course Supervisor or the Project Principal Investigator.

### **Description of the institutional grading system**

Local grade	Local definition	ECTS grade
6	Excellent	A
5	Very Good	B
4	Good	C
3	Satisfactory	DE
2	Poor (Fail)	FX
		F

# GENERAL PRACTICAL INFORMATION

## Academic calendar

The academic year at the Medical University runs from mid-September to late December (Autumn semester) and from mid-February to the beginning of June (Summer semester). Winter examinations are from the beginning of January to the beginning of February. Summer examination session is from mid-June to mid-July.

The academic year is as follows: *Autumn semester*: mid- September to December 28

*Summer semester*: mid- February to May 31

The clinical studies for the medical students are organized in a module teaching system from September up to end of July. **Official holidays**

January 1 – New Year

March 3 – Bulgaria’s National Day, which celebrates the liberation from Ottoman rule

Easter (Orthodox Easter is based on the Julian calendar, which often differs from the Gregorian calendar)

May 1 – Labour Day

May 6 – Bulgarian Army Day

May 24 – Day of Bulgarian Enlightenment, Culture and the Cyrillic Script

September 6 – Bulgaria’s Unification Day

September 22 – Independence Day

December 24, 25, 26 - Christmas

## International Students

1. *Exchange students in the frame of the Erasmus+ programme (Erasmus+Incoming Students)*. The Medical University of Sofia works within the Erasmus + program with ..universities. Students with Bulgarian language proficiency are welcome. In addition, the Medical University of Sofia offers master programs in Medicine, Dental Medicine and Pharmacy in English. Erasmus+ exchange students from universities under bilateral agreement are admitted for up to two years of studies/training; the minimum stay is three months. The international Erasmus+ students are helped by Bulgarian buddies in any everyday problems. There is an option to apply for accommodation at the University dormitory. Since the number of rooms is restricted the incoming students should apply for this option with the application procedure for admission.

2. *International students*. Foreign citizens are admitted to the Medical University of Sofia in accordance with the terms and conditions of the Law on Higher Education and of the Ordinance on State Requirements for Enrollment of Students in Higher Education Institutions of the Republic of Bulgaria. The candidates are eligible in case they have completed secondary school education in their home country with a diploma required for admission in a higher education institution. In addition, the applicants should **have grades in Biology and Chemistry in their secondary education diploma or an equivalent of the diploma for secondary education document.**

A preparatory academic year is organized and carried out by the Language Training and Sport Center at Medical University – Sofia. The curriculum includes courses in Bulgarian language, English language and special language training for improvement of the English language skills in Biology, Chemistry, Anatomy and Physiology.

Foreign citizens who declare Bulgarian or English language knowledge pass a test-exam for evaluation of the level of their language proficiency.

Detailed description of the Application Procedure and the required documents for admission is on the website of the Medical University of Sofia: <http://mu-sofia.bg/en/node/384>.

### **Admission and Registration of Erasmus+ Incoming Students**

The required documents for incoming Erasmus+ students at Medical University of Sofia are:

- Standard Student Application Form
- Learning Agreement for Studies/Traineeship
- Three passport photographs
- Valid transcript of academic records

The deadline for the application procedure is June 15<sup>th</sup> for students applying for the entire academic year or for the first semester of the respective academic year only, and by December 1<sup>st</sup> for students applying for the second semester. Upon arrival all incoming students should report to the Office of International Relations at the University. In addition, the incoming students should register with the respective Faculty offices. The admission of the applying Erasmus+ candidates is based on their satisfactory for the Medical University of Sofia standards adequate background knowledge and academic ability to pursue successfully the proposed programme of study. Erasmus+ students do not pay for their tuition, yet accommodation at the dormitory is paid for.

### **Host country formalities**

According to the Law of Foreigners Stay in the Republic of Bulgaria every foreigner may enter the country with a valid passport and an entry visa for Bulgaria. Entry visas are issued in all Bulgarian diplomatic missions abroad. No visas are required from citizens of countries from the European Union and a number of other countries as well. Upon arrival in Bulgaria every foreigner (if not accommodated in a hotel) should register in the Passport Service for Foreigners (Sofia, 48 Maria Louisa Blvd.) to receive a residence permit. Those foreigners who are admitted as students in the University should present their documents for admission issued by the University.

### **Accommodation**

Accommodation for Erasmus+ Incoming students can be arranged in several ways:

- *Students' dormitory* – Incoming Erasmus+ students, may apply for the students' dormitory. Limited number of rooms is available – first come, first served. Please state your preference in the Application Form - <http://mu-sofia.bg/en/node/642>.
- *Private flats* – A common option for foreign students is to rent a flat within easy reach of the university on a monthly fee. The cost depends on the size, comfort, location of the housing and varies from 200€- 350 €(monthly). The rent excludes electricity, phone and central heating costs.
- *Private rooms*. Contact Erasmus+ Student Network (ESN) – Bulgaria for help with the accommodation for finding private rooms from 80 – 150 Euros (monthly). The rent excludes electricity, phone and central heating costs.

For more details contact: <http://www.esnbg.org/>; <https://www.facebook.com/esnbulgaria>;  
e-mail: [bulgaria@esnbg.org](mailto:bulgaria@esnbg.org) .

The International Office of the University will help incoming Erasmus+ students in finding the accommodation that suits their preferences best: <http://mu-sofia.bg/en/node/639?>

### **Banks and Currency exchange**

The lev (Bulgarian: лев, plural: leva, levove/лева, левове) is the currency of Bulgaria, which equals 100 stotinki. Banknote denominations include 2, 5, 10, 20, 50 and 100 leva, as well as coins of smaller denominations. One Euro is equal to 1, 95583 leva. The exchange rate to the USD and other currencies is announced every day. Many local banks and currency exchange offices function in the capital and in the big cities as well. Big international banks have offices in Sofia: BNP-Paribas, Dresdner Bank, Raiffeisen Bank, ING Bank, National Bank of Greece, Societe Generale Expressbank, etc. Near the university main building you can find branches of Bulgarian banks – Postbank, Fibank (First Investment Bank), Unicredit Bulbank, etc. The banks are usually open between 9.00 a.m. and 5.00 p.m. Automated Teller Machines (ATMs) are plentiful in most cities and will accept cards issued by any of the major international banking networks (Visa, MasterCard, American Express, etc.). Credit or debit cards are accepted in most of the hotels, shops, supermarkets, etc.

### **Catering facilities**

The various catering establishments in Sofia can satisfy the different tastes and needs of its visitors. Along with local specials Italian, Chinese, Indian, Mexican food can be found. Most restaurants are open 11.00 a.m. – 24.00 p.m. Around the main university building there are small restaurants and cafeterias offering traditional Bulgarian cuisine, as well as fast food places where you could get a proper meal for as much as 2.50 – 4 Euro. On average daily food expenses could vary, depending on personal choice – from 2.50-10 Euro. All food stores work usually until 19.00 or 20.00. There are also 24 hour open stores, and stores working on Saturdays and Sundays.

### **Health insurance**

Foreign students are advised to get medical insurance in their home country or in one of the numerous Bulgarian insurance companies. It will cover medical treatment and stay at a hospital here, should the need arise. There are many clinics and private medical offices where medical help is offered at quite reasonable price.

### **Library**

All faculties of the Medical University - Sofia provide an access to Internet and e-mail for students in their computer rooms. Moreover, in the Central Medical Library, there is a computer room which offers free access to data bases, Internet, and a number of multimedia products and videos. The Library has a fund of more than 750 000 volumes, offers computerized book catalogue of the books, issued after 1990, and an access to more than 800 periodicals. The Library has a reading room with 35 seats, a student reading room with 40 seats.

### **Sports facilities**

The Medical University has a multipurpose gymnasium, which offers excellent conditions for aerobics, basketball, bodybuilding, badminton, volleyball, and calanetics. The open-air playgrounds are used for football, basketball, and volleyball. Students may use the tennis court and the swimming pool of the sport club "Academic".

## Cost of living

To give an idea of the cost of living in Bulgaria, an estimated monthly budget (in BG Leva; exchange rate 1 Euro=1.95 BG Leva) as in 2018 might be as follows:

<b>Item</b>	<b>Expenditure</b> in Euro (average per month)
<u>Food</u>	<u>150 - 250</u>
<u>Accommodation</u>	<u>100 - 250</u>
<u>Local public transportation</u>	<u>11 - 25</u>



# FACULTY OF MEDICINE



*Address: 1, St. Georgi Sofiyski str.  
Sofia-1431, Bulgaria  
<http://www.medfac.acad.bg>*

**Dean: Prof. Ivan Mitov, MD, PhD, DSc, Correspondent member of the Bulgarian Academy of Sciences** *Phone (+359-2) 9521-046,  
E-mail: [dean@medfac.mu-sofia.bg](mailto:dean@medfac.mu-sofia.bg)*

**Faculty Coordinator:** Assoc. Prof. Dr. Nina Belova, MD, PhD  
*Phone (+359-2)9172 624, Fax (+359-2) 952 03 37  
E-mail: [nina.belova@mu-sofia.com](mailto:nina.belova@mu-sofia.com)*

The Faculty of Medicine consists of 47 departments and clinical centers. More than 800 academic and research fellows, the innovative equipment and modern views guarantee the educational, diagnostic and curative, and scientific activities.

The complete course of medical education lasts six years and is organized in three stages. Preclinical training provides the students with the fundamental biological and medical knowledge, offering the basis for their clinical training. Clinical training is aimed at acquisition of knowledge and skills in diagnostics and treatment. Clinical education at the Medical Faculty after the third year is organized in a modular system. Pregraduation practice is carried out under the form of rotations at the departments of the University hospitals. It aims at the application of knowledge and skills at the patient bedside and at the outpatient's clinics. The final state examination comprises five exams in Internal Medicine, Surgery, Pediatrics, Obstetrics and Gynecology, and Hygiene and Ecology. The successful graduates are conferred the "Master" degree and qualification "Physician"

*The subjects studied during the first year of the programme are Anatomy and Histology; Cytology; Biology; Physics; Chemistry; Medical Ethics; Latin language; Foreign Language; Sport.*

*The second year the students continue their studies in Anatomy and Histology and Foreign language plus Biophysics; Biochemistry; Physiology; Medical Informatics and Biostatistics; Social Medicine; Medical Psychology; Microbiology.*

*Clinical education starts the third year with Propaedeutics of Internal Medicine and General and Operative Surgery; in addition the students continue with Microbiology and start training in General Pathology; Pharmacology; Pathophysiology; Medical Genetics; and Medicine of Disasters.*

*In the fourth and fifth years* the education is organized in a modular system and covers the subjects Internal Diseases and Therapy; Surgery; Clinical Pathology; Pediatrics; Obstetrics and Gynecology; Neurology; Dermatology and Venerology; Ophthalmology; Oto-Rhino-Laryngology; General Medicine; Neurosurgery; Orthopedics and Traumatology; Imaging diagnostics, Nuclear medicine and Oncology; Clinical Laboratory and Clinical Immunology; Clinical Pharmacology; Hygiene, Ecology and Occupational Diseases.

*In the sixth year* the modules are in Psychiatry; Urology; Anesthesiology and Reanimation; Epidemiology, Infectious Diseases, Medical Parasitology and Tropical Diseases; Physical Therapy and Rehabilitation; Forensic Medicine and Deontology. The programme also includes clinical clerkships (rotations) in Internal Medicine; Surgery; Pediatrics; Obstetrics and Gynecology; General Medicine; Hygiene, Infectious Diseases, Epidemiology and Social Medicine.

The Medical Faculty has 57 accredited PhD programs for 3 years full time studies or 4 year part time studies.

The Medical Faculty is a basis for 3 to 5 year postgraduate education in 52 medical specialties. The postgraduate qualification is acknowledged after a final examination in front of a State Examination Commission.

## DISCIPLINES

**BIOLOGY:** ECTS credits 8.2

**Horarium:**

<b>Semester 1</b>	Lectures	45	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 2</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Contents:** Structure of the living organism, heredity, variation, immunological homeostasis. Sexual reproduction; individual development. Biological evaluation. Antropogenesis. Ecology. Evolution of invertebrates with elements of medical parasitology. Comparative anatomy of invertebrates. Normal human and animal karyotype. Methods of population genetics. Incidence of mutations, selection, migration, isolation, genetic drift, inbreeding coefficient. Immune genetics.

**Assessment:** W/O, semester 2<sup>nd</sup>

\*\*\*

**MEDICAL PHYSICS:** ECTS credits 5.8

**Horarium:**

<b>Semester 1</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15
<b>Semester 2</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Contents:** Mechanics, acoustics, molecular physics. Electricity and magnetism. Optics. Ionization radiation. Measurements during microscopy. Evaluation of the microscopic object mean size. Photometric parameters and measurements. Refractions in liquids. Principles of the optical atomic and molecular spectral analysis. Activity of the radioactive source. Radionuclide semi-decay period. Main parameters in medical radiology.

**Assessment:** W/O, semester 2<sup>nd</sup>

\*\*\*

**MEDICAL CHEMISTRY:** ECTS credits 5.8

**Horarium:**

<b>Semester 1</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15
<b>Semester 2</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Contents:** Chemical linkage and structure of the molecule. Complex compounds: structure and function. Chemical kinetics. Enzyme catalysis. Chemical equilibrium. Disperse systems. Acid-base equilibrium. Hydrolysis. Buffers. Electron transfer processes. Biological oxidation. Relationship between the structure and features of the organic substances. Lipids, phospholipids, carbohydrates, amino acids and nucleic acids: structures and features. Heterocyclic compounds. Compounds possessing steroid skeleton.

**Assessment:** W/O, semester 2<sup>nd</sup>

\*\*\*

**LATIN LANGUAGE:** ECTS credits 4.9

**Horarium:** Practicals 60 Weeks 30

**Semesters:** 1 and 2

**Objectives:** General knowledge of the Latin language in the field of medicine.

**Contents:** Substantives and adjectives with their declension. Word formation, prefixes, suffixes and terms of Latin and Greek origin. Prescriptions - general principles, abbreviations. General principles in the clinical nomenclature and officinal forms.

**Assessment:** Ongoing assessment, semester 2<sup>nd</sup>.

\*\*\*

**HUMAN ANATOMY AND HISTOLOGY:** ECTS credits 21. 0

**Horarium:**

<b>Semester 1</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 2</b>	Lectures	45	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 3</b>	Lectures	45	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 4</b>	Lectures	45	Weeks	15
	Practicals	30	Weeks	15

**Semesters:** 1<sup>st</sup>, 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup>

**Contents:** Bone and muscular system. Digestive system. Respiratory system. Urinary system. Reproductive system. Endocrine system. Cardiovascular system. Lymphatic system and the organs of haematopoiesis. Central nervous system. Autonomous nervous system. Skin and the breasts. Sensory organs. Topographic anatomy of the head, neck, trunk, upper and lower extremities.

**Assessment:** W/O, semester 4<sup>th</sup>

\*\*\*

**HUMAN CYTOLOGY, GENERAL HISTOLOGY AND EMBRYOLOGY: ECTS credits 6.6**

<b>Horarium:</b>	Lectures	45	Weeks	15
	Practicals	45	Weeks	15

**Semester:** 1

**Contents:** General principles of the cytological and histological examination, external and internal morphology of the cell. Cell membrane, membrane cellular organelles, nonmembrane cellular organelles. Physiology of the cell. General histology. General embryology.

**Assessment:** W/O, semester 1<sup>st</sup>

\*\*\*

**BIOPHYSICS: ECTS credits 4.0**

<b>Horarium:</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Semester:** 3

**Contents:** Biophysics of the complex sensory systems. Biological thermodynamics. Biological membranes. Transport processes. Electrogenesis in the living cells. Electrokinetic phenomena. Free radicals in the living systems. Biomechanics phenomena.

**Assessment:** W/O, semester 3<sup>rd</sup>

\*\*\*

**MEDICAL PSYCHOLOGY: ECTS credits 1.2**

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Semester:** 3<sup>rd</sup>

**Contents:** The course aims to acquaint students with the contribution that the science of psychology has to the medical practice. Students acquire basic skills to establish a therapeutic conduct, therapeutic communication, needed for therapeutic collaboration .

**Assessment:** W/O, semester 3<sup>rd</sup>

\*\*\*

**MEDICAL BIOCHEMISTRY: ECTS credits 10.4**

**Horarium:**

<b>Semester 3</b>	Lectures	60	Weeks	15
	Practicals	45	Weeks	15
<b>Semester 4</b>	Lectures	60	Weeks	15
	Practicals	45	Weeks	15

**Contents:** Enzymes. Biopolymers (proteins and nucleic acids). Bioenergetics. Citric acid cycle. Glycolysis. Carbohydrate metabolism. Metabolism of lipids. Aminoacid metabolism. Relationship between different metabolic pathways. General regulation of metabolism in the organism. Hormones, growth factors, cytokines: molecular mechanisms of the action. Molecular mechanisms of diabetes. Liver biochemistry. Muscular tissue biochemistry. Molecular biology and pathology. Carcinogenesis. Molecular genetics.

**Assessment:** W/O, semester 4<sup>th</sup>

\*\*\*

**Horarium:**

<b>Semester 3</b>	Lectures	45	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 4</b>	Lectures	60	Weeks	15
	Practicals	60	Weeks	15

**Semesters:** 3<sup>rd</sup> and 4<sup>th</sup>

**Contents:** Homeostasis. Physiology of the neuron. Intercellular communication. Physiology of muscle: skeletal, smooth, cardiac. Cardiovascular physiology. Blood flow and arterial pressure regulation. Blood. Regulation of erythropoiesis. Pulmonary ventilation. Gas diffusion and transport. Gastrointestinal physiology: motor function, secretion, digestion and absorption. Physiology of the kidney. Mechanisms of urine formation. Central nervous system: motor, sensory, autonomic and integrative functions. Physiology of the endocrine system.

**Assessment:** W/O, semester 4<sup>th</sup>

\*\*\*

**BIOSTATISTICS AND MEDICAL INFORMATICS:** ECTS credits 2.3

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Semester:** 3<sup>rd</sup>

**Contents:** Stages in information processing. Information transfer. Computers. Means for information transfer and processing. Computer networks. Logical principles of programming. Disk operation system. WINDOWS operation environment. Databases. Expert systems. Statistic evaluation of the medical and biological phenomena.

**Assessment:** Ongoing assessment, semester 3<sup>rd</sup>

\*\*\*

**MEDICAL ETHICS:** ECTS credits 3.2

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Semesters:** 1

**Contents:** Biological and social dimensions in human life. Health and disease. Medical ethical problems related to the reproductive behavior. Paternalism and autonomy in medicine. Relationships between physician and patient. Physicians' confidentiality. Ethical and deontological dilemmas in medicine. Ethics, law and health policy.

**Assessment:** Ongoing assessment, semester 1<sup>st</sup>

\*\*\*

**BULGARIAN LANGUAGE FOR INTERNATIONAL STUDENTS:** ECTS credits 6.3

<b>Horarium:</b>	Practicals	120	Weeks	30
<b>Semesters:</b>	1, 2			

**Contents:** The language education in the Medical Faculty is obligatory. The students choose one of the following languages: French, German and Russian. Foreign language education requires the knowledge and skills, acquired during the secondary education. The aims are: To provide knowledge and ability to (1) read and translate specialized literature in the field of medicine, (2) make summaries using the foreign language, (3) carry on conservation on medical problems.

**Assessment:** Ongoing assessment, semester 4<sup>th</sup>.

\*\*\*

**STUDENTS' SPORT:** ECTS credits 4.6

<b>Horarium:</b>	Practicals	90	Weeks	45
<b>Semesters:</b>	1,2 and 3			

**Contents:** To help students and their teachers to balance weekly the mental load and the emotions, related to sport activities. There are three forms of sport activity: standard term classes; competitive classes; additional courses on water and winter sports after the terms. Term classes: aerobics, badminton, basketball, bodybuilding, volleyball, calanetics, swimming, skiing, tennis, table tennis, and football. Yearly the Department organizes sea and mountain courses during the holidays. The students can practice yachting, sculling, surfing, and swimming. The students can acquire skiing skills (at two different levels) and practice tourism.

\*\*\*

**SOCIAL MEDICINE:** ECTS credits 5. 2

**Horarium:**

<b>Semester 4</b>	Lectures	30	Weeks	15
	Practicals	15	Weeks	15
<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Semesters:** 4<sup>th</sup> and 5<sup>th</sup>

**Contents:** General methods of Social Medicine. Sociological information in medicine and health services. Primary sociological information collection. Public health. Physical health as a public health index. Morbidity. Medical and social problems in diseases leading to temporal inability to work and disability. Life style and health. International collaboration and international health organizations. Health care as a social system, fundamentals of health policy and legislation. Types of health care systems. Health care management. Management of human resources in the health institutions. Organizations and effectiveness of the work of physicians. Organization of medical care of population. Social and medical problems in the pensioners and the elderly. Working capacity assessment. Population health culture and behavior.

**Assessment:** W/O, semester 5<sup>th</sup>

\*\*\*

### **MEDICAL MICROBIOLOGY: ECTS credits 7.7**

#### **Horarium:**

<b>Semester 4</b>	Lectures	60	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Semesters:** 4<sup>th</sup> and 5<sup>th</sup>

**Contents:** Taxonomy of bacteria. Morphology of bacteria. Physiology of bacteria. Viruses - structure and biological characteristics. Genetics of the bacteria and phages. Chemotherapy - principles. Resistance of the microorganisms. Infection, infectious process, infectious disease. Immunity. Natural resistance. Acquired immunity. Antigens. Antigenic structure of the microorganisms. Immune response. Cellular immunity. Immune pathology. Immunoprophylaxis and immunotherapy. Vaccines and serums – types. Immunization Calendar in the Republic of Bulgaria. Immunomodulation.

**Assessment:** W/O, semester 5<sup>th</sup>

\*\*\*

### **MEDICINE OF DISASTERS: ECTS credits 2.3**

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Semester:** 5<sup>th</sup>

**Contents:** General characteristics of the disasters. Organization of the defense of the population. Organization of the medical care in disasters. Planning and management. Radioecology. Biological action of the ionizing radiation in external irradiation. Biological action during radionuclide incorporation into the organism. Principles of the treatment of acute poisoning. Radiation injuries. Methods and means of detection of toxic substances and gas cleaning.

**Assessment:** Ongoing assessment, semester 5<sup>th</sup>

\*\*\*

### **MEDICAL GENETICS: ECTS credits 2.9**

<b>Horarium:</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Semester:** 5<sup>th</sup>

**Contents:** Methods of genetic examination. Mutagens and teratogens. Chromosomal diseases. Molecular diseases. Hereditary errors in metabolism. Pharmacogenetics. Immune response genetic control. Genetic polymorphism. Polygene. Inborn malformations. Genetics of mental insufficiency. Genetic predisposition to malignant diseases. Medical genetic consultation. Prenatal diagnostics. Genetic screening and monitoring. Organization of the genetic prevention in the country and the tasks of the medical practitioners.

**Assessment:** W/O, semester 5<sup>th</sup>

\*\*\*

**PATHOPHYSIOLOGY: ECTS credits 6.8**

<b>Horarium:</b>	Lectures	60	Weeks	30
	Practicals	60	Weeks	30

**Semesters:** 5<sup>th</sup> and 6<sup>th</sup>

**Contents:** Health and disease. Terminal states. General etiology. General pathogenesis. Peripheral circulation and microcirculation. Reactivity and resistance. Immune reactivity. Hypoxia. Inflammation. Fever. Pathological physiology of the blood, respiratory, cardiovascular, and digestive system; liver, urinary, endocrine, and nervous systems.

**Assessment:** W/O, semester 6<sup>th</sup>

\*\*\*

**PHARMACOLOGY: ECTS credits 8.6****Horarium:**

<b>Semester 5</b>	Lectures	45	Weeks	15
	Practicals	45	Weeks	15

<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Semesters:** 5<sup>th</sup> and 6<sup>th</sup>

**Contents:** General principles of pharmacology: pharmacokinetics, drug interaction, toxicology. Chemical mediators: cholinergic and adrenergic transmission and other peripheral mediators. Neurotransmission. Neuropsychopharmacology. Drugs used in treating motor disorders: Epilepsy, Parkinsonism. Central and local anesthetics. Analgetics. Cardiovascular pharmacology. Diuretics. Haemopoiesis. Haemostasis. Anti-coagulants. Pharmacology of the respiratory system. Gastro-intestinal pharmacology. Endocrine system pharmacology. Reproductive system. Chemotherapy: antibacterial, antiviral. Antifungal, antiprotozoal, antihelminthic agents. Cancer chemotherapy. Immunopharmacology.

**Assessment:** W/O, semester 6<sup>th</sup>

\*\*\*

**GENERAL PATHOLOGY: ECTS credits 0****Horarium:**

<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

<b>Semester 6</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Semesters:** 5<sup>th</sup> and 6<sup>th</sup>

**Contents:** Injuries of the cell and intercellular matrix. Necrosis. Circulatory disturbances. Inflammation. Immunotherapy. Compensatory and reparative processes. Tumors. Abnormalities in the development of the organism.

**Assessment:** 0

\*\*\*

**PROPEDEUTICS OF INTERNAL DISEASES: ECTS credits 11.6****Horarium:**

<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	90	Weeks	15



<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	90	Weeks	15

**Semesters:** 5<sup>th</sup> and 6<sup>th</sup>

**Contents:** Initial examination of the patient. History. Status. Physical methods of patient examination. Main syndromes and symptoms in the respiratory system diseases. Main symptoms and syndromes in cardiovascular system diseases. Disease manifestations and methods of examination of the gastrointestinal system. Liver. Bile ducts. Pancreas. Principal symptoms and syndromes. Main diseases. Principal symptoms and syndromes in urinary system diseases; methods of examination. Haematopoietic system. Endocrine system. Insulin-producing apparatus. Diabetes mellitus. Hypoglycaemia. Other disorders of the metabolism. Diseases of the muscles, joints, and bones.

**Assessment:** W/O, semester 6<sup>th</sup>

\*\*\*

#### **GENERAL AND OPERATIVE SURGERY: ECTS credits 8.6**

**Horarium:**

<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15

**Semesters:** 5<sup>th</sup> and 6<sup>th</sup>

**Contents:** Surgical department (clinic) organization and planning. Surgical instruments. Suture materials. Dressing and additional materials. Surgical clothing. Antiseptics and aseptics. Surgical operation. Main procedures and interventions in surgery. Puncture. Sounding. Tomia, incision, excision, stomia, anastomosis, bypass, resection, amputation. Main principles of transplantation. Organ transplantation. Anaesthesia. Local anaesthesia. Pain and pain relief. Resuscitation. Shock. Clinical death. Traumatic diseases. Bleeding. Blood transfusion. Surgery, AIDS, Hepatitis B. Surgical infection. Surgical oncology. Necrosis and gangrene. Ulcer and fistula. Surgical endoscopy. Endoscopic surgery.

**Assessment:** W/O, Semester 6<sup>th</sup>

\*\*\*

#### **IMAGING DIAGNOSTICS, NUCLEAR MEDICINE AND ONCOLOGY (Module):**

ECTS credits 5.0

**Horarium:** Lectures - 40 hours  
Practicals - 95 hours

**Study period:** Year 4<sup>th</sup>, module teaching system - duration 3 weeks

**Contents:** Techniques for X-ray examination. Radiological investigation of the central nervous system, urinary tract and bones. Basic theory and principles of the nuclear medicine.

Radio pharmaceuticals. Equipment. Radioimmunologic analysis. Nuclear diagnostics of the urinary tract, respiratory system, cardiovascular system, haematopoietic organs, digestive tract, locomotory system, and nervous system. Radioactivity. Clinical dosimetry. Radio biologic actions of the ionizing radiation. Indications and contraindications for radiotherapy.

**Assessment:** W/O, Year 4<sup>th</sup>

\*\*\*

**OTO-RHINO-LARYNGOLOGY (Module):** ECTS credits 3.6

**Horarium:** Lectures - 30 hours  
Practicals - 60 hours

**Study period:** Year 4, module teaching system - duration - 3 weeks

**Contents:** Clinical anatomy of the middle and the inner ear. Physiology of the auditory and vestibular sensory systems. Acute inflammations of the middle ear. Mastoiditis. Chronic otitis - mesotympanitis, epitympanitis. Otosclerosis. Menier's disease. Extradural and subdural abscess. Deafness and deafdumbness. Clinical anatomy and physiology of the nose. Nosebleed. Acute and chronic rhinitis. Anatomy of the throat. Adenoid vegetations. Tonsillitis. Chronic pharyngitis. Chronic tonsillitis. Clinical anatomy of the larynx. Physiology of the larynx. Acute and subchordal laryngitis. Chronic laryngitis. Laryngeal edema and abscess. Tracheotomy. Laryngeal paralyses. Laryngeal carcinomas.

**Assessment:** W/O, year 4<sup>th</sup>

\*\*\*

**HYGIENE, ECOLOGY AND OCCUPATIONAL DISEASES (Module):** ECTS credits 6.0

**Horarium:** Lectures - 45 hours  
Practicals - 105 hours

**Study period:** Year 4<sup>th</sup>, module teaching system - - duration - 4 weeks

**Contents:** Hygienic and ecological problems of population. Climate and weather. Acclimatization. Climatotherapy and climatoprophylaxis. Water and water-supply. Personal hygiene. Mental health. Nutriology and nutrition hygiene. Occupational risk factors and occupational diseases. Physical factors. Micro-climate and nonionizing radiation. Occupational chemical factors. Childhood and adolescence hygiene. Pneumoconioses. Occupational bronchial asthma and chronic bronchitis. Chronic poisoning. Vibration disease. Occupational disorders of the hearing and vestibular analyzers. Occupational disorders of the vision. Occupational accidents and diseases.

**Assessment:** W/O, year 4<sup>th</sup> .

\*\*\*

**OPHTHALMOLOGY (Module):** ECTS credits 3.6

**Horarium:** Lectures - 30 hours  
Practicals - 45 hours

**Study period:** Year 4<sup>th</sup>, module teaching system - duration - 3 weeks

**Contents:** Light sensing. Colour sensing. Visual acuity - techniques for examination. Binocular visus. Diseases of the orbital cavity and eyelids, conjunctiva, and lacrimal apparatus, cornea and sclera, vascular cover of the eye, retina, optic nerves, lens and the vitreous body. Glaucoma. Eye injuries. First aid in ophthalmology. Operating theater.

**Minimum practical skills:** Inspection of the eye-ball and eyelids movement. Examination of the light sensing and adjustment. Color sensing examination using tables. Visual acuity,

perception and projection examination. Tentative perimetry. Forster's perimetry. Focal lighting simple and combined. Ophthalmoscopy. Retinoscopy. Palpatory investigation of the eye pressure. Eye pressure measurement using Maclakov's tonometer. Refraction and adjustment investigation. Refraction glasses choice by neutralization. Corneal sensitivity investigation. Concomitant and paralytic strabismus differentiating. Manual examination of the orbital edge. Shirmer's tear secretion test. Lacrimal sac pressing out. Color test for lacrimal tract patency investigation (lacrimal tract and nose tests). Upper lid up turning and fornix exposing. Conjunctival cavity bathing. Eye-drop and eye ointment application. Mono- and binocular binding up. Fluorescein coloring of corneal epithelial defects. Mirror-image investigation of the cornea. Deviated cilia epilation. Conjunctival and corneal foreign bodies' removal. Pupillary light reflex examination.

**Assessment:** W/O, year 4<sup>th</sup>.

\*\*\*

**NEUROLOGY (Module):** ECTS credits 5.9

**Horarium:** Lectures - 60 hours  
Practicals - 60 hours

**Study period:** Year 4<sup>th</sup>, module teaching system - duration 4 weeks

**Contents:** Reflex activity - pathological changes. Sensory functions. Motor functions. Autonomic nervous system. Reticular formation and limbic system. Supreme cortex functions. Peripheral nervous system. Cranial nerves. Peripheral nerve diseases. Meningitis. Encephalomyelitis. Demyelinating encephalomyelitis. Borreliosis of the nervous system. Congenital degenerative diseases of the nervous system. Epilepsy. Injuries of the nervous system. Neurologic conditions caused by alcohol abuse. Neurointoxications. Neuroses. Headache.

Minimum practical skills: Clinical examination of the patient with neurological disorders. Diagnosis, differential diagnosis and management of patients with the following most important diseases: acute cerebrovascular disorders (including transportation and outpatient stroke management); epilepsy and status epilepticus; meningitis and other inflammatory diseases of the central and peripheral nervous system; skull and brain injuries - emergency treatment and transportation; myasthenic crisis - emergency management; peripheral nervous system diseases and severe pain syndromes (including polyneuritis and discal hernia) - management and a medical specialists' report. Indications and contraindications for a spinal puncture. Liquor tests interpretation.

**Assessment:** W/O, year 4<sup>th</sup>.

\*\*\*

**GENERAL MEDICINE (Module):** ECTS credits 3.2

**Horarium:** Lectures 15 Week 15  
Practicals 15 Week 15

**Study period:** Year 4<sup>th</sup>, module system teaching system 5 days

**Contents:** Health care organization. Primary health care in the Republic of Bulgaria. Main duties of the General Practitioner in health care, prevention and treatment in general practice. Communication between the physician and the patient. Health management: the General Practitioner as an organizer and main executor of the tasks in the established practice.

**Assessment:** Ongoing assessment, Year 4<sup>th</sup>

\*\*\*

**CLINICAL PATHOLOGY (Module):** ECTS credits 8

**Horarium:** Lectures - 45 hours  
Practicals - 60 hours

**Study period:** Year 4<sup>th</sup>, module teaching system - duration 4 weeks, in parallel with the Internal Diseases.

**Contents:** Diseases of the digestive system, liver, gall bladder, and the pancreas, cardiovascular system, respiratory tract, hemopoietic system, lymphatic nodes, endocrine glands, urinary tract, male and female reproductive systems. Diseases related to gravidity and delivery. Diseases of the fetus. Drug related disorders. Diseases of the bones and muscles.

**Assessment:** W/O, year 4<sup>th</sup>.

\*\*\*

**CLINICAL PHARMACOLOGY (Module):** ECTS credits 2.4

**Horarium:** Lectures - 30 hours  
Practicals - 30 hours

**Study period:** Year 5<sup>th</sup>, module teaching system - duration 2 weeks.

**Contents:** Pharmacokinetic approaches to drug dosage. Drug therapy monitoring. Clinical pharmacodynamics. Clinical chronopharmacology. Clinical pharmacokinetics. Drug administration in gravid and breast feeding women. Drug administration in elderly patients. The disease progress as a factor influencing drug action. Clinically significant drug interactions. Clinical and pharmacological approaches to vigilance treatment optimizing and pain treatment optimizing. Adverse drug reactions. Pharmacoepidemiology. Pharmacoconomics.

Minimum practical skills: Drug treatment necessity assessment. Appropriate drug choice according to the individual characteristics of the particular patient. Personal drug list development and enlisting the chosen medicine. Preparing of the rationale regimen of the chosen drug. Effective communication techniques to promote patient cooperation and compliance with treatment. Assessment of the effect and the treatment duration.

**Assessment:** W/O, year 5<sup>th</sup>

\*\*\*

**OBSTETRICS AND GYNECOLOGY (Module):** ECTS credits 8.0

**Horarium:** Lectures - 60 hours  
Practicals - 150 hours

**Study period:** Year 5, module teaching system - duration 6 weeks.

**Contents:** Fertilization. Constitutional changes in pregnant women.

Normal delivery. Prematurely pregnancy interrupting. Abortion and premature birth. Hemorrhages during the fetus and placenta delivery. Fetus in jeopardy. Diabetes and pregnancy. Abnormal presentations of the fetus. Geminated pregnancy. Physiology and pathology in the new-born and shielded period. Delivery anaesthesia. Caesarian section. Physical examination in gynecology. Precanceroses and neoplasms of the vulva, vagina and cervix. Extrauterine pregnancy. Myoma of the uterus. Sterility. Childhood and adolescence gynecology. Family planning. Breast diseases. Endometrioses. Congenital diseases of the genital organs. Climacteric. Menopause.

**Minimum practical skills:**

**Obstetrics:** History taking and physical examination of the pregnant woman. Fetal sounds auscultation. Endovaginal examination. Basic skills in ultrasound examination. Conducting normal delivery. Participation in Cesarean section. Initial management of the newborn. Primary resuscitation of the newborn. Management of the woman in the early puerperium.

**Gynecology:** History taking and physical examination in gynecology. Vaginal examination using speculum. Bimanual palpation. Native preparation microscopy. Taking probe for cytological testing. Cytological and histological report analysis. Participation in experimental uterine curettage and rectouterine pouch puncture. Preoperative and postoperative management of the woman. Participation in abdominal and vaginal gynecological surgery.

**Assessment:** W/O, year 5<sup>th</sup>

\*\*\*

**DERMATOLOGY AND VENEROLOGY (Module): ECTS credits 3.6**

**Horarium:** Lectures - 45 hours  
Practicals - 45 hours

**Study period:** Year 5<sup>th</sup>, module teaching system - duration 3 weeks.

**Contents:** Physiology and functions of the skin. Treatment of the skin diseases. Skin diseases caused by external agents influence. Eczema. Allergic dermatoses. Papulose and erythematoses-squamose dermatoses. Genodermatoses. Bullose dermatoses. Autoimmune connective tissue diseases. Vascular dermatoses. Skin neoplasms. Diseases of the skin appendices. Mycoses. Bacterial infections of the skin. Dermatoviroses. Venereal diseases. Syphilis. Gonorrhoea. AIDS.

**Assessment:** W/O, Year 5<sup>th</sup>

\*\*\*

**PEDIATRICS (Module): ECTS credits 8.4**

**Horarium:** Lectures - 90 hours  
Practicals - 120 hours

**Study period:** Year 5<sup>th</sup>, module teaching system, - duration – 6 weeks.

**Contents:** Current clinical and prevention problems of pediatrics. Physiologic characteristics of the water – electrolyte balance in children. Physiology of immunity. Immune deficiency disorders in children. Genetic problems in pediatrics. Cytological diagnosis. Prenatal prevention of the congenital disorders. Neonatal pathological conditions. Jaundice in infants and children. Physiology and pathology of the puberty. Rickets and rickets-like conditions. Childhood pneumonopathies. Bronchial asthma. Congenital heart diseases. Myocarditis. Connective tissue disorders. Anemia in children. Reactive arthritis and spondylarthropathia. Hemorrhagic diatheses. Leukemia and malignant lymphoma. Oncological diseases in childhood. –Acute and chronic diarrhea in childhood. Infusion therapy. Chronic hepatitis and liver cirrhosis. Acute glomerulonephritis. Hematuria in children. Chronic nephritis. Nephrosis. Endocrine disorders in children. Carbohydrate metabolism disorders. Diabetes. Convulsion disorders; coma in children. Heart failure in the newborn and infants.

**Minimum practical skills:** History taking and physical examination of the newborn, infants and children. Anthropometric measurements. Thyroid gland palpation. Blood pressure measurement in children. Sputum sampling. Peripheral blood count. Bone marrow sampling. General and sterile urine sampling and testing. Joint physical examination (edema, local temperature, motion capacity, circumference and goniometry). Venous blood

sampling and intravenous drug application. Mantoux test performance and interpretation. Insertion and management of central and peripheral intravenous catheter. Oxygen mask setting and control. Urethral catheter insertion. Upper respiratory tract secretion aspiration. Lumbar puncture performance. ECG recording. Vital signs monitoring. Pulse therapy - conduction and monitoring. Genetic consultation recommending. Genealogical investigation. Physical examination in patients with large and small congenital abnormalities.

**Assessment:** W/O, year 5<sup>th</sup>.

\*\*\*

**INTERNAL DISEASES (Module):** ECTS credits 21.6

**Horarium:** Lectures - 150 hours  
Practicals - 360 hours

**Study period:** Module teaching system during the fourth and fifth academic year; - duration 18 weeks, including preliminary examination at the end of each cycle.

**Contents:**

### **Cardiology**

Chronic congestive heart failure. Acute heart failure. Cardiogenic shock. Rhythm and conduction disturbances. Heart valve diseases. Atherosclerosis and ischemic heart disease. Myocardial infarction. Essential systemic hypertension. Secondary hypertension. Infectious endocarditis. Myocarditis and cardiomyopathies. Acute and chronic pericarditis.

### **Gastroenterology**

Instrumental examinations and laboratory tests in gastroenterology. Esophageal, stomach, and duodenal diseases. Chronic diseases of the liver. Diseases of the pancreas. Differential diagnosis of the jaundice. Diagnosis and treatment of the intestinal diseases. Diagnostic algorithm and management of gastrointestinal neoplasm.

### **Nephrology**

Acute glomerulonephritis. Chronic glomerulonephritis. Concomitant nephropathies. Pyelonephritis. Interstitial nephropathies. Acute renal failure. Chronic renal failure.

### **Pulmonology**

Chronic obstructive pulmonary disease (COPD). Treatment of the bronchial obstruction. Pneumonia. Pulmonary carcinoma. Pulmonary tuberculosis.

### **Endocrinology**

Diabetes mellitus. Function and diseases of the hypothalamus and the pituitary gland. Adrenal glands – function and diseases. Diseases of the thyroid gland.

### **Hematology**

Anemia. Leukemia. Lymphomas. Paraproteinemia. Hemorrhagic diathesis. Thromboembolism.

### **Allergology**

Basic theory of pathogenesis and treatment of allergic diseases. Bronchial asthma. Medicamentous allergy. Anaphylactic shock and serum disease. Treatment of the allergic diseases.

### **Rheumatology**

Rheumatoid arthritis. Collagenosis.

### **Toxicology**

Acute exogenous poisoning. Drug toxicity. Poisoning with industrial and home-made toxins.

**Assessment:** W/O, year 5<sup>th</sup>.

\*\*\*

**CLINICAL LABORATORY (Module):** ECTS credits 2.4

**Horarium:** Lectures - 30 hours  
Practicals - 30 hours

**Study period:** Year 5<sup>th</sup>, module teaching system, –duration – 2 weeks.

**Contents:** Hematologic laboratory tests of peripheral blood samples. Laboratory tests of the bone marrow. Cytochemical and cytometric techniques. Laboratory diagnosis of the red blood cell diseases. Laboratory diagnosis of leukemia and other diseases of the white blood cells.

Clinical and laboratory testing of blood clotting and fibrinolysis. Water balance and osmolality. Electrolyte and microelements testing. Protein detecting in biological fluids. Albuminuria. Laboratory testing of patients with renal diseases. Enzyme detecting in biological fluids. Laboratory determination of lipids and lipoproteins. Carbohydrate metabolism disturbances investigation. Hormone determination in biological fluids. Drug monitoring and toxicology. Laboratory diagnosis of malignant neoplasms, genetic and multifactorial diseases.

**Assessment:** Ongoing assessment, year 5<sup>th</sup> .

\*\*\*

**CLINICAL IMMUNOLOGY (Module):** ECTS credits 1.2

**Horarium:** Lectures - 15 hours  
Practicals - 15 hours

**Study period:** Year 5<sup>th</sup>, module teaching system, –duration – 1 week

**Contents:** Immune deficiency diseases. Autoimmunity and autoimmune diseases. Immunologic aspects of renal and gastrointestinal diseases, hepatic and biliary immune-mediated diseases. Lymphoproliferative and hematologic diseases. Transplantation immunology. Immunology of neoplasm growth.

**Assessment:** Ongoing assessment, year 5<sup>th</sup>

\*\*\*

**SURGERY (Module):** ECTS credits 10.8

**Horarium:** Lectures - 90 hours  
Practicals - 180 hours  
Clinical attachment - 60 hours

**Study period:** Module teaching system during the fourth and fifth academic year, - duration 8 weeks, including preliminary examination in the 4<sup>th</sup> and final examination in the 5<sup>th</sup> academic year.

**Contents:**

**Fourth academic year:**

**Chest surgery** - Lung cysts and neoplasms. Diseases of the pleura. Mediastinal diseases. Esophageal and diaphragm diseases. Chest injuries – blunt and opened.

**Cardiovascular surgery** - Acute chronic venous and arterial insufficiency. Surgery in congenital and acquired heart diseases.

**Fifth academic year:**

**Abdominal, neck, and breast surgery** - Multiple and combined injuries. Ileus. Acute and chronic appendicitis. Peritonitis. Acute pancreatitis. Congenital, traumatic, and inflammatory diseases and neoplasms of the neck. Thyroid gland diseases. Breast diseases. Ulcer diseases. Precanceroses and carcinoma of the stomach. Cholelithiasis. Cholecystitis. Echinococcus and abscess of the liver. Hepatic and extrahepatic biliary system neoplasms. Spleen diseases. Pancreas neoplasms. Neoplasms of the bowel. Hemorrhoids. Fistula. Paraproctitis, dermoid cysts. Rectal carcinoma.

**Face surgery**

**Pediatric surgery** - Acute appendicitis, peritonitis, and intussusception in childhood. Acute purulent diseases of the lung and the pleura in childhood. Congenital diseases of the esophagus, small intestine and the bowel.

**Neurosurgery** - Injuries of the skull and the brain. Brain tumors. Injuries of the spinal cord and the periphery nerves.

**Assessment:** W/O, year 5<sup>th</sup>.

\*\*\*

**NEUROSURGERY (Module):** ECTS credits 1.2

**Horarium:** Lectures - 10 hours

Practicals - 20 hours

**Study period:** Module teaching system during the fifth academic year.

**Contents:**

**Neurosurgery** - Injuries of the skull and the brain. Brain tumors. Injuries of the spinal cord and the periphery nerves.

**Assessment:** W/O, year 5<sup>th</sup>.

\*\*\*

**ORTHOPEDECS AND TRAUMATOLOGY (Module):** ECTS credits 3.6

**Horarium:** Lectures - 30 hours

Practicals - 60 hours

**Study period:** Year 5<sup>th</sup>, module teaching system, - duration – 3 weeks.

**Contents:** Clinical examination in orthopedics and traumatology. Basic operative and non-operative curative techniques. Instruments in orthopedics and traumatology.

Aseptic necrosis. Congenital hip dislocation. Bone neoplasm. Degenerative disorders and inflammatory diseases of the bones and muscles. Curative techniques in patients with distortion, luxation, and fractures. Humeral, elbow, forearm and palmar fractures and luxations. Pelvic and coxofemoral fractures and luxations. Leg fractures and luxations. Knee injuries. Spinal column fracture and fracture-luxation.

**Minimum practical skill:** Examination of the orthopedic patient. Dressing. Stitches taking out. Plaster setting performing. Direct and indirect extension techniques application. Large joint puncture. Local corticosteroid application. Preoperative surgeon hands and operative field preparing. Participation in orthopedic surgery. Orthopedic devices application.

**Assessment:** W/O, year 5<sup>th</sup>.

\*\*\*

**PSYCHIATRY (Module):** ECTS credits 3.6

**Horarium:** Lectures - 45 hours

Practicals - 30 hours

**Study period:** Year 6<sup>th</sup>, module teaching system - duration 3 weeks.

**Contents:** The course is designed to acquaint students with the basic psychiatric procedures. Therapeutic communication – the emphasis is on the confidence forming and susceptibility enhancing as prerequisites for interview or session performing.

Clinical skills – training in selected fields of the clinical psychiatric assessment (interview). Theoretical training – introduction to basic theory of psychiatry needed in daily clinical practice. Training programmes are based on the active participation of the students.

**Minimum practical skills:** Therapeutic communication. Preadmission examination. Following up. Psychological test performing. Case report. Therapeutic programme formulation. Individual session. Compulsion exerting. Team session. Case discussion. Supervision. Depression, anxiety, suicide intention, psychosis, relapse, delirium, dementia, and drug side effects assessment. Collaboration with psychologist.

**Assessment:** W/O, Year 6<sup>th</sup>.



\*\*\*

**UROLOGY (Module):** ECTS credits 2.4

**Horarium:** Lectures - 15 hours  
Practicals - 30 hours

**Study period:** Year 6<sup>th</sup>, module teaching system, - duration – 2 weeks.

**Contents:** Urogenital system abnormalities. Urolithiasis. Urogenital neoplasms. Prostate gland adenoma and carcinoma. Inflammatory diseases of the urogenital system. Urogenital tuberculosis. Andrologic problems in urology.

**Assessment:** Ongoing assessment, year 6<sup>th</sup>.

\*\*\*

**ANESTHESIOLOGY AND REANIMATION (Module):** ECTS credits 3.6

**Horarium:** Lectures - 30 hours  
Practicals - 45 hours

**Clinical attachment - 22.5**

**Study period:** Year 6<sup>th</sup>, module teaching system, - duration – 3 weeks.

**Contents:** Types of anesthesia. General anesthesia. Inhalatory anesthesia. Equipment. Inhalatory anesthesia conduction. Muscle relaxants. Intravenous anesthesia. Neuroleptanalgesia. Total intravenous anesthesia. Clinical application of the contemporary anesthetics. Local anesthetics. Preoperative, operative and postoperative resuscitation. General response of the organism to an injury. Homeostasis. Infusion therapy. Definition of the terms water-electrolyte balance, protein balance, base-acid balance, and caloric balance. Enteral, parenteral and mixed feeding. Syncope, collapse and shock. Hypovolemia. Management of the shock. Hemotransfusion. Drug treatment. Acute respiratory disorders. Methods of outpatient and hospital artificial respiration. Acute circulatory disorders. Apparent death. Anesthesia and intensive care in obstetrics and gynecology.

**Assessment:** Ongoing assessment, year 6<sup>th</sup>

\*\*\*

**PHYSIOTHERAPY AND REHABILITATION (Module):** ECTS credits 2.4

**Horarium:** Lectures - 15 hours  
Practicals - 30 hours

**Study period:** Year 6<sup>th</sup>, module teaching system, - duration – 2 weeks

**Contents:** Rehabilitation – character, classification, aims, equipment, and contingent. Galvanic treatment. Low frequency and low voltage current treatment. Medium frequency current treatment. Ultrasound. High frequency current. Light. Kinesiatrics. Application in preventive medicine. Natural physical factors – water therapy, balneotherapy, climatotherapy.

**Assessment:** Ongoing assessment, in year 6<sup>th</sup>.

\*\*\*

**EPIDEMIOLOGY, INFECTIOUS DISEASES, MEDICAL PARASITOLOGY, AND TROPICAL DISEASES (Module):** ECTS credits 7.2

**Horarium:** Epidemiology and infectious diseases  
Lectures - 60 hours  
Practicals - 60 hours  
Medical Parasitology and Tropical Diseases  
Lectures - 15 hours  
Practicals - 15 hours

**Study period:** Year 6<sup>th</sup>, module teaching system, - duration – 6 weeks.

**Epidemiology** - Theory of the epidemiological process. Epidemiology of the salmonellosis, abdominal typhus and paratyphus A, B and C; diphtheria; influenza and acute respiratory diseases; Eruptive infectious diseases; virus hepatitis, neuroinfections, AIDS, hospital infections; enterovirus infections; chlamydial infections.

**Infectious diseases** - Infection, infectious process and infectious diseases. Diagnosis and treatment of the infectious diseases. Diarrhea. Salmonellosis, abdominal typhus, paratyphus A,B and C. Diphtheria. Influenza and acute respiratory diseases. Virus hepatitis, Neuroinfections. AIDS. Arbovirus infections. Rickettsial diseases - Q-fever, Marseilles fever. Shigellosis and colibacillosis. Cholera. Clinical manifestations and treatment of the hospital infections. Tetanus, anthrax. Hemorrhagic fever. Lyme disease.

**Parasitology** - Parasitism. Parasite-host interaction. Epidemiology of parasitoses. Pathogenesis of the parasitoses. Contemporary diagnostic techniques, basic principles of therapy and drug- prevention of parasitoses. Malaria. Blood and intestinal protozoan infections. Tropical parasitoses. Helminthiases. **Tropical medicine** - Mycobacterial and spirochete tropical infections. Arbovirus tropical infections. Penetrating mycoses. Tropical rickettsial and chlamydial infections.

**Assessment:** W/O, year 6<sup>th</sup>.

\*\*\*

**FORENSIC MEDICINE AND DEONTOLOGY (Module):** ECTS credits 3.6

**Horarium:** Lectures - 30 hours

Practicals - 45 hours

**Study period:** Year 6<sup>th</sup>, module teaching system, - duration – 3 weeks.

**Contents:** Forensic medicine experts' report in patients with mechanical trauma; transport injuries. Vital and postmortal injuries. Forensic medicine corpse investigation. Forensic medicine personality identification. Sex, sexual manifestations and sexual crimes. Investigation in contested parenthood, mechanical asphyxia, and poisoning. Medical deontology. Experimental trial in humans. Euthanasia. Medical mistakes and accidents in medical practice.

**Minimum practical skills:** Forensic medicine experts' report drawing up using forensic medicine record data. A living person certification. Documentation issuing. Preparing of lung native preparation for fatty embolism testing. Histological test sample preparing. A living person and corpse blood sampling for alcohol testing, for chemical testing. Sample preparing for virusological, bacteriological, biological testing. Air embolism testing.

**Assessment:** W/O, year 6<sup>th</sup>.

\*\*\*

## SUMMER PRACTICE

after the 2<sup>nd</sup> semester            15 calendar days

after the 4<sup>th</sup> semester 15 calendar days

after the 6<sup>th</sup> semester 15 calendar days

## TOTAL HOURS OF PRACTICE

After the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year- 45 days, 8 hours per day - 360 hours

## PRACTICE AFTER THE 2<sup>nd</sup> and 4<sup>th</sup> SEMESTER

## **Activities**

Sanitary treatment of a newly admitted patient – bathing, dressing, getting into a hospital. Hospital bed arranging. Special considerations of surgery, intensive care, and infant patient bed arranging. Patient's household linen changing. Care for in-patient's personal hygiene. Patient feeding. Patient and room preparation for doctor's round. Disinfectant solution preparing and usage. Dressing preparing for sterilization. Linen preparation. An in-patient transportation using a stretcher or sedan-chair. A motionless patient accompanying. Blood group determination. Participation in an on duty report and duty delivering.

## **PRACTICE AFTER the 6<sup>th</sup> SEMESTER**

Temperature and pulse frequency measurement. An enema giving. Injections – intravenous infusion setting. Massage performing and compress applying. Secretion sampling, principles of sputum and feces sampling. Principles of blood sampling for microbiological testing. Principles of stomach lavage performing. Blood pressure measurement. Formal medical documentation acquainting. Participation in scientific meetings. Plaster dressing and splinting. Assisting in surgery interventions.

## **II. CLINICAL PRACTICE AND PRE-GRADUATE INTERNSHIP**

### **4<sup>th</sup> and 5<sup>th</sup> year /module system/**

92 weeks (5 working days per week) - 460 working days

460 working days (2 hours per day) - 920 hours (115 days)

6<sup>th</sup> year – pre-graduate internship

240 calendar days (8 hours per day) -1920 hours

**TOTAL: CLINICAL PRACTICE AND  
PRE-GRADUATE INTERNSHIP - 2 840 hours**

## **III. ALLOCATION OF PRE-GRADUATE INTERNSHIP (in calendar days)**

Internal Diseases - 30 days

Surgery - 30 days

Obstetrics and Gynecology - 30 days

Pediatrics - 30 days

Hygiene, Infectious Diseases,  
Epidemiology and Social

- 35 days

Medicine Emergency Medicine - 20 days

General Medicine Examination - 15 days

Sessions - 50 days

**TOTAL 240 days**

Clinical practice on a module system - 116 days

**TOTAL pre-graduate  
Internship and clinical practice 356 days**

Pre-graduation internship scored on three variables:

Clinical knowledge and skills – history collection and physical examination; diagnosis formulation (plan for diagnosis and diagnostic tests making; clinical diagnosis basing); patient therapeutic plan making.

Practical skills – medical manipulations, instrumental diagnostic and therapeutic procedures, performing of different imaging diagnostic procedures and image analysis, risk assessment and ways for its diminishing. Each student must perform at least 4 different manipulations, chosen by the lecturer.

Theoretical knowledge – test examination including one or two clinical cases, situation problem and specific questions.

## **GRADUATION EXAMINATIONS (STATE CERTIFICATION EXAMINATION)**

Graduation examinations (including Internal Diseases, Surgery, Obstetrics and Gynecology, Pediatrics, and Hygiene, Epidemiology, Infection Diseases and Social Medicine) are to be passed at the end of the corresponding probation. Students who pass the state examinations are awarded a Master's degree and the qualification of "Master of Medicine (MMed)" with a licence to practise medicine.

**The elective courses/modules for the respective Academic Year are published on the official website of the Faculty of Medicine- Sofia – <http://medfac.mu-sofia.bg>**



# FACULTY OF DENTAL MEDICINE

*Address: 1, St. Georgi Sofijski Str.*

*Sofia – 1431, Bulgaria*

*<http://www.fdm.mu-sofia.bg/>*

**Dean: Prof. Dr. Andon Filtchev, PhD, DSc**

Tel.: +359 2 952 3548, Fax: +359 2 952 1506

*E-mail: [afilchev@mu-sofia.bg](mailto:afilchev@mu-sofia.bg)*

**Faculty Coordinator: Prof. Dr. Bozidar Yordanov, PhD**

Tel.: +359 2/954 13 93      Mobile: +359888711187,      Fax: +359 2/952-1506

*E-mail: [bozhidar.yordanov@fdm.mu-sofia.bg](mailto:bozhidar.yordanov@fdm.mu-sofia.bg)*



The Faculty of Dental Medicine was founded by the Decree №32/June 24th, 1942 of His Majesty King Boris III. The Faculty of Dental Medicine is the first autonomous and accredited institution of higher education in Bulgaria providing training of dental medicine doctors, awarding Masters Degree.

From its start in 1942 until now, 17422 students were trained and the faculty was graduated by 10 652 Bulgarian and 929 international students from 64 countries in Europe, America, Asia, Australia and Africa.

The Faculty of Dental Medicine is renovated with 340 new dental units. There are four auditoriums, seminar halls, research library, pre-graduation training base, post-graduate students' dental surgeries, Center for continuing education in Dental Medicine, preclinical practice training rooms, clinical practice training rooms equipped with typodonts, dental technician laboratory, center for CAD/CAM technologies, Museum on Phylogenesi of Masticatory system, etc. There are a number of well functioning students' research circles and research projects.

The education plan and programmes are in accordance with the directives of the European Union. Currently, 136 highly qualified regular lecturers and teachers work at the Faculty of Dental Medicine, 61 of them with PdD degree, and 6 – with DSc.

The education of students in dental medicine is organized in three stages with duration of five years and six months as pre-graduate internship. During the first two years students receive medicobiological training. The clinical and medical training is realized from the second to the



tenth semester and includes education in general medical and specialized dental medicine disciplines. The teaching is carried out by 8 departments. The prediploma internship includes Pediatric Dental Medicine, Conservative Dental Medicine, Oral and Maxillofacial Surgery,, Prosthetic Dental Medicine, Periodontology and Orthodontics, and ends with state examinations. Students who pass them successfully are awarded the qualification of a Doctor in Dental Medicine and a Master's degree.

*In the first two years* the programme covers subjects such as Human Anatomy and Histology, Human Cytology and Embryology; Physiology, Physics; Chemistry; Biology; Dental and Biomaterials; Biophysics; Computer Science; Latin language, Foreign Language; Biochemistry; Microbiology; Pharmacology; Preclinical Pediatric Dental Medicine, Preclinical Conservative Dental Medicine, Preclinical Prosthetic Dental Medicine; Social Medicine and Medical Ethics, Medical Psychology, Disaster Medicine, Computer Sciences.



*In the third year* the subjects are: Pathophysiology; Pharmacology; Preclinical Prosthetic Dental Medicine; Clinical Prosthetic Dental Medicine; Preclinical Pediatric Dental Medicine; Clinical Pediatric Dental Medicine; Preclinical Conservative Dental Medicine; Preclinical Oral and Maxillofacial Surgery, General Surgery, Hygiene and Epidemiology.

*In the fourth year* the studied subjects are: Diagnostic Imaging; Oto-Rhino-Laryngology; General Pathology; Internal Diseases; Forensic Medicine, Clinical Prosthetic Dental Medicine; Clinical Conservative Dental Medicine; Orthodontics; Clinical Pediatric Dental Medicine; Clinical Oral a Maxillofacial Surgery, Clinical Dental Allergology; Pediatrics and Infectious Diseases, Obstetrics and Gynecology, Periodontology.



In the fifth year the subjects are: Clinical Conservative Dental Medicine; Physiotherapy; Oral and Maxillofacial Surgery; Dermatology and Venerology; Neurology and Psychiatry; Ophthalmology; Clinical Prosthetic Dental Medicine; Orthodontics; Clinical Pediatric Dental Medicine; Periodontology.

Students go through training in a number of other disciplines – Dental Physiotherapy, Allergology, Implant Dentistry, Gnathology and Occlusion, Prevention of Dental Diseases, Oral Pathology.

The Faculty carries out specialization in ten specialties: Pediatric Dental Medicine, Prosthodontics, Oral Surgery, Maxillofacial Surgery, Implant Dentistry, Orthodontics, Periodontology and Diseases of Oral Mucosa, Social Medicine and Public Dental Health, General Dentistry, Maxillofacial Radiology and Oral Imaging Diagnostics. The Faculty disposes of the largest library in the field of Dental Medicine in Bulgaria.

## DISCIPLINES

**CHEMISTRY:** ECTS 4,6

<b>Horarium:</b>	Lectures	45	Weeks	15
	Practicals	30	Weeks	15

**Semester:** 1

**Objectives:** Studying the general chemical principles, laws and reactions in relation to the student's future practice.

**Contents:** Inorganic chemistry: acid-base equilibrium. Electron transfer. Formation of complex compounds. Organic chemistry: Chemical structure – biological activity relationship (SAR). Chemical properties of the basic classes of organic compounds in the living organisms. Chemical properties of many drugs of importance.

**Assessment:** Ongoing assessment, Final examination - W/O, semester 1<sup>st</sup>.

\*\*\*

**PHYSICS:** ECTS credits 4,6

<b>Horarium:</b>	Lectures	45	Weeks	15
	Practicals	30	Weeks	15

**Semester:** 1

**Objectives:** Studying the physical phenomena connected with medicine and stomatology.

**Contents:** Physical methods for diagnostics and treatment in medicine and stomatology. Physical phenomena and principles in functioning of the human organs and systems. Principles of human protection from hazardous physical factors. Basic physical concepts, quantities and units used in medicine and stomatology.

**Assessment:** Ongoing assessment; final examination - W/O, semester 1<sup>st</sup>.

\*\*\*

**HUMAN BIOLOGY:** ECTS credits 5,8

<b>Horarium:</b>	Lectures	45	Weeks	30
	Practicals	60	Weeks	30

**Semesters:** 1 and 2

**Objectives:** Getting acquainted with the organization of the living systems and the cellular and molecular principles involved.

**Contents:** Material nature of life. Heredity and diversity. Living organisms as an integrated system. Immunological homeostasis. Gametogenesis. Ontogenesis. Biological evolution. Genetics of the population. Anthropogenesis. Ecology. Parasitology. Comparative anatomy.

**Assessment:** W/O in the 2<sup>nd</sup> semester.

\*\*\*

**LATIN LANGUAGE:** ECTS credits 4,0

**Horarium:** Practicals 60 Weeks 30

**Semesters:** 1 and 2

**Objectives:** General knowledge of the Latin language in the field of medicine.

**Contents:** Substantives and adjectives with their declension. Word formation, prefixes, suffixes and terms of Latin and Greek origin. Prescriptions - general principles, abbreviations. General principles in the clinical nomenclature and officinal forms.

**Assessment:** Ongoing assessment, in the 2<sup>nd</sup> semester.

\*\*\*

### **FOREIGN LANGUAGE (BULGARIAN FOR FOREIGN STUDENTS, ENGLISH INSTRUCTIONS)**

ECTS credits: 8

**Horarium:**

**Semesters 1,2** Practicals 120 Weeks 30

**Semesters 3,4** Practicals 120 Weeks 30

**Objectives:** To provide knowledge to translate scientific medical literature; learn to make summaries and annotations in the foreign language. Learning medical and stomatological terminology.

**Contents:** The students learn the specific characteristics of the scientific text. Terms definition. General linguistic functions, themes and thesis.

**Assessment:** Ongoing assessment in the 4<sup>th</sup> semester.

\*\*\*

**COMPUTER SCIENCE:** ECTS credits 2,8

**Horarium:** Practicals 30 Weeks 15

**Semester:** 2

**Objectives:** Studying the modern means and methods for information processing.

**Contents:** Operation systems, text processing systems, data base systems, statistical software.

**Assessment:** W/O, 2<sup>nd</sup> semester.

\*\*\*

**HUMAN CYTOLOGY AND EMBRYOLOGY:** ECTS credits 4,0

**Horarium:**

**Semester: 1** Lectures 30 Weeks 15

Practicals 30 Weeks 15

**Objectives:** The students acquire knowledge about the structure of the cell and its parts.

**Contents:** Structure of the cell and its parts (external membrane, nucleus, cyto-center,



cytoskeleton, cellular organelles). Epithelial tissue. Connective tissue. Blood. Muscle tissue. Nervous tissue. General embryology.

**Assessment:** W/O exams, semester 1<sup>st</sup>.

\*\*\*

### **HUMAN ANATOMY AND HISTOLOGY:** ECTS credits 14,8

#### **Horarium:**

<b>Semester 1</b>	Lectures	0		
	Practicals	15	Weeks	15
<b>Semester 2</b>	Lectures	45	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 3</b>	Lectures	30	Weeks	15
	Practicals	90	Weeks	15

**Objectives:** The students acquire knowledge about the normal structure of the organs and systems of the human body.

**Contents: ANATOMY:** Skeletal bones and their connection. Muscles, blood vessels and nerves of the extremities. Muscles, vessels and nerves of the head. Muscles, blood vessels and nerves of the trunk. Viscera. Central nervous system and sensory organs. Topographic anatomy of head and neck.

**Assessment:** W/O, 3<sup>rd</sup> semester.

\*\*\*

### **BIOCHEMISTRY:** ECTS credits 7, 4

<b>Horarium:</b>	Lectures	60	Weeks	30
	Practicals	60	Weeks	30

**Semesters:** 2 and 3

**Objectives:** Gaining basic knowledge in biochemistry, molecular biology, and molecular pathology in order to achieve understanding of the human diseases, their diagnostics and treatment.

**Contents:** Biopolymers. Bioenergetics. Metabolism of carbohydrates, lipids, amino acids and nucleotides, and their interactions. Hormones and mechanism of action. Functional biochemistry: blood, liver, kidney, neural tissue, muscle tissue, bones, teeth. Biochemical basis of nutrition. Molecular biology and molecular pathology. Disturbances of the metabolism.

**Assessment:** W/O in the 3<sup>rd</sup> semester.

\*\*\*

### **BIOPHYSICS:** ECTS credits 2,8

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Semester:** 3

**Objectives:** General physical and physicochemical principles in the biological systems based on precise quantitative methods. Gaining knowledge on the modern cellular biophysics' achievements, as well as of the theoretical principles of diagnostic and therapeutic methods in stomatology.

**Contents:** Thermodynamics of biological processes. Structure, dynamics and functioning of biological membranes. Transport of substances through biological membranes. Mechanisms of

biopotentials. Passive electrical properties of cells and tissues and their utilization in the therapeutic and diagnostic practices. Free radicals in the living systems.

**Assessment:** W/O, semester 3<sup>rd</sup>.

\*\*\*

### **HUMAN PHYSIOLOGY:** ECTS credits 7,6

#### **Horarium:**

<b>Semester: 3</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15
<b>Semester: 4</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Objectives:** Teaching the relationship between human organism and its interaction with the environment.

**Contents:** General principles of regulation in the human body. Homeostasis. Transport through cellular membranes. Physiology of excitable tissue. Synapses. Mediators. Physiology of muscles. Blood and lymph. Cardiovascular system. Respiration and gas exchange. Digestion. Function of the liver. Vitamins and microelements. Metabolism, energy and substances. Body temperature. Physiology of the skin. Function of kidneys. Fluid and acid-base balance. Endocrine systems. Reproductive and endocrine function of sexual glands. Vegetative nervous system. Sensomotor function of nervous system. Cortical system. Physiology of physical work. Characteristics of oral cavity's vascularity and teeth's mineralization. Physiological role of saliva. Characteristics of sensible functions in the facial maxillary area. Toothache.

**Assessment:** W/O, semester 4<sup>th</sup>.

\*\*\*

### **MICROBIOLOGY:** ECTS credits 5,8

#### **Horarium:**

<b>Semester: 3</b>	Lectures	30	Weeks	15
	Practicals	15	Weeks	15
<b>Semester: 4</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** Studying the morphology, structure and physiology of microbes. Agents of infectious diseases and principles of microbiological diagnostics. Principles and means for the treatment of infectious diseases. Chemotherapy. Biospecimens. Infectious process and immunity. The meaning of normal microflora. Ethiological role of oral microflora.

**Contents:** General microbiology, infection and immunity, special microbiology.

**Assessment:** W/O, semester 4<sup>th</sup>.

\*\*\*

### **SOCIAL MEDICINE AND MEDICAL ETHICS: ECTS credits 3,4**

#### **Horarium:**

<b>Semester:</b> 4	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** To educate students, studying dental medicine, an integral social medical approach and attitude to the patient and to the problems of the public health care.

**Contents:** Applying social approach in respect to health and attitude to the patient as well. Epidemiological methods applied in public dental medicine health study. Public health evaluation. Approaches and indicators used in dental medicine health studies. Moral and legal aspects of dental medicine practice. Health promotion. Emergency medical services.

**Assessment:** W/O, 4<sup>th</sup> semester.

\*\*\*

### **MEDICAL PSYCHOLOGY: ECTS credits 2,8**

#### **Horarium:**

<b>Semester:</b> 3	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Objectives:**

**Contents:**

**Assessment:** W/O, 3<sup>rd</sup> semester.

\*\*\*

### **DISASTER MEDICINE: ECTS credits: 2,8**

#### **Horarium:**

<b>Semester:</b> 4	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Objectives:** Theoretical and practical training for work under urgent conditions.

**Contents:** General characteristics of the disasters. Diagnostics and treatment of traumatic and radiation injuries. Intoxication with toxic substances. Frequent epidemic diseases in catastrophes. Organization, planning and management of health care in critical situations.

**Assessment:** W/O , 4<sup>th</sup> semester.

\*\*\*

### **PHARMACOLOGY: ECTS credits 6,6**

#### **Horarium:**

<b>Semester 4</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 5</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** Studying the pharmacological and toxicological effects of drugs, applied in dental medicine.

**Contents:** Main principles of general pharmacology. Drugs' effects on cholinergic and adrenergic mediators, applied in dental medicine. Drugs' effects on central nervous system; Drugs' effects on cardiovascular, respiratory and digestive systems. Local and general anesthetics applied in dental medicine. Pharmacology and toxicology of chemotherapeutics, applied in dental medicine. Principles of drug interactions in dental medicine.

**Assessment:** Practical and theoretical – W/O in the 5<sup>th</sup> semester.

\*\*\*

**PATHOLOGICAL PHYSIOLOGY: ECTS credits 4,3**

**Horarium:**

<b>Semester: 5</b>	Lectures	45	Hours per week	3	Weeks	15
	Practicals	30	Hours per week	2	Weeks	15

**Objectives:** Studying the etiology and pathogenesis of diseases.

**Contents:** General etiology and pathogenesis. Pathological processes (inflammation, fever, metabolic disorders and hypoxia). General clinical syndromes of vital systems under structural-dynamic violations.

**Assessment:** W/O, 5<sup>th</sup> semester.

\*\*\*

**HYGIENE AND EPIDEMIOLOGY: ECTS credits 3,4**

**Horarium:**

<b>Semester: 5</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** To develop professional knowledge and abilities for a prophylactic approach, professional behavior for carrying out the sanitary anti-epidemic activity.

**Contents:** The program is developed in accordance with the requirements of the general practitioner's qualification references. It is considered also with the normative documents for dental medicine prophylactics, children's education for oral hygiene, environment preservation, and hospital hygiene. The envisaged topics are in greatest extent in conformity with the dental medicine direction of training.

**Assessment:** W/O, 5<sup>th</sup> semester.

\*\*\*

**PATHOLOGICAL ANATOMY: ECTS credits 5,8**

**Horarium:**

<b>Semester: 6</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester: 7</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** Teaching the structural lesions in diseases.

**Contents:** General pathology - morphologic manifestations of disturbances in metabolism. Blood circulation. Structural processes in inflammation. Compensatory and repair processes. Tumors. Clinical pathology - diseases of the oral cavity and the digestive system. Morphologic alterations in organs. Infectious diseases.

**Assessment:** W/O, 7<sup>th</sup> semester.

\*\*\*

**SURGERY incl. ANAESTHESIOLOGY AND EMERGENCY CONDITIONS:**

ECTS credits 4.3

**Horarium:**

<b>Semester: 6</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Contents:** Antiseptics and aseptics. Principles of anesthesiology and resuscitation. Congenital diseases in the maxillofacial area. Traumatic diseases. Urgent diseases in surgery. Haemorrhage and blood transfusion. Occupational diseases in stomatology - panaritium, tendovaginitis.

**Assessment:** W/O, 6<sup>th</sup> semester.

\*\*\*

**OTO-RHINO-LARYNGOLOGY:** ECTS credits 1,6

**Horarium:**

<b>Semester: 7</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Objectives:** The course gives basic knowledge and practical skills necessary for the practicing stomatologist.

**Contents:** Ear, nose and throat anatomy and physiology. Etiology, symptomatology, examination and treatment of oto-rhino-laryngological diseases.

**Assessment:** W/O, 7<sup>th</sup> Semester.

\*\*\*

**INTERNAL DISEASES:** ECTS credits 3,4

**Horarium:**

<b>Semester: 7</b>	Lectures	30	Weeks	15
	Practicals	15	Weeks	15
<b>Semester: 8</b>	Lectures	30	Weeks	15
	Practicals	15	Weeks	15

**Objectives:** The students are acquainted with socially important internal diseases.

**Contents:** The programme emphasizes on the relationship between the internal diseases and the pathology of the oral cavity and dentition.

**Assessment:** W/O, 8<sup>th</sup> semester.

\*\*\*

**PEDIATRIC AND INFECTIOUS DISEASES:** ECTS credits 3,4

**Horarium:**

<b>Semester: 8</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** Acquainting the student with the infectious diseases.

**Contents:** Infection, infectious process and infectious diseases. AIDS. The course focuses on the wide dissemination of infectious diseases of great social importance.

**Assessment:** W/O, 8<sup>th</sup> Semester.

\*\*\*

**RENSIC MEDICINE:** ECTS credits 1,6

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Semester:** 8

**Objectives:** Training of students in dental medicine of the basics of forensic medicine for the general practice in cases of legal dental medicine problems, identification and increase of their law-consciousness.

**Contents:** Correct evaluation of the physical injuries in maxillofacial area. Participation of dental medicine doctors in the identification of persons and dead bodies with unknown identity. Legal deontological problems in the dental medicine practice: relations between colleagues, dental medicine-nurse and dental medicine - patient. Criminal civil and administrative responsibilities of the dental medicine in his professional activity, according to the legislation of republic of Bulgaria. **Assessment:** W/O, 8<sup>th</sup> Semester.

\*\*\*

**OBSTETRICS AND GYNECOLOGY:** ECTS credits 1,6

**Horarium:**

<b>Semester:</b> 8	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Objectives:** The students acquire the necessary knowledge for the treatment of pregnant women and maternity patients.

**Contents:** Normal pregnancy. Development of the fertilized egg. Role of the placenta. Diagnosis of early and advanced pregnancy. Normal delivery. Morphologic and functional changes in the pregnant woman. Pregnancy - gingivitis, stomatitis, caries. Early pregnancy and dental medicine. Normal and pathologic puerperal period. Puerperal infections. Delivery anesthesia. Effect of some drugs on the pregnant woman and the fetus. Premature interrupting of pregnancy. Premature birth. Fetus in jeopardy. Modern methods for diagnosis of the threatened fetus. Neonatal asphyxia and resuscitation. Contraception. The role of the doctor in dental medicine in female consultation.

**Assessment:** W/O, 8<sup>th</sup> Semester.

\*\*\*

**DERMATOLOGY AND VENEROLOGY:** ECTS credits 3,8

**Horarium:**

<b>Semester:</b> 9	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** Studying the skin, oral mucous and skin appendages diseases.

**Contents:** Structure of the skin. Infectious bullose dermatoses. Vascular dermatosis. Allergic dermatoses. Oral mucous diseases. Tumors of the skin and visible mucous. Sexually transmitted diseases.

**Assessment:** W/O, 9<sup>th</sup> Semester.

\*\*\*

**NEUROLOGY AND PSYCHIATRY:** ECTS credits 2,8

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Semester:** 9

**Objectives:** Acquiring the necessary knowledge on nervous diseases and psychiatry.

**Contents:** Clinical knowledge of the main symptoms, syndromes and diseases in neurology and psychiatry with respect to the attitude of the specialist under specific conditions. Neurological pathology in regions of the face. Oral cavity and teeth neuralgia and neuritis of trigeminal and glossopharyngeal nerves, atypical neuralgia in these regions. Neurological complications in mixed trauma of the face, the teeth and the head and therapeutic obligations of the dental medicine doctor.

**Assessment:** W/O, 9<sup>th</sup> Semester.

\*\*\*

**OPHTHALMOLOGY:** ECTS credits 2,8

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Semester:** 9

**Contents:** Anatomy and physiology of the visual analyzer and its relation to the anatomy of the dental structures. Methods of examination in ophthalmology, facilitating the doctor in the differential diagnosis. Diseases of the orbit, anterior and posterior eye segment in the dental practice.

**Assessment:** W/O, 9<sup>th</sup> semester.

\*\*\*

**DENTAL MATERIALS:** ECTS credits 4,0

<b>Horarium:</b>	Lectures	30	Weeks	30
	Practicals	30	Weeks	30

**Semesters:** 1, 2

**Objectives:**

**Assessment:** W/O, 2<sup>nd</sup> Semester.

\*\*\*

**PRECLINICAL PROSTHETIC DENTAL MEDICINE:** ECTS credits Year 1 -7,2;  
Year 2 – 9,4;

**Horarium:**

<b>Semester 1</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 2</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 3</b>	Lectures	30	Weeks	15
	Practicals	90	Weeks	15
<b>Semester 4</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15

**Objectives:** Gaining theoretical knowledge and practical skills for the treatment of crown teeth and dental arch defects.

**Contents:** Dental materials. Pre-clinical and Clinical prosthetic dental medicine.

**Assessment:** W/O, 4<sup>th</sup> semester.

\*\*\*

**CLINICAL PROSTHETIC DENTAL MEDICINE:** ECTS credits Year 3 - 5,2; Year 4 - 6,2;  
Year 5 - 7,4.  
Year 6 – 14,1

	Lectures	15	Weeks	15
<b>Horarium:</b>	Practicals	30	Weeks	15
<b>Semester 5</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 6</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 7</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 8</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 9</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 10</b>				

**Objectives:** Gaining theoretical knowledge and practical skills for the treatment of crown teeth and dental arch defects.

**Contents:** Dental materials. Pre-clinical and Clinical prosthetic dental medicine.

**Assessment:** W/O, 10<sup>th</sup> semester.

\*\*\*

**PRECLINICAL AND CLINICAL CONSERVATIVE DENTAL MEDICINE:** ECTS credits  
Year 2 – 1.6; Year 3 – 7,6; Year 4 – 8,0;  
Year 5 – 9.2; Year 6 - 11.0

<b>Horarium:</b>				
<b>Semester 4</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15
<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 6</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 7</b>	Lectures	15	Weeks	15
	Practicals	90	Weeks	15
<b>Semester 8</b>	Lectures	15	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 9</b>	Lectures	15	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 10</b>	Lectures	15	Weeks	15
	Practicals	75	Weeks	15

**Objectives:** Diagnostics and treatment of the hard dental tissues, tooth pulp and periodontium.

**Contents:**

**A.** Preclinic of conservative dentistry - cavity preparation of dental amalgam, composite materials and inlays; filling materials - qualities and application; endodontics - anatomy of pulpal camera, endodontic cavity preparation, treatment of root canals; fillig canals: means and methods.



**B. Clinical conservative dentistry** - clinic, diagnostics and treatment of hard dental tissues diseases, treatment of tooth pulp and periodontium diseases.

**Assessment:** Practical and theoretical –written and oral examination, semesters 6<sup>th</sup> and 10<sup>th</sup>.

\*\*\*

**PHYSIOTHERAPY (general and special):** ECTS credits 2,8

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Semester:** 9

**Contents:**

**Assessment:** W/O, 9<sup>th</sup> semester.

\*\*\*

**PRECLINICAL AND CLINICAL ORAL AND MAXILLOFACIAL SURGERY:** ECTS credits Year 3 – 8,5, Year 4 – 6,2 Year 5 – 9,2, Year 6 – 14,1

**Horarium:**

<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 7</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 8</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 9</b>	Lectures	15	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 10</b>	Lectures	15	Weeks	15
	Practicals	75	Weeks	15

**Objectives:** Learning the surgical methods for the treatment of surgical diseases in dental medicine.

**Contents:** Topographic anatomy and anesthesia in dental medicine surgery. Extraction of teeth. Periodontitis and jaw's cyst, abscesses and phlegmons in the facial-maxillary area. Osteomyelitis in the facial-maxillary area. Odontogenic sinusitis. Lymph nodes' diseases and specific inflammatory processes in the maxillary area. Diseases of salivary glands. Diseases of temporomandibular articulation and facial nerves. Trauma in the facial-maxillary area. Tumors of the oral cavity and the facial-maxillary area. Congenital and acquired defects of the labia and the palate. Dental, jaw and facial deformations.

**Assessment:** W/O, semesters 6<sup>th</sup> and 10<sup>th</sup>.

\*\*\*

**PRECLINICAL PEDIATRIC DENTAL MEDICINE: ECTS credits**

**Year 2 – 1,6; Year 3 – 1,6,**

**Horarium:**

<b>Semester: 4</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15
<b>Semester: 5</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Contents:** Embryonic development, histogenesis, morphology and physiology of the tooth structures, gingiva and parodont. Definition of the permanent and deciduous tooth. Root resorbtion\_ Oral ecosystem - microflora and oral liquids (saliva, content of gingival sulcus).

**Assessment:** W/O, 5<sup>th</sup>.

\*\*\*

**CLINICAL PEDIATRIC DENTAL MEDICINE: ECTS credits Year 3 – 2,1; Year 4 – 3,8;**

**Year 5 – 6,8; Year 6 – 8,0**

**Horarium:**

<b>Semester 6</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 7, 8</b>	Lectures	30	Weeks	30
	Practicals	60	Weeks	30
<b>Semester 9</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 10</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15

**Semesters:** 6,7, 8,9 and 10

**Objectives:** To acquaint the students with the pathology of the oral cavity in childhood. To build up abilities for correct diagnosis of the most common diseases of the teeth, gingiva and parodont and practical skills for their treatment. The students acquire practical skills on phantom models and only after that they work with up to 16 years old patients within the framework of three semesters. There is another semester of prophylactics to present the principal tendencies of dental prevention.

**Assessment:** W/O, semester 10th.

\*\*\*

**DENTAL HYGIENE and PREVENTION: ECTS credits 4,4; Year 3 – 1,6; Year 4 – 2,8**

**Horarium:**

<b>Semester: 6</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15
<b>Semester: 7</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Assessment:** W/O, 7<sup>th</sup> semester.

\*\*\*

**DENTAL PUBLIC HEALTH (DPH):** ECTS credits 5,2

**Horarium:**

<b>Semester: 5</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester: 6</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** Creating basic knowledge about the essence, structure, governance, financing and legal regulation of dental health services and skills for organization and management of dental practice.

**Contents:** DPH course gives an opportunity for gaining theoretical knowledge and competence about:

Structure and organization of national healthcare system

**Assessment:** W/O, 6<sup>th</sup> Semester.

\*\*\*

**ORAL PATHOLOGY:** ECTS credits 1.6

**Horarium:**

<b>Semester: 6</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Objectives:** Familiarization of future dental medicine doctor with damages of oral mucosa, periodontium and the teeth, associated with occupational risk factors. Prevention of occupational diseases and accidents at the work place.

**Contents:** Characteristics of the most common occupational diseases - intoxication with heavy metals; poisoning due to organic solvents; gas poisoning; damages due to noise and vibrations, dusts and allergens, etc.

**Assessment:** W/O, Semester 6<sup>th</sup>.

\*\*\*

**DIAGNOSTICS IMAGING (general and special):** ECTS credits 5,6; Year 3 – 2,8; Year 4 – 2,8

**Horarium:**

<b>Semester: 6</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester: 7</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Objectives:** Studying the methods and techniques for X-ray examination and ITS application in practice.

**Contents:** Radiographs, methods and techniques of respiratory, cardiovascular, urogenital, digestive, and nervous system X-ray examination. Methods and techniques for examination of maxillofacial area, trauma, teeth diseases, parodont, periodontium. Traumatic, inflammatory and tumor diseases of temporomandibular articulations.

**Assessment:** W/O, the 7<sup>th</sup> semester.

**DENTAL ALLERGOLOGY:** ECTS credits 2,2

<b>Horarium:</b> Lectures	15	Weeks	15
Practicals	15	Weeks	15

**Semester:** 7

**Objectives:** Mastering of theoretical and practical knowledge for applying complex focal diagnostics and clinical dental allergology in diagnosing clinically healthy and medical compromised patents for demonstrating the connection between oral and all-medical diseases in conformity with current European standards.

**Contents:** The “Dental clinical allergology” course gives an opportunity to acquire practical and theoretical knowledge and competency on special dental clinical allergology and complex focal diagnostics.

**Assessment:** W/O, 7<sup>th</sup> semester.

\*\*\*

**ORTHODONTICS:** ECTS credits Year 4 – 6,2, Year 5 – 6,8 Year 6 – 8,0**Horarium:**

<b>Semester 7</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 8</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 9</b>	Lectures	15	Weeks	15
	Practicals	45	Weeks	15
<b>Semester 10</b>	Lectures	15	Weeks	15
	Practicals	60	Weeks	15

**Semesters:** 7, 8, 9 and 10**Objectives:** Prevention and treatment of dental maxillary deformations and anomalies.

**Contents:** Development of dental-maxillary system and facial skeleton. Etiology of dental maxillary deformations and anomalies. Methods for diagnostics. Prophylactics and treatment of dental-maxillary deformations and anomalies.

**Assessment:** W/O, semesters 10<sup>th</sup>.

\*\*\*

**PARODONTOLOGY:**

ECTS credits: Year 4 - 3.2, Year 5 - 7.4, Year 6 - 4.8

**Horarium:**

<b>Semesters 7</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15
<b>Semester 8</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 9</b>	Lectures	15	Weeks	15
	Practicals	45	Weeks	15
<b>Semester 10</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Semesters:** 7, 8, 9 and 10

**Contents:** Instruments and instrumentation. Structural biology of periodontium and oral mucosa. Etiology and pathogenesis of periodontium and oral mucous diseases. Diagnostics of periodontium and oral mucous diseases. Treatment of periodontium and oral mucous diseases. Prophylactics of periodontium and oral mucous diseases.

**Assessment:** W/O, 10<sup>th</sup> semester.



*Graduation Ceremony - 2017*





# FACULTY OF PHARMACY



*Address: 2, Dunav Str. Sofia  
1000, Bulgaria  
<http://www.pharmfac.acad.bg>*

**Dean:** Prof. Nicolai Danchev, MD, PhD  
*Tel./ Fax (+359 2) 9879-874  
E mail: DEAN@pharmfac.acad.bg*

**Faculty Coordinator:** Prof. Valentina Petkova, PhD, DSc  
*Tel.(+359 2) 9236 593; Fax(+359 2) 9879-874  
E mail: vpetkova@pharmfac.acad.bg*

The Faculty of Pharmacy has been part of the Medical University of Sofia since 1995 and offers higher education in pharmacy. The Faculty of Pharmacy in Sofia celebrated its 75th Anniversary in 2017. It has six departments three of which teach pharmacy-oriented fundamental subjects (inorganic, analytical and organic chemistry, physical chemistry, botany and mathematics). Another departments offer the specific pharmaceutical subjects: Pharmaceutical technology and Biopharmacy, Pharmacognosy (Phytochemistry), Pharmaceutical Chemistry and Pharmaceutical Analysis, Pharmacology and Toxicology, Social Pharmacy, The medical subjects are taught by the corresponding departments at the Faculty of Medicine, Medical University of Sofia

The education course is organized in three levels and lasts five years. The first level is aimed at securing fundamental training of future pharmacists. The second level is oriented towards gaining knowledge and acquiring skills specific for the pharmaceutical profession. The education is organized in three profiles – general, clinical and industrial, the choice being made after the sixth semester. Students of both majors study special pharmaceutical and medical subjects. The third level of the study course -practicum- takes place in the X-th semester in public or hospital

pharmacies, which are established as training centers. The assessment of this practical work includes written and oral colloquia. For their graduation students in pharmacy are obliged to pass a state final certification examination or to prepare and defend a diploma thesis. The graduates are conferred a "Master" degree and the qualification of "Pharmacist".

*The first year* of the programme covers the subjects Mathematics; Biology; Physics and Biophysics; Latin language; Foreign Language; History of Pharmacy; Applied Mathematics; Anatomy and Physiology; Inorganic Chemistry.

*The second year* is dedicated to continuation of Anatomy and Physiology; the other subjects are Computer Techniques; Analytical Chemistry; Organic Chemistry; Microbiology; Pharmaceutical Botany; Physical Chemistry.

*In the third year* the curriculum includes Pharmaceutical Botany; Physical Chemistry; Pharmaceutical Chemistry; Pharmaceutical Technology and Biopharmacy, Part 1; Biochemistry; Clinical Chemistry; Hygiene and Ecology; Medical Techniques and Instruments; Pharmacognosy, Part 1; Pharmacology.

*In the fourth year* the studied subjects are Pharmaceutical Technology and Biopharmacy, Part 2; Pharmaceutical Analysis; Pharmacology; Social Pharmacy; Pharmacognosy; Pathonatomy and Pathophysiology; Toxicology; Pharmacognosy, Part 2; Medical Genetics; Clinical Medicine, Pharmacoeconomics and Pharmacotherapy.

The ninth semester covers the subjects Basics of Clinical Medicine; Pharmaceutical care, Biopharmacy and pharmacokinetics, Bromatology; Modern Requirements to the Production of Drugs.

The Faculty also offers instruction to extramural students and postgraduate education in five subjects: Pharmaceutical Technology and Biopharmacy; Drug Analysis; Medicinal Plants and Herbals; Clinical Pharmacy; Pharmacology; Hopital pharmacy; Organization and Economics of the pharmacy and distribution practice and Organization and Economics of the pharmaceutical manufacturing.

Location.

The Faculty building is located in the centre of the city of Sofia, 50 m away from the temple "St. Alexander Nevski" and 150 m behind the building of the National Assembly, near to the monument of Vassil Levski.



## DISCIPLINES

**MATHEMATICS:** ECTS credits 5,0

**Prerequisites:** Successful completion of secondary education.

<b>Horarium:</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Semester:** 1

**Contents:** Elements of linear algebra and analytical geometry, elements of the theory of numerical series and numerical functions of one or two variables, elements of differential and integral calculus, elements of the theory of ordinary differential equations.

**Objectives:** Gaining of knowledge of the basic fields of higher mathematics necessary for the understanding of the quantitative methods and models in physical chemistry, biochemistry and pharmacology, and of capability of unaided solution of some of the often encountered problems in pharmaceutical research.

**Assessment:** W/O, semester 1<sup>st</sup>.



\*\*\*

**HISTORY OF PHARMACY:** ECTS credits 3,0

**Prerequisites:** None.

**Horarium:** Lectures 30 Weeks 15  
**Semester:** 1

**Contents:** Development of the pharmaceutical knowledge and practice related to the development of society and cultural history of nations. The development of Bulgarian pharmacy is considered in the context of world pharmacy.

**Objectives:** To provoke respect to the pharmaceutical profession by acquainting the students with the contribution of various countries to the development of world pharmacy, as well as to elucidate the activities of famous old schools.

**Assessment:** Passing (on the “yes” or “no” basis) in written.

\*\*\*

**MOLECULAR BIOLOGY:** ECTS credits 5,0

**Prerequisites:** Successfully passed entry exams on biology and chemistry.

**Horarium:** Lectures 30 Weeks 15  
Practicals 30 Weeks 15

**Semester:** 2

**Contents:** Material basis of life. Organization of the living systems. Heredity and variety. The organism as a unified system. Immunological homeostasis. Sexual reproduction and individual development. Biological evolution and population genetics. Anthropogenesis. Ecology. Poisonous plants and animals with medical significance.

**Objectives:** Obtaining knowledge on the basic principles of organization and function of the living systems. Cellular and molecular bases of life. The human as a product of the biological and social evolution. Ecology and the role of humans in the biosphere.

**Assessment:** W/O, semester 2<sup>nd</sup>

\*\*\*

**GENERAL AND INORGANIC CHEMISTRY:** ECTS credits 10,0

**Prerequisites:** Successfully passed competitive examination on chemistry.

**Horarium:**

**Semester 1** Lectures 30 Weeks 15  
Practicals 45 Weeks 15  
**Semester 2** Lectures 15 Weeks 15  
Practicals 30 Weeks 15

**Contents:** The most important problems of the general theory as well as the systematic material of inorganic chemistry are included in the lecturing course. Particular attention is given to the macro- and microbiogenic elements and their substances which are of decisive importance for the existence and functioning of bio-systems. The laboratory exercises are preceded by a course of stoichiometric calculations. The practical training includes the solution of theoretical problems.

**Objectives:** Training in the basic manipulations in a chemical laboratory. Creation of a basis for the future education in all other chemical subjects.

**Assessment:** W/O, semester 2<sup>nd</sup>.

\*\*\*

**PHYSICS AND BIOPHYSICS:** ECTS credits 7,0

**Prerequisites:** Successfully passed examination on Higher Mathematics is recommended.

**Horarium:**

<b>Semester 1</b>	Lectures	30	Weeks	15
	Practicals	15	Weeks	15
<b>Semester 2</b>	Lectures	30	Weeks	15
	Practicals	15	Weeks	15

**Contents:** Structure and properties of liquids and solids. Optics - basics of refractometry, dioptrometry, photolorimetry, spectrophotometry, nephelometry, polarimetry, microscopy. Spectroscopy - atomic, molecular, X-ray, mass, NMR, EPR, Moessbauer. Ionization radiations - X-rays, radioactivity, dosimetry. Rheology of simple liquids and heterogeneous systems, haemorheology. Thermodynamics and Biothermodynamics. Biological and man-made membranes - functions, types, chemical composition, structure. Free-radical lipid peroxidation in biomembranes. Transport of substances through porous and semipermeable membranes, facilitated diffusion, active transport. Electrical properties of cells and tissues - biopotentials: static and dynamic, surface electrical charge, electrical conductivity.

**Objectives:** Knowledge necessary for the study of Analytical Chemistry, Physical Chemistry, Organic Chemistry, Pharmaceutical Chemistry, Technology of Medicinal Substances, Processes and Apparatuses, Chemical-Pharmaceutical Technology. Skills acquired by laboratory training.

**Assessment:** W/O, semester 2<sup>nd</sup>.

\*\*\*

**LATIN LANGUAGE:** ECTS

credits 5,0

**Prerequisites:** None.

**Horarium:** Seminars 60 Weeks 30

**Semesters:** 1 and 2

**Contents:** Notion of the Latin verb and some verbal forms in pharmaceutical terminology. Nouns, adjectives and numerals and their use in the specialized pharmaceutical language. Word-building: prefixes, suffixes. Term elements of Latin and Greek origin by means of which the complex medical and pharmaceutical terms have been created and are created at present. General rules in chemical nomenclature and in the formation of the denomination of drugs. Basics of the botanical nomenclature. Basic terms in pharmacognosy. Prescription - principles in making out a prescription, specific formulae in Latin and generally accepted abbreviations.

**Objectives:** Formation of a stable terminological basis in the beginning of the education in pharmacy which would facilitate the gaining of knowledge on the other objects foreseen in the teaching program.

**Assessment:** W/O, semester 2<sup>nd</sup>.

\*\*\*

**BULGARIAN LANGUAGE:** First academic year (for foreign students only): ECTS credits 4,0

**Prerequisites:** Training in a basic course of Bulgarian language and successfully passed examinations - oral and written.

**Horarium:** Seminars 120 Weeks 30

**Semesters:** 1 and 2

**Contents:** Texts from human anatomy and physiology, and biology, taught during the first academic year. Scientific-popular texts. Exercises on: basic phonetic rules in contemporary Bulgarian language. Lexicology - medical and pharmaceutical terminology. Functional-semantic structures building up the medical texts. Syntactic of the simple sentence.

Texts from human physiology, microbiology and botany, taught during the second academic year. Exercises on: syntax of the complex sentence. Structure of a scientific text. Functional semantic constructions typical of the Bulgarian medical text. Lexicology - medical and pharmaceutical terminology. Stylistics - text edition.

**Objectives:** Knowledge of the language necessary for the oral and written adequate communication in Bulgarian lingual medium - both in everyday life and in its academic aspects.

**Assessment:** W/O, semester 2<sup>nd</sup>

\*\*\*

**SPORTS:** ECTS credits 5,0

**Prerequisites:**

**Horarium:**

<b>Semester 1</b>	Lectures	0	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 2</b>	Lectures	0	Weeks	15
	Practicals	30	Weeks	15

**Contents:** To help students and their teachers to balance weekly the mental load and the emotions, related to sport activities. There are three forms of sport activity: standard term classes; competitive classes; additional courses on water and winter sports after the terms.

Term classes: aerobics, badminton, basketball, bodybuilding, volleyball, calanetics, swimming, skiing, tennis, table tennis, and football. Yearly the Department organizes sea and mountain courses during the holidays. The students can practice yachting, sculling, surfing, and swimming. The students can acquire skiing skills (at two different levels) and practice tourism.

**Objectives:**

**Assessment:**

\*\*\*

**STATISTICAL METHODS IN PHARMACY:** ECTS credits 4,0

**Prerequisites:** Successfully passed examination in Mathematics.

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	30	Weeks	15

**Semester:** 2

**Contents:** Elements of combinatorics and classical probability theory - random experiments and events. Statistical, classical and geometrical probability. Basic formulae for the probability of a random event. Sequences of independent experiments. Random quantities and their numerical characteristics. Theorem of Chebishev, Bernouli's law for big numbers and theorem of Liapunov. Elements of the mathematical statistics. Elements of the mathematical modeling.

**Objectives:** Knowledge of the basic sections of the probability theory, mathematical statistics and mathematical modeling that are necessary for the understanding of the quantitative methods and models of Physical Chemistry, Biochemistry, Biology, Medicine, Pharmacology and for the unaided solution of some of the problems often encountered in pharmaceutical research.

**Assessment:** Passing (on the "yes" or "no" basis) in two stages - practical and theoretical.

\*\*\*

### **HUMAN ANATOMY: ECTS credits 4,0**

<b>Horarium:</b> Lectures	30	Weeks	15
Practicals	15	Weeks	15

**Objectives:** The students acquire knowledge about the normal structure of the organs and systems of the human body.

**Contents: ANATOMY:** Skeletal bones and their connection. Muscles, blood vessels and nerves of the extremities. Muscles, vessels and nerves of the head. Muscles, blood vessels and nerves of the trunk. Viscera. Central nervous system and sensory organs. Topographic anatomy of head and neck.

**Semesters: 2**

**Assessment:** W/O, semester 2<sup>nd</sup>

\*\*\*

### **HUMAN PHYSIOLOGY: ECTS credits 7,0**

**Prerequisites:** None

**Horarium:**

<b>Semester 2</b>	Lectures	30	Weeks	15
	Practicals	0	Weeks	15
<b>Semester 3</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Contents:** Structure and function of cells, organs and systems building up the human organism. Mechanism, regulation and adaptation of physiological functions. Physiological methods for the investigation with applications in clinical and experimental practice.

**Objectives:** Understanding of the mechanism of action of medicinal substances.

**Assessment:** W/O, semester 3<sup>rd</sup>.

\*\*\*

### **PATHOANATOMY: ECTS credits 3,0**

**Prerequisites:** Successfully passed examinations on Anatomy and Physiology.

<b>Horarium:</b> Lectures	15	Weeks	15
Seminars	15	Weeks	15

**Semester:** 3

**Contents:** Processes of general pathoanatomy: necrosis and atrophy. Disorders in the metabolism of tissues and cells.. Disorders in the development of the organism (teratology). Drug injuries (drug disease), etc.

**Objectives:** Basic theoretical knowledge in the field of medicine in order to facilitate the understanding of other taught subjects.

**Assessment:** Passing (on the “yes” or “no” basis).

\*\*\*

### **INFORMATION TECHNOLOGIES: ECTS credits 3,0**

**Prerequisites:** None

<b>Horarium:</b> Practical	30	Weeks	15
----------------------------	----	-------	----

**Semester:** 3

**Contents:** Lay-out and principle of action of contemporary personal computers and related operation systems. Contemporary text-processing, graphical, tabular, editing and communicative possibilities of computer systems. Practical usage of the basic Internet and e-mail services.

**Objectives:** Gaining of knowledge on the lay-out and principle of action of contemporary personal computers and related operation systems. Development of capabilities for the practical usage of contemporary computer systems and information technologies.

**Assessment:** Passing (on the “yes” or “no” basis) in two stages - practical and theoretical.

\*\*\*

### **PATHOPHYSIOLOGY: ECTS 5,0**

**Prerequisites:** Successfully passed examinations on Anatomy and Physiology.

<b>Horarium:</b> Lectures	30	Weeks	15
Seminars	30	Weeks	15

**Semester:** 4

**Contents:** Processes of general pathology: disorders in circulation, forms of inflammation, regenerative growth, disorders in the development of the organism (teratology). Drug injuries (drug disease), etc.

**Objectives:** Basic theoretical knowledge in the field of medicine in order to facilitate the understanding of other taught subjects

**Assessment:** W/O, semester 4<sup>th</sup>

\*\*\*

### **ANALYTICAL CHEMISTRY: ECTS credits 15,0**

**Prerequisites:** Successfully passed examination on Inorganic Chemistry.

**Horarium:**

<b>Semester 3</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 4</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15

**Contents:** Qualitative analysis of cations and anions. Basic parts in the quantitative titrimetric analysis: acid-base equilibria, slightly soluble substances, complexometric equilibria, redox equilibria. Instrumental methods of analysis - potentiometry, spectrophotometry, chromatography (thin-layer chromatography and high-efficiency liquid chromatography).

**Objectives:** Gaining knowledge on the basic principles and methods of chemical analysis

**Assessment:** W/O, semester 4<sup>th</sup>

\*\*\*

### **ORGANIC CHEMISTRY: ECTS credits 15,0**

**Prerequisites:** Successfully passed examinations on Physics, Mathematics, as well as General and Inorganic Chemistry.

**Horarium:**

<b>Semester 3</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15
<b>Semester 4</b>	Lectures	30	Weeks	15
	Practicals	60	Weeks	15

**Contents:** Nomenclature of organic compounds. Structure of substances from the quantum-mechanical point of view. Basics of stereochemistry. Relationship between structure and reactivity. Mechanisms of organic reactions. Spectral methods of analysis (infrared spectroscopy, nuclear magnetic resonance, mass spectroscopy, electron spectroscopy). Fatty and aromatic, saturated and unsaturated hydrocarbons. Halogen derivatives, hydroxyl derivatives, aldehydes and ketones, carboxylic acids and their functional derivatives. Fatty and aromatic amines. Heterocyclic compounds with three- to six-atom cycles and one or two heteroatoms - oxygen, nitrogen and sulfur. Purines and pteridines. Organic compounds with biological activity. Medicinal substances.

**Objectives:** Fundamental knowledge of organic chemistry necessary for the training in pharmaceutical chemistry, pharmacognosy, biochemistry, technology of drug forms, chemical-pharmaceutical technology and other specialized subjects.

**Assessment:** Written examination on three themes and a problem on multistage synthesis in the frames of four hours; each theme and the problem have a relative assessment value of 25%.

\*\*\*

**MICROBIOLOGY WITH VIROLOGY:** ECTS credits 10,0

**Prerequisites:** None.

**Horarium:**

<b>Semester 3</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 4</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Contents:** General microbiology, infection and immunity, special microbiology.

**Objectives:** Knowledge of the morphology, structure and physiology of microorganisms causing contagious diseases. Principles and means of the treatment of contagious diseases using chemotherapy and biopreparations. Contagious process and immunity of the organism. Causes of various infections and principles of microbiological diagnostics as well as the significance of the normal human microflora. Knowledge of the significance and application of microbiology for the specialty "Pharmacy". Modern biotechnologies using microorganisms for the preparation of antibiotics and other contemporary medicines. Methods of microbiological analysis and control of medicines and biopreparations.

**Assessment:** Continuous assessment, written tests, colloquium, examination.

\*\*\*

**PHYSICAL CHEMISTRY WITH COLOID CHEMISTRY:** ECTS credits 7,0

**Prerequisites:** Successfully passed examinations on Pure Mathematics, Physics, and Inorganic Chemistry.

**Horarium:**

<b>Semester 4</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 5</b>	Lectures	15	Weeks	15
	Practicals	15	Weeks	15

**Contents:** Chemical principles in the pharmaceutical science are studied. Thermodynamics. Solutions of electrolytes and nonelectrolytes. Solubility and distribution phenomena. Interfacial phenomena. Colloids and rheology. Kinetics – transition - state theory. Catalysis. Enzyme kinetics. Pharmacokinetics. Quantum-mechanical principles in description of the chemical structure. Drug-biomacromolecule interactions.

**Objectives:** The physical chemical principles applied to the physical pharmacy, pharmacokinetics and pharmacodynamics.

**Assessment:** W/O, semester 4<sup>th</sup>.

\*\*\*

**PHARMACEUTICAL BOTANY:** ECTS credits 10,0

**Prerequisites:** None.

**Horarium:**

<b>Semester 4</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15
<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	30	Weeks	15

**Contents:** Anatomy of plants (cytology, histology, organography). Morphology. Physiology of plants, Phytogeography and ecology. Natural resources of medical plants. Methods of their effective use, protection and reproduction are studied together with their importance as sources of biologically active substances.

**Objectives:** Knowledge of the medical plants from the point of view of botany, in order to serve as a basis for the study of pharmacognosy.

**Assessment:** W/O, semester 5<sup>th</sup>

\*\*\*

**BIOCHEMISTRY:** ECTS credits 7,0

**Prerequisites:** Successfully passed examinations on Inorganic Chemistry, Analytical Chemistry and Organic Chemistry.

<b>Horarium:</b>	Lectures	45	Weeks	15
	Practicals	45	Weeks	15

**Semester:** 5

**Contents:** Structure and function of proteins and nucleic acids. Application of knowledge on polymers in the clinical practice. Enzymes. Clinical significance of enzymes. Antimetabolites. Bioenergetics. Citric acid cycle. Metabolism of carbohydrates. Metabolism of lipids. Metabolism of amino acids. Metabolism of nucleotides. Enzymopathies, related to metabolism. Integration and interrelations between metabolism of carbohydrates, lipids, amino acids and nucleotides. Metabolism of DNA, RNA and proteins. Carcinogenesis. Regulation of metabolism. Signal transduction. Hormones. Diabetes Mellitus. Biochemistry and functions of liver. Degradation and synthesis of porphyrins. Jaundices. Biochemistry of nutrition. Computer presentations are used at each lecture - Power Point illustrations and animations (molecular graphics) and other interactive programs.

This course is being now developed also for distance learning, appropriate for under- and post-graduates. The Web-based version of the course consists of lectures, interactive tests and simulations of clinical cases. Part of it is in the Internet:

<http://www.medfac.acad.bg/c&b/biochimia/content.html>

or <http://biochemistry.dir.bg>,

or <http://sites.portal.ngorc.net/biochemistry/egb/content.html>

**Objectives:** As biochemistry is the study of the molecular basis of life, the goals of the unit are:

(i) to provide theoretical knowledge on the content, structure and functions of the cell components, on the chemical reactions and processes occurring in cells and their regulation, and to explain their significance for organisms in norm and in disease, giving in each category examples about the application of theory in the clinical practice;

(ii) to pass from passive teaching to active regular or distance problem-based learning via application of theory for solving interactive Web-based computer-simulated cases and to provide self-assessment of knowledge via tests. To assure practical instruction and training in basic laboratory biochemical methods and professional teamwork.

**Assessment:** W/O, semester 5<sup>th</sup>

\*\*\*

**MEDICAL DEVICES:** ECTS credits 3,0

**Prerequisites:** Stereometry studied in the secondary school.

<b>Horarium:</b>	Practicals	30	Weeks	15
------------------	------------	----	-------	----

**Semester:** 5

**Contents:** Students get familiar with an international technical language as well as with its rules and application, adapted to the needs of students in pharmacy. During the practical exercises, elements of the construction of heat-exchangers used in pharmaceutical industry are drawn and sized. Computerized approaches are also taught.

**Objectives:** Knowledge of the rules of the Bulgarian State Standard and practical skills in technical drawing.

**Assessment:** Ongoing assessment.

\*\*\*

**PHARMACEUTICAL CHEMISTRY:** ECTS credits 18,0

**Prerequisites:** Successfully passed examination on Organic Chemistry.

**Horarium:**

<b>Semester 5</b>	Lectures	45	Weeks	15
	Seminars	30	Weeks	15
	Practicals	45	Weeks	15
<b>Semester 6</b>	Lectures	45	Weeks	15
	Seminars	30	Weeks	15
	Practicals	30	Weeks	15

**Semesters:** 5 and 6

**Contents:** Classical and modern medicinal substances are studied on the basis of a combined pharmacotherapeutic and chemical classification. Each part includes characteristics, structure, chemical denomination, properties, methods of preparation, biotransformation, relationship between structure and activity. Possibilities are considered of alteration of properties, toxicity, etc.

**Objectives:** In-depth knowledge of the items listed above.

**Assessment:** W/O, semester 6<sup>th</sup>

\*\*\*\*

**PHARMACEUTICAL TECHNOLOGY, Part 1:** ECTS credits 17,0

**Prerequisites:**

**Horarium:**

<b>Semester 5</b>	Lectures	30	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	75	Weeks	15

**Contents:** Conventional drug dosage forms - pulveres, liquida, unguenta, suppositoria, etc., pharmaceutical operations and pharmacopoeal characteristics.

**Objectives:** Providing the basic knowledge and practical skills in the preparation and characterization of conventional drug dosage forms.

**Assessment:** W/O, semester 6<sup>th</sup>

\*\*\*

**CLINICAL CHEMISTRY:** ECTS credits 5,0

**Prerequisites:**

<b>Horarium:</b>	Lectures	15	Weeks	15
	Practicals	45	Weeks	15

**Semester:** 6



**Contents:** Theoretical aspects of clinical chemistry. General problems concerning the materials used for investigation. Types of errors in laboratory diagnostics. Reference limits and values. Analytical reliability of the methods. Quality assurance in clinical laboratories. Basic knowledge on the methods used for the study of electrolytes, oligoelements, indices of the alkali-acidic state of blood, carbohydrates, proteins, enzymes, non-protein nitrogen-containing substances, lipids, hormones, drugs and drug monitoring.

**Objectives:** Skills for work in clinical laboratories as specialists in clinical chemistry.

**Assessment:** Oral examination, semester 6<sup>th</sup>

\*\*\*

### **PHARMACOGNOSY, Part 1: ECTS credits 17,0**

**Prerequisites:** Successfully passed examinations on Botany and Organic Chemistry.

**Horarium:**

<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 7</b>	Lectures	30	Weeks	15
	Practicals	75	Weeks	15

**Contents:** The curative raw materials of animal and vegetal origin are studied using physical, chemical, physicochemical and biological methods.

**Objectives:** Identification, elucidation of the qualitative and quantitative content of biologically active compounds in drugs.

**Assessment:** W/O, semester 7<sup>th</sup>

\*\*\*

### **PHARMACOLOGY: ECTS credits 15,0**

**Prerequisites:** Successfully passed majority of the courses dealing with medical and biological subjects.

**Horarium:**

<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15
<b>Semester 7</b>	Lectures	30	Weeks	15
	Practicals	75	Weeks	15

**Contents: Sixth semester.** Basic concepts of general pharmacology, necessary for the accumulation of fundamental information concerning the medicinal effect. Special pharmacology, in its parts on the central and autonomous neural systems is also started.

**Seventh semester.** Drugs affecting the cardio-vascular system, the cell-mediated systems, the endocrine system. The course also includes the study of the microbiological, pharmacodynamic, pharmacokinetic and healing aspects of the clinically applied antiinfectious drugs. Principles of chemotherapy for the selective toxicity with respect to bacterial, viral and fungal infectious causes are considered together with the chemotherapy of malignant tumors and chemoblastoses.

**Objectives:** On the basis of the already acquired knowledge on the essence of the physiological and pathophysiological processes in the organism, to focus on the medicinal effects of the various pharmacological remedies, with good knowledge of their pharmacodynamics, pharmacokinetics, therapeutic indications and undesired reactions.

**Assessment** W/O, semester 7<sup>th</sup>

\*\*\*

**SOCIAL PHARMACY AND PHARMACEUTICAL LEGISLATION:** ECTS credits 12,0

**Prerequisites:** Successfully completed seventh semester; passed examinations on basic pharmaceutical subjects.

**Horarium:**

<b>Semester 6</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15
<b>Semester 7</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Contents:** Possibility of harmonization of the problems of pharmaceutical legislation, management and marketing, and the good pharmaceutical practice in Bulgaria with those of the European countries.

**Objectives:** To create an overall concept on the stages from the investigation of drugs to their effective application to patients.

**Assessment:** W/O, semester 7<sup>th</sup>

\*\*\*

**HYGIENE AND ECOLOGY:** ECTS credits 4,0

**Prerequisites:** Completed education in Organic Chemistry, Inorganic Chemistry, Quantitative Analysis, Anatomy, Physiology, Pathoanatomy, Pathophysiology, Biochemistry and Clinical Chemistry, Clinical Medicine and Pharmacotherapy.

<b>Horarium:</b>	Lectures	30	Weeks	15
	Seminars	15	Weeks	15

**Semester:** 7

**Contents:** Basic ecological problems of pollution, protection and control of atmospheric air, waters and soils. Effect on human health. Physiology of nutrition. Biological and chemical safety of foods. Nutritional diseases. Hygienic requirements to the design and exploitation of pharmacies. Safety in the production of medicinal substances. Physical, chemical and biological factors of the working environment and related professional diseases with emphasize on the specific pathology in the cases of pharmacy personnel and workers in the chemical-pharmaceutical industry. Infection and epidemic processes. Antiepidemic measures. Ecological and antiepidemiological regularities of the infections of the respiratory system. Intestinal, transmittive and coating infections.

**Objectives:** Possibilities of participation in the system for the monitoring of environment, incl. Biomonitoring. Sanitary control in pharmacies. Participation in the development of prophylactic programs, and in antiepidemic activities.

**Assessment:** W/O, semester 7<sup>th</sup>

\*\*\*

**PHARMACEUTICAL TECHNOLOGY, Part 2:** ECTS credits 18,0

**Prerequisites:** Successfully passed examination on Pharmaceutical Technology and Biopharmacy, Part 1.

**Horarium:**

<b>Semester 7</b>	Lectures	30	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 8</b>	Lectures	30	Weeks	15
	Practicals	90	Weeks	15

**Contents:** Classical and modern approaches to the development and characterization of drug dosage forms: solid - (granules, capsules, tablets), sterile - (Parenteralia, Ophthalmica) and phytotherapeutica. Modern requirements for effective and safe dosage forms.

**Objectives:** Basic theoretical and practical knowledge of the formulation, production and control of dosage forms.

**Assessment:** W/O, semester 8<sup>th</sup>

\*\*\*

**PHARMACEUTICAL ANALYSIS:** ECTS credits 18,0

**Prerequisites:** Successfully passed examinations on Analytical Chemistry.

**Horarium:**

<b>Semester 7</b>	Lectures	30	Weeks	15
	Practicals	75	Weeks	15
<b>Semester 8</b>	Lectures	30	Weeks	15
	Practicals	90	Weeks	15

**Contents:** Possibilities of functional analysis and instrumental methods of analysis (spectroscopy in the UV, visible and IR spectral regions, chromatography, etc.) for the identification and assessment of the amount and purity of the medicinal substances are considered.

**Objectives:** To assure knowledge and skills in the quality control of medicinal substances.

**Assessment:** W/O, semester 8<sup>th</sup>

\*\*\*

**PHARMACOECONOMY:** ECTS credits 6,0

<b>Horarium:</b>	Lectures	30	Weeks	15
	Seminars	45	Weeks	15

**Semester:** 8

**Contents:** It compares the value of one pharmaceutical drug to another. It is a sub-discipline of health economics. A pharmacoeconomic study evaluates the cost (expressed in monetary terms) and effect (expressed in terms of monetary value, efficacy or enhanced quality of life) of a pharmaceutical product. There are several types of pharmacoeconomic evaluation: costminimization analysis, cost-benefit analysis, cost-effectiveness analysis and cost-utility analysis. Pharmacoeconomic studies serve to guide optimal healthcare resource allocation, in a standardized and scientifically grounded manner.

**Objectives:** Knowledge of the basic theoretical requirements and practical skills related to the teaching subject.

**Assessment:** W/O, semester 8<sup>th</sup>

\*\*\*

**TOXICOLOGY:** ECTS credits 7,0

**Prerequisites:** Basic knowledge in the fields of the medicobiological and pharmaceutical subjects, the respective examinations being successfully passed.

<b>Horarium:</b>	Lectures	30	Weeks	15
	Seminars	8	Weeks	2
	Practicals	52	Weeks	13

**Semester:** 8

**Contents:** General toxicology. Basic modern principles of medicinal toxicology, toxicokinetics and toxicodynamics. Mechanisms of toxic action. Undesired effects of drugs. Drug safety - monitoring of the undesired effects of drugs. Genotoxic, mutagenic, cancerogenic, teratogenic, immunotoxic action. Biotransformation - enzyme mechanisms. Cytochrome P450. Factors affecting toxicity (endogenous and exogenic). Toxicological aspects of medicinal interactions. Misuse of drugs, Drug dependence. Toxicomanias.

Special toxicology. Toxicological characterization of basic pharmacological groups. Mechanisms of the medicinal injuries of organs and systems. Injuries by nonmedicinal agents - alcohol and nicotine. Interaction with drugs. Toxic substances from the environment: pesticides, heavy metals, organic solvents, industrial and domestic gases, etc. Effect on the biotransformation processes. Toxicologic characteristics of medical plants and nutritive additives. Acute medicinal intoxications - modern antidotes, detoxicants.

**Assessment:** W/O, semester 8<sup>th</sup>

\*\*\*

**MEDICAL GENETICS:** ECTS credits 3,0

<b>Horarium:</b> Lectures	15	Weeks	15
Seminars	15	Weeks	15

**Semester:** 8

**Contents:** The etiology of inherited diseases, chromosome diseases and differential diagnosis with the teratogene effects of drugs and other exogenic factors in the etiology and pathogenesis of innate malformations are considered. Basic classes molecular diseases with emphasize on the pharmacogenetic defects, enzymopathies, defects in the connective tissue and the role of genetic factors in the oncogenesis as well as approaches to genetic prophylaxis and therapy, and principles of gene therapy also includes.

**Objectives:** Basic knowledge of the problems of inherited pathology.

**Assessment:** Passing (on the "yes" or "no" basis).

\*\*\*

**PHARMACOTHERAPY:** ECTS credits 12,0

**Prerequisites:** Successfully passed majority of the courses dealing with medical and biological subjects and the examinations on Pharmacology and Toxicology.

**Horarium:**

<b>Semester 8</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15
<b>Semester 9</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Contents:** The clinics and medical treatment of the following syndromes and diseases are considered: the infectious-inflammatory syndrome with lung localization, incl. bronchial asthma as well as the bronchospastic syndrome. Syndrome of cardiac insufficiency. Thromboembolic syndrome. Dislipidemias. Hypertonia; Syndrome of cardiac inhemia. Cardiac arhythmia. Hyperacidic syndrome. Noninfectious-inflammatory syndrome. Malignant tumors and chemoblastoses. Hyperglycemia and other endocrine disorders. Dermatologic diseases. Cerebral-vascular disease. Undesired reactions caused by prolonged pharmacotherapy.

**Objectives:** To provide information on the clinics of various syndromes and diseases of internal medicine, on the mechanisms of the pathologic process and on the pharmacotherapeutical approaches to their effective healing.

**Assessment:** W/O, semester 9<sup>th</sup>

**BIOPHARMACEUTICS AND PHARMACOKINETICS:** ECTS credits 10,0

<b>Horarium:</b> Lectures	30	Weeks	15
Seminars	90	Weeks	15

**Semester:** 9

**Contents:** Drug delivery systems - development and characterization; stability and stabilization of drugs, methods of assessment of the drug stability and of prediction of the drug shelf-life. Methods for the biopharmaceutical study of dosage forms; in vitro release and dissolution - mathematical evaluation and modes of presentation of the results. Pharmaceutical and bio-equivalence of drug preparations.

**Objectives:** To provide knowledge on modern drug delivery systems; basic methods for the evaluation of drug stability and stabilization, biopharmaceutical characterization of drug dosage forms.

**Assessment:** W/O, semester 9<sup>th</sup>

\*\*\*

**BROMATOLOGY:** ECTS credits 5,0

**Prerequisites:** Successfully passed examinations on Pharmaceutical Chemistry and Analytical Chemistry.

<b>Horarium:</b> Lectures	30	Weeks	15
Practicals	30	Weeks	15

**Semester:** 9

**Contents:** Composition of foods - proteins, fats, carbohydrates, vitamins, mineral salts, nutrient additives. Drug-food interactions on the level of resorption, distribution, metabolism, excretion. Food-poisonings of chemical and microbiological origins.

**Objectives:** To assure knowledge of the methods of food analysis and of the drug-food interactions.

**Assessment:** W/O, semester 9<sup>th</sup>

\*\*\*

**PHARMACOGNOSY, Part 2:** ECTS credits 7,0

**Prerequisites:** Successfully passed examination on Pharmacognosy, Part 1.

<b>Horarium:</b> Lectures	30	Weeks	15
Seminars	12	Weeks	3
Practicals	48	Weeks	12

**Semester:** 9

**Contents:** Extraction of drugs from freely growing and cultivated medicinal plants - advantages and drawbacks. Standardization of drugs and standard documents. Methods of isolation, identification, qualitative and quantitative analysis of biologically active substances of vegetal origin. Types of phytopreparations and stages of their manufacturing. Phytopreparations from various groups naturally occurring substances. Chemotaxonomy and significance for pharmacy.

**Objectives:** On the basis of the theoretical knowledge acquired from Pharmacognosy, Part 1, to provide the students with practical skills in this respect.

**Assessment:** W/O, semester 9<sup>th</sup>

\*\*\*

**PHARMACEUTICAL CARE:** ECTS credits 6,0

**Prerequisites:**

<b>Horarium:</b>	Lectures	30	Weeks	15
	Practicals	45	Weeks	15

**Semester:** 9

**Contents:** Scientific principles and international requirements at every stage of drug therapy for the purpose of achieving the elimination or reduction of a patient's symptomatology; arresting or slowing of a disease process; or preventing a disease or symptomatology. This process requires a review of patient's medication with reference to the doctor's diagnoses, laboratory tests and patient's information. It teaches good communication skills in order to gain a correct understanding of the relevance and impact of the various medications on the patient's pathology.

**Objectives:** Knowledge of the modern strategies in providing quality and safety at every stage of drug treatment.

**Assessment:** W/O, semester 9<sup>th</sup>

\*\*\*



# FACULTY OF PUBLIC HEALTH



*Address: 8 Bialo more Str., 1527 Sofia*  
*<http://foz.mu-sofia.bg>*

**Dean: Professor Tzecomir Vodenitcharov, MD, PhD, DSc**  
*Tel. +359 2 9432 127*  
*+359 2 9432 304*  
*E mail: vodenicharov@foz.mu-sofia.bg*

**Faculty Coordinator: Prof. Antoniya Yanakieva, PhD**  
*Tel. +359 2 851 01 22*  
*E-mail: erasmus@foz.mu-sofia.bg*

The Faculty of Public Health was established in 1995 as “Faculty of Nursing” with the support of the Stability Pact and in partnership with leading institutions of European Union member states and the World Health Organisation. Under Council of Ministers Decree, since 2001 the former Faculty of Nursing has been renamed to Faculty of Public Health and ever since it has been delivering educational, academic and scientific knowledge in the field of public health and the healthcare sector.

The Faculty of Public Health’s **vision** is to respond to the needs of modern society for public health education focused on innovative and sustainable theoretical and practical knowledge.

The **mission** of the Faculty of Public Health is responsibly and creatively to develop methodological grounds for educational and scientific activities in the field of public health and health management. The Faculty develops unique public health and health management specialists providing high level of professionalism, ensuring the provision of better access to appropriate, sustainable and high level healthcare.

The Faculty of Public Health, considering the need of new generation of health managers, provides appropriate education in order for this new generation to be adequately prepared for the dynamic processes in healthcare markets, and the new pluralistic managerial style consistent to the European standards

The Faculty of Public Health is a modern university formation for introducing students and graduates to the managerial science specific for the health sector – management of public health.

The Faculty of Public Health includes ten **departments**:

- Department of Health Policy and Management
- Department of Social Medicine
- Department of Medical Ethics and Healthcare
- Department of Medical Pedagogy
- Department of Preventive Medicine
- Department of Health Economics
- Department of Occupational Medicine
- Department of Nursing Care
- Department of Physiotherapy
- Department of Health Technology Assessment.

The Faculty of Public Health educates students in the following specialties and degrees.

### **BACHELOR DEGREE**

Public Health and Health Management

Health Care Management

Nursing

Midwifery

Physiotherapy

Medical Aid

### **MASTER DEGREE**

Public Health and Health Management

Health Care Management

Occupational Health

Clinical Medical Care

Strategical Management in the Pharmaceutical Industry

The **main objective** of the faculty is the development of the science for public health. The activity is devoted to the management of ideas and resources in the public health sector. The major and key tasks include creation and formation of a new generation of health managers and assistance for the management of the healthcare system.

### **Why the Faculty of Public Health?**

We integrate the theoretical approach and the praxis experience on base of multidisciplinary lecturers and partnerships. Prestigious undergraduate and postgraduate programs are offered to students with different professional background. In the education are engaged not only professors, but representatives of governmental bodies, NGO's and business.



**MAJOR „PUBLIC HEALTH AND HEALTH MANAGEMENT”**  
**FOR EDUCATIONAL AND QUALIFICATION DEGREE "BACHELOR" - FULL-TIME STUDY**

The program aims to develop in the student practical skills like:

- views on the role and essence of the health management
- critical analysis of problems
- understanding of the issues and priorities of the health system
- Orientation in the economical aspects
- Applying of economical approaches
- identifying of ethical aspects and solving ethical dilemmas
- planning and conducting epidemiological researches
- Knowledge about the main rules and legislation about the drug policy
- Knowledge about the rules of making medicines
- Marketing knowledge about drug policy
- Role, purpose and position of the health insurance in the health policy
- Knowledge about preventing strategies
- Applying the Models of Financing in the Health System

**Objectives:** The main objective of the discipline is to form modern views on the essence of the future profession of the students.

**Assessment:**

- theoretical exams
- semester examination

**Curriculum for the majority**

**I semester**

Number	Subject	ECTS
1	Introduction to the major	7
2	Medical ecology and hygiene	6
3	Introduction to health management	8
4	Introduction to economic knowledge	8
5	Latin and Medical Terms	2

**II semester**

Number	Subject	ECTS
1	Social medicine	7
2	Social medicine	7
3	Economy of Healthcare	7
4	Medical ethics and deontology	7
5	Latin and Medical Terms	3

**III semester**

Number	Subject	ECTS
1	Communication skills and conflicts management	7
2	Organization of the medical care	4
3	Medical sociology	6
4	Epidemiology of non-infectious diseases	6
5	Financial management in Healthcare	4
6	Training inpatient practice with practical seminar	4

**IV semester**

Number	Subject	ECTS
1	Methods of health training and education	4
2	Organization of the emergency medical care	5
3	Drug policy	4
4	Management of information – document flow in medicine and healthcare	4
5	Management of information – document flow in medicine and healthcare	5
6	Training inpatient practice with practical terminal	4
7	Bioethics	4
8	Time management	4

**V semester**

Number	Subject	ECTS
1	Health Insurance	6
2	Health promotion	7
3	Strategic management in Healthcare	8
4	Evidence based medicine	6
5	Training practice in emergency aid with practical terminal	3

**VI semester**

Number	Subject	ECTS
1	Introduction to health management	7
2	Outpatient care organization	6
3	Informatics in healthcare	7
4	Marketing in healthcare	6
5	Training outpatient practice with practical seminar	4

**VII semester**

Number	Subject	ECTS
1	Patients' rights	6
2	Fundamentals of occupational medicine	5
3	Problems related to ageing and old age	5
4	Labour and administrative law	5
5	Training outpatient practice with practical seminar	4
6	International health cooperation	6

**VIII semester**

Number	Subject	ECTS
1	Health law	7
2	Sport	9

*MAJOR "NURSING"**EDUCATIONAL AND QUALIFICATION DEGREE: BACHELOR*

**Total hours of theoretical and practical training, consultations, course assignments, semester and final state examinations – 5283 academic hours**

**Hours of theory – 2010 academic hours, including:**

- compulsory subjects + 2 Freely selectable – 1980 hours

- optional subjects – 30 hours

**Practical training – 3273 academic hours:**

- Training (clinical) practice - semester 1,2,3,4,5,6 – 1140 hours

- Pre-diploma (clinical) practice - 1600 astronomic hours (2133 academic hours)

**Credits:**

One credit corresponds to 30 hours workload (auditorium and independent) .

Credits from the course of study – 230.00

Credits from final state examinations – 10.00

Maximum number of credits – 240.00

**Curriculum for the majority****I semester**

№	SUBJECTS	ECTS
1	Philosophy and introduction to nursing. Theoretical bases.	12
2	Nursing care for patients with somatic diseases	6
3	Human anatomy and clinical pathology	3
4	Human physiology and pathological physiology	3
5	Latin with Medical Terms	2

6	Medical psychology	2
7	Medical ethics and deontology	2
8	Sport	4
9	Clinical practice	51
10	Pre-graduation practice	47

## II semester

№	SUBJECTS	ECTS
1	Philosophy and introduction to nursing. Theoretical bases.	12
2	Nursing care for patients with somatic diseases	6
3	Microbiology, parasitology and virology	2
4	Pharmacology	3
5	Internal diseases	6
6	Health promotion	1
7	Computer Science	4
8	Sport	4
9	Clinical practice	51

## III semester

№	SUBJECTS	ECTS
1	Nursing care for patients with surgical diseases	5
2	Paediatric nursing	3
3	Nursing for resuscitation and intensive care	3
4	Image diagnostics in the nursing practice	1
5	Hygiene and ecology	2
6	Dietotherapy	1
7	Internal diseases	6
8	Geriatrics	1
9	Surgery	5
10	Anaesthesiology and intensive care	4
11	Paediatrics and Neonatology	3
12	Clinical practice	51

## IV semester

№	SUBJECTS	ECTS
1	Nursing for young mothers and newly-born babies	2
2	Nursing for ENT diseases	2
3	Nursing for patients with infectious diseases	3
4	Surgery	5
5	Infectious diseases and epidemiology	2
6	Obstetrics and gynaecology	2

7	Children pedagogy and children psychology	1
8	Children pedagogy and children psychology	2
9	Clinical practice	51

#### V semester

<b>№</b>	<b>SUBJECTS</b>	<b>ECTS</b>
1	Nursing for patients with neurological diseases	3
2	Palliative nursing	2
3	Nursing for children and adults with disabilities	4
4	Medical devices in nursing	1
5	Medical genetics	1
6	Clinical laboratory, biochemistry and immunology	1
7	Nervous diseases and psychiatry	2
8	Eye diseases	1
9	ENT diseases	1
10	Skin and venereal diseases	1
11	Social and health law	2
12	Social medicine	2
13	Art therapy and art prophylaxis	2
14	Clinical practice	51

#### VI semester

<b>№</b>	<b>SUBJECTS</b>	<b>ECTS</b>
2	Physical therapy and rehabilitation	1
3	Geriatrics	1
4	Principles and methods of training	3
	<b>Two optional subjects of:</b>	2
	Art therapy and art prophylaxis	
	Health education	
	Alternative medicine	
5	Communicative training	
7	Clinical practice	51

#### VII semester

<b>№</b>	<b>SUBJECTS</b>	<b>ECTS</b>
1	Pre-graduation practice	47

#### VIII semester

<b>№</b>	<b>SUBJECTS</b>	<b>ECTS</b>
1	Pre-graduation practice	47

MAJOR: **MIDWIFERY**  
 EDUCATIONAL AND QUALIFICATION DEGREE: „**BACHELOR**”

**Total hours of theoretical and practical training, consultations, course assignments, semester and final state examinations**

**5298 academic hours**

***Hours of theory – 2025 academic hours, including:***

- compulsory subjects + 2 Freely selectable – 1995 hours
- optional subjects – 30 hours

***Practical training – 3273 academic hours:***

- Training (clinical) practice - semester 1,2,3,4,5,6 – 1140 hours
- Pre-diploma (clinical) practice - 1600 astronomic hours (2133 academic hours)

**Credits:**

One credit corresponds to 30 hours workload (auditorium and independent) .

Credits from the course of study – 230.00

Credits from final state examinations – 10.00

Maximum number of credits – 240.00

**Curriculum for the majority**

**I semester**

Number	Subject	ECTS
1	Philosophy and introduction to nursing and midwifery. Theoretical bases	8
2	Anatomy and general clinical pathology of human	4
3	Human physiology and pathological physiology	4
4	Microbiology, parasitology and virology	2
5	Hygiene and ecology	1
6	Latin with Medical Terms	2
7	Medical psychology	2
8	Medical ethics and deontology	2
9	Sport	4
10	Clinical practice	51

**II semester**

Number	Subject	ECTS
1	Philosophy and introduction to nursing and midwifery. Theoretical bases	8
2	Midwifery	20
3	Clinical laboratory and biochemistry	2
4	Medical devices in midwifery and gynaecology practice	1

5	Medical genetics	2
6	Dietotherapy	1
7	Computer Science	4
8	Sport	4
9	Clinical practice	51

### III semester

Number	Subject	ECTS
1	Special care for pregnant women with normal and pathological pregnancy	4
2	Special care for women in child-birth with normal and pathological delivery	6
3	Special care for pregnant women, women in child-birth and women with gynaecological diseases with somatic diseases	1
4	Special care for children in neonatology and paediatrics	4
5	Midwifery	20
6	Gynaecology	12
7	Neonatology	2
8	Pharmacology	3
9	Internal diseases	2
10	Principles and methods of training	1
11	Clinical practice	51

### IV semester

Number	Subject	ECTS
1	Special care for pregnant women with normal and pathological pregnancy	4
2	Special care for women in child-birth with normal and pathological delivery	6
3	Special care for women with normal and pathological puerperium	4
4	Special care for children in neonatology and paediatrics	4
5	Midwifery	20
6	Gynaecology	12
7	Children's diseases	2
8	Image diagnostics in midwifery and gynaecology practice	1
9	Disaster medicine	2
10	Social and health law	2
11	Clinical practice	51

**V semester**

Number	Subject	ECTS
1	Special care for women with normal and pathological puerperium	4
2	Special care for pregnant women and women in child-birth in anaesthesiology and intensive therapy	2
3	Special care for pregnant women and women in child-birth with surgical diseases	2
4	Midwifery	20
5	Gynaecology	12
6	Physical therapy and rehabilitation	1
7	Surgery	2
8	Anaesthesiology, resuscitation and intensive care	2
9	Social and health law	2
	<b>Two optional subjects of</b>	
10	Operative midwifery technique	2
11	Ultrasound diagnostics in Obstetrics	2
12	Art therapy and art prophylaxis	2
13	Communicative training	2
14	Clinical practice	51

**VI semester**

Number	Subject	ECTS
1	Special care for women with gynaecological diseases	3
2	Special care for pregnant women, women in child-birth and women with gynaecological diseases with infectious and venereal diseases	1
3	Midwifery and nursing for women with oncologic diseases	2
4	Midwifery	20
5	Gynaecology	12
6	Infectious diseases and epidemiology	2
7	Skin and venereal diseases	1
8	Eye diseases	1
9	ENT diseases	1
10	Sexology and family planning	2
	<b>Two optional subjects of:</b>	2
11	Operative midwifery technique	
12	Ultrasound diagnostics in Obstetrics	
13	Art therapy and art prophylaxis	
14	Communicative training	
15	Clinical practice	51



**VII semester**

Number	Subject	ECTS
1	Pre-graduation practice	46

**VIII semester**

Number	Subject	ECTS
1	Pre-graduation practice	46

**MAJOR "MEDICAL AID"****FOR EDUCATIONAL AND QUALIFICATION DEGREE "BACHELOR"**

**Total hours of theoretical and practical training, consultations, course assignments, semester and final state examinations – 5384 academic hours**

**Hours of theory – 2250 academic hours, including:**

- compulsory subjects – 2190 hours
- freely selectable – 60 hours
- optional subjects – 30 hours

**Practical training – 3134 Practical training**

- Training (clinical) practice - semester 1,2,3,4,5,6 – 1000 hours
- Pre-diploma (clinical) practice –1600 astronomic hours (2133 academic hours)

**Credits:**

One credit corresponds to 15 hours workload.

Credits from the course of study – 230.00

Credits from final state examinations – 10.00

Maximum number of credits – 240.00

**Curriculum for the majority****I semester**

Number	Subject	ECTS
1	Biology	1
2	Human anatomy	6
3	Human physiology	6
4	Latin with Medical Terms	2
5	Microbiology, parasitology and virology	2
6	Medical ethics and deontology	2
7	Medical psychology	2
8	Communication skills	3
9	Sport	4
10	Training practice	37

**II semester**

Number	Subject	ECTS
1	Human anatomy	6
2	Human physiology	6
3	Medical Physics and Equipment	3
4	Biochemistry	2
5	Clinical laboratory	2
6	Computer Science	2
7	Patient care and nursing equipment	2
8	Sport	4
9	Two optional subjects of:	4
10	Training practice	37

**III semester**

Number	Subject	ECTS
1	Pharmacology	5
2	Physical therapy	1
3	Hygiene and Ecology	1
4	Pathoanatomy	2
5	Nutrition and Dietetics	1
6	Surgery	8
7	Internal diseases	24
8	Primary Level Health Care (Instead of General Medicine)	10
9	Social and health law	1
10	Medical insurance in emergency/ <u>disaster situations</u>	2
11	Training practice	37

**IV semester**

Number	Subject	ECTS
1	Pharmacology	5
2	Pathophysiology	2
3	Surgery	8
4	Children's Diseases	4
5	Internal diseases	24
6	Eye diseases	1
7	ENT diseases	1
8	Skin and venereal diseases	1
9	Training practice	37

**V semester**

Number	Subject	ECTS
1	Imaging Diagnostics	2

2	Orthopedics and Traumatology	3
3	Neurological diseases	3
4	Psychiatry	2
5	Resuscitation and intensive care	5
6	Children's Diseases	4
7	Internal diseases	24
8	Oncology and palliative care	2
9	Emergency medical care	10
10	Training practice	37

#### VI semester

Number	Subject	ECTS
1	Urology	1
2	Obstetrics and Gynecology	5
3	Geriatrics	4
4	Infectious Diseases and Epidemiology	4
5	Internal diseases	24
6	Emergency medical care	10
7	Social medicine and health promotion	2
	<b>Two elective disciplines from</b>	4
8	Quality of Life for Patients with Chronic Diseases	
9	Reanimate care and intensive care	
10	Emergencies in pediatric diseases	
11	Doctor's assistant at general practitioner	
	<b>Elective/ Faculty subjects</b>	2
12	Forensic Medicine - Practicals	
13	Emergencies in major types of diseases	
14	Emergency help in case of a sudden change in the state of health of adults and children	
15	Emergencies in major types of diseases	
16	Clinical practice	37

#### VII semester

Number	Subject	ECTS
1	Pre-graduation practice	46

#### VIII semester

Number	Subject	ECTS
1	Pre-graduation practice	46

**MAJOR „PUBLIC HEALTH AND HEALTH MANAGEMENT”**  
**FOR EDUCATIONAL AND QUALIFICATION DEGREE „MASTER”**

**I semester**

<b>Number</b>	<b>Subject</b>	<b>ECTS</b>
1	Social medicine	3
2	Health management I- resource and activity management	3
3	Health management II – Principals of HTA	3
4	Epidemiology – risk management	3
5	Extreme situations - risk assessment	2
6	Health management III – Strategical marketing in the healthcare	3
7	Organizational behavior	3
8	Health economics	3
9	Medical Sociology	2
10	Modern Health Policy Technologies	2
11	Prevention of stress and professional exhaustion/ burn out syndrome	2

**II semester**

<b>Number</b>	<b>Subject</b>	<b>ECTS</b>
1	Bioethics	3
2	Financial Management, Financial Planning and Controlling in Healthcare	3
3	Health Promotion and Disease Prevention	3
4	Applied epidemiology - medicine and health policy based on evidence	3
5	Law in healthcare	3
6	Pharmacoeconomics	3
7	Ethics of Health Policy	3
8	Analytical modeling	2
9	Methodology and organization of the research work	2
10	<b>Elective/Faculty subjects</b> Communicative training	2
11	<b>Thesis Defence</b>	15

**MAJOR “ KINESITHERAPY”**

**EDUCATIONAL AND QUALIFICATION DEGREE: „BACHELOR”**

**Curriculum for the majority**

**I semester**

<b>Number</b>	<b>Subject</b>	<b>ECTS</b>
1	Anatomy	8
2	Biochemistry	2
3	Latin with Medical Terms	2
4	Medical ethics and deontology	2
5	Medical psychology	2
6	Hygiene and Ecology	1
7	First Aid Health Care	1
8	Theory and Methodology of Physical Education and Sports Training	1
9	Sport	1
10	Basic gymnastics	2
11	Health and Safety at Work	2
12	Medicine in disaster situation	2
13	Specialized English, German, French languages	2

**II semester**

<b>Number</b>	<b>Subject</b>	<b>ECTS</b>
1	Anatomy	8
2	Biomechanics and biophysics	4
3	Physiology	4
4	Massage	11
5	Natural, transformed physical factors and balneology	11
6	Therapeutic bases and means of kinesitherapy	6
7	Kinesiological bases of kinesitherapy	2
8	General Methods for Functional Studies and Assessment in Kinesitherapy	5
9	Specialized English, German, French languages	2
10	Clinical practice	52
11	/Summer clinical practice	16

**III semester**

<b>Number</b>	<b>Subject</b>	<b>ECTS</b>
1	Pathophysiology	2
2	Massage	11
3	Natural, transformed physical factors and balneology	11
4	Manual hand mobilization techniques of peripheral joints	3
5	Therapeutic bases and means of kinesitherapy	6

6	General Methods for Functional Studies and Assessment in physiotherapy	5
7	Pathogenesis - Functional Analysis and Assessment	4
8	Imaging Diagnostics	2
9	Pharmacology	2
10	Thai massage	2
11	Aroma therapy	2
12	Clinical practice	52

#### IV semester

Number	Subject	ECTS
1	Pathoanatomy	2
2	Physiotherapy in orthopedics and traumatology	7
3	Massage	11
4	Natural, transformed physical factors and balneology	11
5	Orthopedics and traumatology with orthotics and prosthetics	6
6	Internal diseases	5
7	Neurological diseases	6
8	Clinical practice	52
9	Summer clinical practice	16

#### V semester

Number	Subject	ECTS
1	Physiotherapy in orthopedics and traumatology	7
2	Physiotherapy in internal diseases	6
3	Kinesitherapy in neurological and mental diseases	8
4	Muscle techniques and mobilizations of peripheral nerves	2
5	Orthopedics and traumatology with orthotics and prosthetics	6
6	Neurological diseases	6
7	Clinical practice	52

#### VI semester

Number	Subject	ECTS
1	Physiotherapy in internal diseases	6
2	Kinesitherapy in neurological and mental diseases	8
3	Physiotherapy in surgery	3
4	Physiotherapy in Obstetrics and Gynecology	2
5	Pediatrics	2
6	Physical analgesia	2
7	Obstetrics and Gynecology	2
8	General Surgery	2

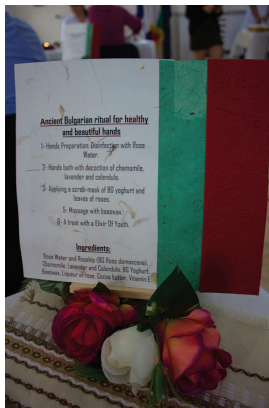
9	Rehabilitation of grip and gait	2
10	Clinical practice	52

## VII-ми семестър

Number	Subject	ECTS
1	Physiotherapy in child diseases	3
2	Physiotherapy in geriatrics	1
3	Ergotherapy	2
4	Adapted physical activity	2
5	Social medicine, social rehabilitation and health promotion	2
6	Basics in Scientific Research	2
7	Social and health legislation	1
8	Clinical neurorehabilitation	2
9	Clinical cardiorehabilitation	2
10	Reflex Locomotion according Vojta	2
11	Clinical Onco Rehabilitation	2
12	Clinical practice	52

## VIII semester

Number	Subject	ECTS
1	Pre-graduation practice	20



# MEDICAL COLLEGE – SOFIA

*Address: 3 Jordanka Filaretova str., Sofia*

**Director: Prof. Zaharina Savova, MD, PhD**

Tel: +359 2 915 46 46

Fax: + 359 2 852 40 40

E mail: **office@mc.mu-sofia.bg**

**Faculty Coordinator: Prof. Antoniya Yanakieva, PhD**

Tel. +359 2 851 01 22

*E-mail: erasmus@foz.mu-sofia.bg*



The Medical College “J. Filaretova” is the oldest medical institution and largest medical education institution in Bulgaria for the education of medical specialists with college degree in the field of “health care”. Following the complete three year course of education, the successful graduates of the college are awarded the educational qualification entitled “professional bachelor in...”. The education at the Medical College is full-time.

The college degree educates its students by strictly following the latest educational plans and programs approved by Bulgarian Ministry of Science and Education and the other countries in the European Union.

The educational process is carried out by leading specialists from the Medical University – Sofia – Professors, Assoc. Professors, and Assistant Professors with Ph.D.

The practical education of the students is carried out in the most modern and prestigious hospitals, medical laboratories, facilities and etc. in the Medical University Sofia. There the students acquire, practice, and refine the practical skills that they will need in their career.

All the specialties in the Medical College “J. Filaretova” are some of the most needed professions in the world. All countries in EU have a staggering need for our capable and well trained specialists. According to a recent study most of our specialties ranked near the top of the “100 recession proof jobs.

The building of the college is an architectural and cultural landmark and was donated by the famous Bulgarian patriot J. Filaretova over 110 years ago. The college has many modern lecture halls, laboratories, and cabinets equipped with modern medical and AV technology, the college also has a computer room, library, sports saloon and etc.





**Specialty “Medical Laboratory Assistant”**

Duration of education: 3 years

The motto of this specialty is: “Our goal is accuracy”.

The Medical Laboratory Assistant is the principal performer of a wide spectrum of activities in specialized clinical, microbiological, histological, parasitological and other laboratories. He has professional training, skills and knowledge for independent work in the pre-analytical, analytical and post-analytical phases of the laboratory assays.

The Medical Laboratory Assistant participates in the diagnostic, curative, prophylactic and scientific activities in hospitals and scientific institutes.

In order to achieve the educational and qualification degree “Professional Bachelor”, The Medical Laboratory Assistant has to master a certain knowledge and skills in solid list of Medical, Biochemical, Technical and Social Science and Practices.

The classes are lead in contemporary equipped educational laboratories with independent working places.

The tradition in education of Medical Laboratory Assistants in the Medical College – Sofia and the high level of training allows them for successful professional realization. They are sought and preferred frames for job.

The new graduates start work in some of the most prestigious medical, scientific and industrial clinical, hematological, microbiological, serological, histological, parasitological, genetic and etc. laboratories.

**FULL – TIME/ ECTS credits: 183**

<b>Total for all semesters</b>	<b>Horarium</b>	<b>Lectures</b>	<b>Practical Exercises / pre-diploma training</b>	<b>Semesters</b>
	3905	876	1985 / 1044	6



**Specialty “X-Ray Technician”**

Duration of education: 3 years

Being an X-ray technician is a profession of extremely high expectations for the personal qualities and the professional characteristics of the specialists. The X-ray technicians must be dynamic, versatile, independent and good team players. It no longer applies to simple old X-ray pictures, but includes knowledge of a huge number of methods that are invisible to the human eye (ultra sound, mammography, MRI, CT scan, and etc)

The profession of an X-ray technician has been completely transformed in the past few decades and the old stigmas that it is dangerous have been alleviated by many modern innovations and

mechanizations. Being one of the fastest developing areas in health care it is more and more heavily dependent on Information and Communication Technologies which makes it the perfect choice for people who want to combine their love for modern technology and health care. Today most of the diagnostic tasks in front of the Physicians are done by the x-ray technicians. In order to compete them the X-ray technicians must have solid knowledge in physics, anatomy, radiobiology, it is of vital importance to know the diagnostic process and treatment of different illnesses.

Our graduates can start work at:

- X-ray studies and X-ray wards at Diagnostic-consultant Centers, highly specialized hospitals, scientific institutes, dispensaries, sanatoria, resorts, and etc, where could be used: X-ray diagnostic sets for conventional or with the use of a contrast media investigations; DSA sets – for interventional radiology investigations Ultra sound sets; Computer tomography sets; MRI sets; Mammography sets; Sets for post processing or saving images; X-ray sets used by dentists:
- Radiation therapy departments
- Nuclear medicine labs
- Radio-immunology labs
- Highly specialized labs where different methods are combined / EEG, EMG, etc/
- Radiobiology labs or studies where sources of radiation are used for diagnostic or treatment purposes

**FULL – TIME/ ECTS credits: 183**

Total for all semesters	Horarium	Lectures	Practical	Semesters
			Exercises / pre-diploma training	
	3780	917	968 / 1895	6

### ***Specialty “Dental technician”***

Duration of education: 3 years

The specialty “dental technician” is a medico-technical specialty that is vital for orthodontic and prosthetic dental medicine. This is a profession for the artist at heart, and for the people that love creating beauty and a wonderful smile in others.

The dental technician is a highly qualified specialist that plans, develops and creates, using the most modern materials and technological methods different kinds tooth prosthetic constructions, face and jaw prosthetics, orthodontic apparatuses and etc., that have been ordered from the dental doctors (dentists).

During their education the students learn many different disciplines that will broaden their horizons and also give them the knowledge and skills to make them extremely competitive after graduation. Some of the students start working even before graduation in dental labs, using the most modern materials, instruments tools available to the profession.

Thanks to the close contacts with the leading dental firms often the medical collage organizes guest lectors to make presentations of the innovations in the field. Those students that have interest can also do scientific work along with their lecturers.

The graduated dental technicians can work mainly in dental technician labs in Bulgaria and also any where in the world.

**FULL – TIME/ ECTS credits: 183**

Total for all semesters	Horarium	Lectures	Practical	Semesters
			Exercises / pre-diploma training	
	3650	602	1013 / 2035	6

***Specialty “Physical Therapist”***

Duration of education: 3 years

The Physical Therapist takes an active part in providing of medical rehabilitation treatment during all stages of a treatment process.

The Physical Therapist works under prescription of a doctor of physical and rehabilitation medicine. The Physical Therapist develops and provides the rehabilitation program of each patient. The Physical Therapist is a part of a multidisciplinary team with a physician, nurse, social worker, speech therapist, pedagogue, psychologist, occupational therapist.

The Physical Therapist should have a great amount of medical, social and special knowledge of kinesitherapy, massage, electrotherapy, hot- and cold-therapy, hydrotherapy, magnet-, ultra sound-, high-frequency therapy, aerosol therapy, spa therapy, occupational therapy.

The Physical Therapist who is graduated at Medical College has competence to work in both state and private practice at: Specialized and general hospitals; Medical centers; Physical therapy departments; Reflexotherapy and SPA centers; In the field of sport and professional injuries; Social centers and special schools; Resorts, sport clubs; Home therapy.

**FULL – TIME/ ECTS credits: 183**

Total for all semesters	Horarium	Lectures	Practical	Semesters
			Exercises / pre-diploma training	
	4180	824	1251 / 2105	6

***Specialty “Assistant Pharmacist”***

Duration of education: 3 years

The assistant Pharmacist is an assistant to master pharmacists and take active part in the medicines supply and prescription drug production as:

- assist in the creation of pharmaceutical recipes and medicinal sheets;
- assist in the preparation of injectable formulations;
- provides the supply of pharmaceutical and medical-prophylactic institutions with medicines;
- works in section “Drugs without prescriptions” in the reception department of pharmacy;

- participate as an analyst in the analysis of pharmaceuticals;
- are involved in the production of drugs and formulations in pharmaceutical factories. There is an increased interest in this specialty largely due to the feasibility of development of private business. In cities with a population up to 5000 inhabitants assistant pharmacist has the right to open private pharmacies and to manage it and also to own drugstore and work in it. Certified assistant pharmacists can work in: Pharmacies and hospital pharmacies; Herbal pharmacies; Pharmacy stores; Control and analytical laboratories; Research laboratories; Pharmaceutical factories.

**FULL – TIME/ ECTS credits: 183**

Total for all semesters	Horarium	Lectures	Practical	Semesters
			Exercises / pre-diploma training	
	3900	1012	888 / 2000	6



***Specialty “Public health inspector ”***

Duration of education: 3 years

The greatest leaps in longevity and quality of life are not due to better treatments but because of sanitary conditions and prophylactics. That’s why our motto is: “It is far better to conduct prophylactics of a disease than to treat it”. Public health care needs systemic monitoring of the factors of work, education, living, and surrounding environments in order to determine their effect on the health of the population.

In specialty Inspector of Public Health students conduct the following activities:

- Control of compliance with health requirements for sites of public-purpose products, goods and activities of importance to human health and factors of environment;
- Control of infectious diseases;
- Control on health status of people who have had contact with infected persons, contagious and suspected of suffering from infectious diseases, as well as other persons in epidemic indications;
- Promotion of health and integrated disease prevention;
- Laboratory control of the environment and analyzing and evaluating their impact on public health;
- Monitoring, evaluation and control of noise in urban areas and public buildings, contaminants in food and drinking water;

Our graduates can start work in: Regional Inspection for protection of the environment and water; In departments of hospital hygiene; Occupational Health Services; Border control.

**FULL – TIME/ ECTS credits: 183**

Total for all semesters	Horarium	Lectures	Practical	Semesters
			Exercises / pre-diploma training	
	3730	1072	778 / 1880	6



**Specialty "Medical Aesthetician" (Medical cosmetics)** Duration of education: 3 years

Medical Cosmetics is a contemporary, modern and attractive specialty. Our motto is "Beauty and health for all". This is the first chance for quality higher education in the aesthetic medical care. In our college the students excel in the field of aesthetic cosmetics and beauty products.

The medical cosmetologist applies cosmetic care by him or her self according to the acquired professional skills and in collaboration with other medical and non medical specialists. They also perform a myriad of tasks in the field of healthcare and cosmetic services

Our graduates can start work in: Cosmetic studios; Beauty centers; Cosmetic medical centers; SPA-centers, fitness clubs, hotels; Dermatology Clinics/Offices; Clinics of Aesthetic Medicine; Make up in theater, cinema, television and others.

**FULL – TIME/ ECTS credits: 180**

Total for all semesters	Horarium	Lectures	Practical	Semesters
			Exercises / pre-diploma training	
	3035	859	862 / 1350	6



**Specialty “Massage therapist” with visual impairments** Duration: of education 3 years

This specialty has been created only for persons with visual impairments diagnosed by an official medical commission.

Massage is a part of therapeutically program and also for health promotion.

Massage therapist with visual impairments graduated at Medical College is a medical specialist.

Massage therapist works under prescription of a doctor of physical and rehabilitation medicine and takes part of a multidisciplinary team with a physician, physical therapist, nurse, social worker, pedagogue, psychologist, occupational therapist.

Massage therapist should have high level of communication and professional skills and also great knowledge of massage, kinesitherapy, hot- and cold-therapy and parts of electrotherapy.

Massage therapist has competence to work at: Specialized and general hospitals; Medical centers; physical therapy departments; reflexotherapy and SPA centers; departments of hydrotherapy and sport medicine; resorts, sport clubs; Social centers.

**FULL – TIME/ ECTS credits: 183**

Total for all semesters	Horarium	Lectures	Practical Exercises / pre-diploma training	Semesters
	3610	692	983 / 1935	6

## **SUBSIDIARY – VRATSA**

**Professor Ivan Mitev, MD**

*Address: Vratsa – 3000, University Complex  
Corpus 1, fl.1 and fl. 2*

**Director: Assoc. Prof. Pavlinka Dobrilova, PhD**

Tel.: +359 92 660 156  
+359 92 645176

**Faculty Coordinator: Prof. Antoniya Yanakieva, PhD**

Tel. +359 2 851 01 22

*E-mail: erasmus@foz.mu-sofia.bg*



The subsidiary is founded in 1951 as a school for doctor's assistants. The aim was to assure the needs for medical staff in the central, southern and northwestern parts of Bulgaria. It was a school for doctor's assistants for 10 years and a new specialty was founded – nurse with general qualification in 1961. During the next years a lot of specialties emerged:

- In 1966 – Children's nurse
- In 1974 - Dentist's nurse
- In 1990 – Midwife
- In 2004 – Medical cosmetics

In 1997 by a decree of the Ministry of Councils of the Republic of Bulgaria the school is transferred from the Ministry of Health to the structure of the Medical University – Sofia, where it is as a Medical college until 2009.

On June 2<sup>nd</sup> 2009 by a decree of the National Assembly the college is reorganized as a Subsidiary-Vratsa of the Medical University – Sofia for students' education in the specialties "nurse" and "midwife" of professional direction "healthcare".

The transition to the Medical University – Sofia requires an academic structure. That is why two Departments are formed:

- Medico-social science
- Healthcare

The education in all theoretical disciplines meets the legal requirements for a subsidiary – over 70% of the lecturers are delivered by PhD or doctor's degree lecturers from the Medical University – Sofia.

The practical training is conducted at the accredited healthcare institutions, social and medico-social institutions as well.

The education in the two specialties – nurse and midwife lasts for 4 years and the students are awarded Bachelor's degree in professional direction healthcare.

Post-graduate specializations are as follows:

- Social activities for nurse – 1 year for students with Bachelor's degree in nursing;
- Breastfeeding, balanced and healthy diet consultant - 1 year for graduated nurses, midwives and doctor's assistants.

All successfully graduated students get a specialty-certificate.





Association of Medical Students in Bulgaria – Sofia (AMSB – Sofia) is a non-governmental organization which takes active part and has influence in the public health in Bulgaria. It is an organization with over 20 years of experience which represents students from the Medical University of Sofia.

Together with the other 5 Local Committees of AMSB, we take part in shaping youth and health policies in Bulgaria. Our members are ambitious, enterprising, qualified and responsible young people who are constantly occupied with different projects and programs connected with medical education, public and reproductive health and human rights. AMSB-Sofia is a member of the largest international students' association in the world, which is a representative of more than 1,3 million medical students from more than 130 countries worldwide – IFMSA – International Federation of Medical Students' Associations as well as the EMSA – European Medical Students Association, the Association of Medical Students in Bulgaria, the National Youngsters' Forum and many more.

AMSB-Sofia's biggest project is International Congress of Medical Sciences for students and young doctors.

ICMS 2018 welcomed 560 Participants from over 70 different countries around the world.

Medical Students and Young Doctors were brought together for an unforgettable event offering more than ever before!

More than 200 Oral and Poster Scientific Research projects were presented by students and accessed by a scientific jury made up of doctors and academics on various fields.

4 Keynote speakers

- Mr. Ross Fisher, Pediatric Surgeon
- Prof. Ferdinand Waldenberger, Cardiac Surgeon
- Prof. Randa Akouri, Obstetrician and Gynecologist
- Dr. Nikolay Yanev, Maxillofacial Surgeons

who took the audience through a journey of innovation, explained the realities of their field, as well as the difficulties they are called to overcome

Participants could choose from more than 42 different Hands-On workshops organised to teach students essential practical skills.

For the first time ever, ICMS held Ace the Case: The Clinical Competition, designed to bring students together for one sole purpose: To cooperate, learn from each other and diagnose a set of virtual patients efficiently.

Another first-time event, Science On Trial - The Debates, brought students from different backgrounds together to debate upon medically and socially relevant topics, aiming at a future where medical professionals are open to discussions and ultimately have the ability to advocate for their patients.

This year ICMS took the future of medical education one step further, offering alternative platforms for students to learn, grow and be inspired to do better!



# CONTENT

1. Medical University - Sofia .....	3
2. General Pactical Information .....	7
3. Faculty of Medicine .....	11
4. Faculty of Dental Medicine .....	31
5. Faculty of Pharmacy .....	48
6. Faculty of Public Health .....	65
7. Medical College “Jordanka Filaretova” .....	82
8. Subsidiary - Vratza “Prof. Ivan Mitev”.....	89
9. Association of Medical Students in Bulgaria (AMSB) - MU-Sofia .....	91

This ECTS Guide is published with the support of the Erasmus+ programme of the European Union

*“The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.”*



Funded by the  
Erasmus+ Programme  
of the European Union

## European Credit Transfer System at Medical University - Sofia The Common Language of Recognition

---

**Prof. Dr. Radoslav Girchev, MD, PhD, Dsc.**  
*Head of Department of Physiology at Medical Faculty &  
Head of International Integration & Project Funding Department*

**Dr. Savena Borisova, PhD**  
*Institutional Erasmus & ECTS Coordinator*

### Editorial Board

**Prof. Valentina Petkova, DSc, PhD, Mpharm., MPH.**  
*Vice Rector for Science and Accreditation &  
ECTS Coordinator of Faculty of Pharmacy;*

**Prof. Dr. Bozhidar Yordanov, PhD**  
*Vice Dean of International Integration & English Language Education &  
ECTS Coordinator of Faculty of Dental Medicine*

**Assoc. Prof. Dr. Nina Belova, MD, PhD**  
*ECTS Coordinator of Faculty of Medicine;*

**Prof. Antonya Yanakieva, PhD**  
*Head of Department of Health Technology Evaluation &  
ECTS Coordinator of Faculty of Public Health & Medical College “Jordanka Filaretova”*