ENGLISH PROGRAM BULLETIN FACULTY OF DENTISTRY

BULLETIN

UNIVERSITY OF DEBRECEN

ACADEMIC YEAR 2024/2025

FACULTY OF DENTISTRY

Coordinating Center for International Education

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CHAPTER 1 WELCOME FROM THE DEAN

It is my pleasure to greet the new members of the University of Debrecen, the students of the Faculty of Dentistry. I hope you will enjoy your stay in our country, in our town and at our University. Please keep in mind that education is based on a mutual trust and a very close partnership. On behalf of me and the whole staff I assure you that we will do our best to provide you all the latest theoretical and practical knowledge to make you a successful dentist. In return, you have to make every effort to study efficiently and demonstrate the highest quality clinical knowledge and expertise, ethical behaviour and respect towards your teachers, patients and fellow students during your training. The five years will give you graduate training programs that maximize your dental knowledge. This bulletin is to guide you through your five-year studies. It contains essential information about the educational programs, the course, content and description, the description of the general and special requirements for graduation at our University. However, we reserve the right of modification, eg. in case of the timetable or choosing the place of the lessons according to the current/latest rules and regulations and the decisions of the Senate of the University of Debrecen and the Faculty Council of the Faculty of Dentistry. We expect you to respect your lecturers, student mates, patients and always show an ethical behaviour worthy of a prospective doctor

Last but not least, I would like to draw your attention to the sport and leisure opportunities provided by the University of Debrecen, we hope that the years spent in the country's second largest city are going to give you beautiful memories.

I encourage you to read this booklet carefully, and become a unique and competent dentist of your country.

Best wishes: the Dean

CHAPTER 2 INTRODUCTION

The Faculty of Dentistry is part of the University of Debrecen and is located in the main campus, only 15 minutes from the city center of Debrecen. Debrecen is situated in the eastern part of the country. Hungary is a small, central European country with an area of 93.036 ksqm;. The River Danube divides the country into two: the western part is hilly and the eastern part is mostly flat. The capital is Budapest (1.837.000). The population of Hungary is 10.092.000. (For more information please visit: www.Hungary.hu) With the population of 250.000, this historic city, Debrecen, is the second largest in the country. It is a real university town with over 32.000 students. The history of higher education dates back as far as the sixteenth century, when the center of science, art and education, the Reformed College was established. This served as a base for the foundation of the University. The University was completed in 1932, in a unique campus form situated in a beautiful forest called Great Forest.(see more about the university and the city at www.debrecen.hu. and www.med.unideb.hu). History of the Faculty The Faculty of Dentistry is one of the youngest faculties at the University of Debrecen, however, dental education dates back as far as 1935. At that time it was integrated into the course of the General Medical training program. Though operating under unfavorable conditions, - there was no separate building available-, the School of Dentistry gained considerable reputation over the years both in Hungary and abroad. The first Dentistry students began studying in the academic year 1976-77. The increasing demand to supply North-East Hungary with dentists made it necessary to set up a self-contained dentist training program and a separate, modern 2000 sqm building was designated for this purpose. Completed in 1981, it provided suitable conditions for high-quality work with 40 dental units, a lecture hall, a library, a dental and a phantom lab. It became the second building dedicated entirely to Dentistry in the country. The school was subdivided into six units: restorative-, prosthetic-, pediatric dentistry, orthodontics and periodontology. Dental surgery (678 sqm) remained in the original building after the required reconstructions. The year 2000-2001 brought about important changes in the life of the Dental Institute: the increasing number of Hungarian students and the introduction of dental training for foreign students in English made extension necessary. In 2003 the Faculty of Dentistry came into being at the University of Debrecen. It is a very important result that the Dentistry program could transform into a faculty at all, since this was the second independent faculty of Dentistry ever established in Hungary, created 50 years after the one in Budapest. In the year 2004, after the Dental Institute became Faculty, a new 2-story, 2100 sqm building opened its door, with 32 dental units in 8 consulting rooms. The big lecture hall can host 100 people and there are three seminar rooms which can seat 50 students each. Parallel to the construction of the new building, reconstruction works took place in the former one. 40 old dental units were replaced and in the phantom lab 36 well-equipped working places were created. The Faculty offers not only undergraduate but postgraduate programs designed to produce specialist practitioners in six disciplines and also offers research training programs (PhD) to produce research scholars of international standing. Specialist postgraduate training is available in the discipline of: restorative and prosthetic dentistry, orthodontics, pediatric dentistry, periodontics, dento-alveolar oral surgery, and maxillofacial oral surgery. The Faculty is responsible for the continuous training of 700 dentists in the region and also attracts numerous applicants from all over the country. To provide equal rights to the disabled and handicapped patients and to maintain good oral health a new wing is designed for treating these special-need patients. The ever increasing number of Hungarian and foreign students made it necessary to extend the working area and facilities. These were the main reasons of the new construction and reconstruction, which started in the year of 2010. By the time of 2012 a brand new building with 40 dental units will a wait the students who would like to start their education, a new dento-alveolar and maxillofacial surgery will provide the latest technology for curing patents and

among them the disabled ones. In 2020 the Fantom laboratory has been renewed and equipped with 40 up to date fantom units and digital education aids. These developments assure the highest quality of education, research and treatment. The Faculty has established collaborative links with a number of universities located in Finland, England, Taiwan, Turkey, Sweden, Romania, and Ukraine.

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CHAPTER 7 FACULTY OF MEDICINE - DEPARTMENTS OF BASIC SCIENCES

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		Tibor Hajdú MD, Ph.D (anatomy dental students)
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Ms. Klaudia Balog M.D. Csaba Bánfi M.D. János Deák M.D. Gábor Ditrói M.D. Máté Farkas M.D. Tamás Felföldi M.D. Ms. Gabriella Herczeg M.D. Lóránt Illésy M.D. Ms. Eszter Káplár-Csulak M.D. Gergely Kóder M.D. Péter Kolozsi M.D. Dániel Mátyási M.D. Gábor Mudriczki M.D. Péter Ferenc Nagy M.D. Csaba Ötvös M.D. Ms. Orsolya Zsuzsanna Ping Zsolt Susán M.D. Csongor Váradi M.D. Attila Virga M.D. László Bene M.D. Gergő Beke M.D. Ms. Gyöngyi Farkasné Bernscherer M.D. Péter Gajdátsy M.D. Balázs Gergely M.D. Ms. Dorina Hajdú-Bodnár M.D. Dávid Hermann M.D. Gergő Kincses M.D. Péter Kondor M.D. Tamás Kuna M.D. Ms. Kitti Nagy M.D. Gergő Rácz M.D. Zoltán Szalai M.D. Tamás Dinya M.D.

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Professor Emeritus		Csaba Tóth M.D., Ph.D., D.Sc.
Associate Professor		Csaba Berczi M.D., Ph.D.
Assistant Professor		Antal Farkas M.D., Ph.D.
Assistant Lecturer		Gyula Drabik M.D.
		János Dócs M.D.
		Zoltán Kiss M.D.
		Tamás Somogyi M.D.
		Krisztián Szegedi M.D.
		Dániel Varga M.D.
Chief Physician		László Lőrincz M.D.
		Miklós Szűcs M.D. Ph.D.
Clinical Specialist		Mihály Murányi M.D.
		Péter Osváth M.D.
Clinical Assistant	Ms.	Alexandra Barkóczi M.D.
		András Domoszlai M.D.
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CHAPTER 9 OTHER DEPARTMENTS

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- Ms. Ildikó Gerő M.A.
- Ms. Mariann Gulyásné Szitás M.A.
- Ms. Judit Kovács, M.A.
- Ms. Mónika Krasznai M.A.
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Head of Department Lecturer

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Director Libraries	Ms.	Gyöngyi Karácsony M.Sc.
Associate Director responsible for User Insight and Communications		Leonárd Petró M.A.
Reference Services	Ms.	Edit Görögh M.Sc., Ph.D.
Education and Research Support Department	Ms.	Judit Éva Fazekas-Paragh M.Sc.

CHAPTER 10 UNIVERSITY CALENDAR

UNIVERSITY CALENDAR FOR DENTISTRY PROGRAM 2024/2025 ACADEMIC YEAR

CRASH COURSE OF HUNGARIAN LANGUAGE: August 26-September 6, 2024 OPENING CEREMONY: September 8, 2024

1st SEMESTER

Registration week: September 02, 2024-September 08, 2024

Year	Course	Examination Period
Basic Medicine Course I.	September 09 2024– December 13, 2024 (14 weeks)	December 16, 2024 – January 31, 2025 (7 weeks)
1st year Dentistry 2nd year Dentistry 3rd year Dentistry 4th year Dentistry 5th year Dentistry	September 09 2024– December 13, 2024 (14 weeks)	December 16, 2024 – January 31, 2025 (7 weeks)
Digital Dental Design Course	September 09, 2024 – December 13, 2024 (14 weeks)	December 16, 2024 – January 31, 2025 (7 weeks)

2nd SEMESTER

Registration week for I-IV year: February 03, 2025-February 09, 2025 Registration week for 5th year: January 27, 2025-February 02, 2025 Registration week for Digital dental design course: February 03, 2025-February 09, 2025

Year	Course	Examination Period
Basic Medicine Course	February 10, 2025– May 16, 2025 (14 weeks)	May 19, 2025 – July 04, 2025 (7 weeks)
Basic Medicine Course II.	January 06, 2025-June 13, 2025 (23 weeks)	June 16, 2025– July 04, 2025 (3 weeks)
1st year Dentistry 2nd year Dentistry 3rd year Dentistry 4th year Dentistry	February 10, 2025– May 16, 2025 (14 weeks)	May 19, 2025 – July 04, 2025 (7 weeks)
5th year Dentistry	February 03, 2025 – April 25, 2025 (12 weeks)	April 28, 2025 – June 06, 2025 (6 weeks)
Digital Dental Design Course	February 10, 2025– May 16, 2025 (14 weeks)	May 19, 2025 – July 04, 2025 (7 weeks)

Final year digital dental design students	February 10, 2025– May 16, 2025 (14 weeks)	May 19, 2025 – June 27, 2025 (6 weeks)
Written final exam		June 16, 2025

SUMMER PRACTICE

Year	Dates in 2025
1st-2nd year Dentistry : Dental assistant practice (4 weeks)	At the Faculty of Dentistry, Debrecen: July 7, 2025 – August 01, 2025 In other practice locations: July 07, 2025-August 15, 2025
3rd year Dentistry: Dental extraction practice (2 weeks)	At the Faculty of Dentistry, Debrecen: round 1: July 07, 2025 – July 18, 2025 round 2: July 21, 2025 – August 01, 2025 In other practice locations: July 07, 2025-August 15, 2025
4th year Dentistry: Complex dentistry practice (4 weeks)	At the Faculty of Dentistry, Debrecen: July 07, 2025 – August 01, 2025 In other practice locations: July 07, 2025-August 15, 2025

CHAPTER 11 GENERAL INFORMATION

The student handbook (bulletin) has been designed to help the students to find their way in educational matters. It lists all the courses, credit points, protocols, guidelines, and information. The faculty reserves the right to add or cancel courses, change the times or locations, revise course requirements and schedules.

The rules and regulations can be found in detailed form in the syllabus "Rules and regulations for English program students". Student enrolled at the University of Debrecen must accept the University rules and requirements.

The Faculty is committed to provide the best learning and working environment to all students without discrimination, harassment on the ground of sex, race, disability, religion and belief or national origin. The dental curriculum is special and unique because students perform treatments on patients before getting their doctoral diploma. For the patient safety students must be able to meet the following standards:

To treat patient successfully and safely the student must have sufficient motor skill to work with hand and electric instruments. The student must be able to perform palpitation, percussion, auscultation and other diagnostic procedures. The student must have reliable gross and fine muscular movements, senses of touch and vision. The student requires the capability to operate all the dental equipments, both high and low speed hand peaces.

The student must be able to take an accurate dental and medical history from the patient. The student must be able to analyze and interpret x-ray and other graphic images which are necessary for the proper diagnosis. Student must be able to perform a visual and tactile dental examination including the observation of the shape, color and abnormalities both extra and intra orally. The students must be able to discuss problems, treatment with the patients, gather and exchange information, give directions during treatment and must be able to give advice to the patients.

The student must be able to communicate in oral and in written form and must have the ability to write a patient chart.

Student must be able to speak, analyze, synthesize, and integrate and must be able to take oral and written examinations, too. A student must be able to tolerate intellectually and physically the workloads, and to function effectively under stress. The student must have positive personal qualities such as respect, understanding, and concern for others and also must perform a professional doctoral behavior.

The Faculty believes that only respect, courtesy and understanding can create and maintain an effective learning and working atmosphere. Interaction based on mutual respect enhances the educational possibilities. Dishonest, unethical, unprofessional behavior, cheating that interferes with teaching, administration or patient care is not tolerated by the Faculty.

For proper treatment, infection control and overall hygiene the students must achieve and consistently demonstrate acceptable level of general personal care standards and should dress professionally. A long white laboratory coat must be worn during practical classes. The white coat must be clean and ironed and must not be worn outside the clinical treatment areas. The name badge must be worn when undertaking clinical practical lessons. Budges must be worn in a prominent position where it is clearly visible. Caps, head gears should not be used during patient treatment. Hair should be clean, long-hair should be pinned or held back, so it won't disturb vision, or cause accident. Excessive use of makeup and perfume/aftershave must be avoided. Fingers and fingernails should be clean, trimmed; colored lacquer should not be used during patient treatment. Rings that may compromise clinical protective barriers should not be worn in clinics. Lockers are provided for the protection of students' personal belongings. These should not be kept in operation rooms or

laboratories. The Faculty however, cannot accept responsibility for loss or theft of property. The cleanliness of the preclinical laboratories is the responsibility of students. When a student completes his or her use of a support area, it should be left in acceptable condition for the next student's use. It is expected that student will exercise care when using school equipment. All equipment failure should be reported immediately. Students must always act in the best interest of the patient. Each student must exhibit professional courtesy toward faculty, supporting staff, fellow students, patients and their relatives.

All members of the faculty and administration are available to consult with students on personal and professional matters but only at given hours. Consulting hours can be found on the main, the departmental and the Dean's office information boards.

General description of graduate training

The education at the faculty of dentistry takes five year which is divided into 10 semesters. The duration of each semester is 15 weeks with the exception of the last semester, which lasts 12 weeks. An academic year consists of two semesters: the fall and spring semesters. No student can be admitted later than 10 days after opening of an academic semester. The requirement for participation through attendance is a critical part of education. The attendance policy is established by the course directory for each course and published in the Bulletin. Excessive absence may result in failing the course. Absence in access of 20% of the total hours in any dental course will result that the student cannot complete the semester. There is no possibility to compensate the missed practical lessons. The faculty uses the credit system accepted all over the world. The credit sum that the student must achieve by the end of the fifth year is 300 points, comprised of compulsory (80%), required elective (15%) and freely chosen subjects (5%). The students must take into consideration that precondition for the selection of one certain subject might be the successful completion of another. The credit system allows the student to have an individualized learning program. In order to maintain continuity in the curriculum, an absence from the program should not extend more than a week. To get the credit points the student must take required final examination of the course. An absence from an examination will be counted as a grade of 1 (fail).

To get the D.D. S diploma the students must complete the prescribed curriculum, pass the necessary examinations, and receive the required 300 credit points, write and defend their thesis and have a successful State Dental Examination part I (written) and Part II (oral). Failure to take the written examination means that part II (oral) can not be taken until the student passes the part I.

Courses are categorized into 4 modules (basic, general and preclinical dentistry and general medical and clinical dentistry) as defined by the qualification requirements. Students must complete a certain percentage of the total credit number in each module as prescribed by the Rules and Regulations.

Students must earn 285 credits out of the 300 by completing the compulsory, required elective subjects.

Subjects of the basic module	General and dental preclinical modules:
Biophysics	Basic dentistry modules:
Biostatistics	Odontology
Medical Chemistry	Preventive Dentistry I.
Oral Anatomy, Histology, Embryology I- II.	Introduction to prosthodontics I-VI.
Cell Biology	Restorative Dentistry Propedeutics I-II (Cariology, Endodontics)
First Aid and Reanimation	Oral Biology
Biochemistry I-II.	Introduction to Dental Radiology
Dental Physiology I-II.	Oral Surgery Propedeutics
	Dosimetry, Radiation Health Effects
	Periodontology propedeutics I-II
	Pediatric Dentistry Propedeutics
	Odontotechnology I-II.
	Basics of Behavioural Sciences
	Psychology
	General Pathology, Organ and Oral Pathology
	Clinical Biochemistry I-II.
	Immunology
	Basic Surgical Techniques
	Bioethics
	Dental Microbiology
	Surgery

General clinical modules:	Clinical dentistry modules:
Internal medicine I-II	Pediatric Dentistry I-II.
Dermatology	Periodontology I-III.
Otolaryngology	Prosthetic Dentistry I- IV.
Dental Pharmacology I-II.	Oral Surgery I-IV
Preventive Medicine	Restorative Dentistry I- IV.
Emergency Medicine	Orthodontics I-II.
Pediatrics	Oral Medicine
Neurology	Pediatric Dentistry Propedeutics
Psyhiatry	Complex Dentistry
Surgery	
Forensic Medicine	

DEGREE REQUIREMENTS

- 1. Completion of the Physical Education courses as prescribed by the Curriculum.
- 2. Completion of the summer practices.
- 3. Final comprehensive exam of General Pathology, Organ and Oral Pathology and one of the 2 special Pathology required elective courses for dental students.
- 4. Successful thesis defence.
- 5. Successful completion of Medical Hungarian exam.

Compulsory final exams for degree	Important exams for qualification of degree
Oral Anatomy, Histology, Embryology III. Lecture	Biophysics Lecture
Biochemistry II.	Cell Biology
Dental Physiology II. Lecture	Dental Microbiology
Pediatric Dentistry II.	Clinical Biochemistry II.
Orthodontics II.	Preventive Medicine
Restorative Dentistry IV. (Cariology and Endodontics)	Emergency Medicine
Periodontology III.	Otolaryngology

GENERAL INFORMATION

Prosthetic Dentistry IV.	Medical Hungarian II.
Oral Surgery IV.	
Organ and Oral Pathology	
Dental Pharmacology II.	
Medical Chemistry II. Lecture	
Internal Medicine II.	
Introduction to Prosthodontics IV.	

CHAPTER 12 ACADEMIC PROGRAM FOR THE BASIC MEDICINE COURSE

Basic Medicine Course (BMC, Premedical Studies) Duration of studios: 1 year (2 semesters)

Duration of studies: 1 year (2 semesters)

The one-year premedical Basic Medicine Course is recommended to those students who do not have sufficient knowledge in Biology, Physics and Chemistry from high school. The requirements in these premedical science subjects are rigorous, thus it is recommended that students who need a period of preparation prior to beginning the General Medicine, Dentistry or Pharmacy Program join the Basic Medicine Course. Students successfully completing the course are directly admitted to their chosen program. In addition to the Basic Medicine Course starting each September, our University launches an Intensive BMC in January as well.

Class Behavior

Students must not use cell phones to talk or text during class. Cell phones must be switched off or kept in silence mode during class. In seminars, students will be expected to participate in seminar discussions. Students are encouraged to ask questions related to the topic of the lectures discussed, and participate in solving problems related to the topic of the seminar. Some professors will ask for students to volunteer information, but some professors call on students randomly. It is, thus, a good idea to come to class prepared so as not to be embarrassed in front of the class. Students should not disrupt the class by talking to each other. If one continues to disrupt the class, the student may be asked to leave. The usage of electronic devices, textbooks and any form of interaction between students during the tests is strictly forbidden. Electronic devices (cell phones, tablets, dictionaries, etc.), except for approved simple calculators, must not be within the reach (in pocket, in the desk, etc.) of students during tests. It is the students' responsibility to stow these items before the test begins without specific warning by the supervising teachers. Violation of these above mentioned regulations results in an immediate and unconditional dismissal from the program.

Requirements

The 2-semester course consists of lectures and seminars. Attending lectures is strongly recommended, attendance of seminars is compulsory and recorded. Everyone must attend the seminars with the group designated by the Registrar's Office.

Absence can significantly affect your understanding and can have serious implications of progression in your studies. One might have a maximum of three seminar absences per semester to have the opportunity to get exemption. Students missing 4 seminars per semester cannot be exempted from the End of Semester Examination (ESE) or Final Examination (FE), regardless of their score reached on the Self Control Tests. Students missing 5 or more seminars per semester are dismissed from the course. Missed seminars cannot be made up, unless one obtains prior permission to be absent.

The knowledge of students will be tested 4 times during each semester using a written test system by **Self Control Tests (SCT).** The first semester is ended with an **End of Semester Examination** (ESE) covering the topics of all lectures and seminars of the first semester. Three dates will be set for the ESE during the winter examination period. Unsuccessful students may repeat the ESE twice (B and C chances). Students repeating the course must successfully pass the first semester either with exemption or at least with a score of 55% of ESE, otherwise their studies will be terminated. The ESE is not compulsory for non-repeater students and even who fail may continue their study in the second semester, however, they lose their chance to receive bonus points. Exam exemptions and bonus point policy are to improve the students' performance on SCTs and

give them a chance to get exemption of the FE (described below) even with SCT scores lower than 40% in the first semester. Exact details of the exemption of ESE:

-one's average score of the three best first semester SCTs is at least 55%, AND

-(s)he successfully completed all the SCTs at least with 30% score, AND

-(s)he has a maximum of 3 seminar absences for each subject in the first semester.

The course ends with a **Final Exam (FE)** covering the whole material of the first and second semesters. A minimum of four FE dates will be set during the summer examination period. Unsuccessful students may repeat the FE twice (B and C chances, and the latter ends up with an oral examination part). Exemption from FE is offered for students who achieve excellent academic performance during their studies on the following base:

-the average score of the six best SCTs (out of 8) of the two semesters is at least 55%, AND -passed all the SCTs with at least 30%, AND

-(s)he has a maximum of 3 seminar absences for each subject per semester.

OR

-the average of the ESE score taken 3 times plus the scores of the 3 best SCTs in the 2nd semester is at least 55%, AND

-passed all the SCTs with at least 30%, AND

-(s)he has a maximum of 3 seminar absences for a given subject per semester.

Bonus points will be added to the FE score (in %) of eligible students and calculated as follows:

The average of the ESE score three times and the best 3	Bonus points
2 nd semester SCTs	(%)
OR the average of the best 6 SCTs	
40.00-43.99	2
44.00-47.99	4
48.00-51.99	6
52.00-55.99	8
56.00-59.99	10

Students who could not meet the above described conditions for exemption during the two semesters must sit for the FE from the whole material of the first and second semesters. The participation shall be preceded by ID confirmation (i.e. student's card, passport or driving license) before all forms of tests.

Self Control Tests, End of Semester Exams, and Final Exams will be assessed as follows.

Percentage (%)	Mark
0 – 54.99:	fail (1)
55.00 - 59.99:	pass (2)
60.00 - 74.99:	satisfactory (3)
75.00 - 84.99:	good (4)
85.00 - 100:	excellent (5)

Absence for any reason counts as 0%.

Course coordinator: Dr. Beáta Lontay, Department of Medical Chemistry

Subject: INTRODUCTION TO BIOLOGY I.

Year, Semester: Basic Medicine Course, 1st Number of teaching hours: Lecture: **56** Seminar: **28**

1st week:

Lecture: The chemistry of life 1 Proteins, carbohydrates and lipids 1. Proteins, carbohydrates and lipids 2. Proteins, carbohydrates and lipids 3.

2nd week:

Lecture: Proteins, carbohydrates and lipids 4. Nucleic acids Cells: the working units of life 1.Prokaryotes* Cells: the working units of life 2.

3rd week:

Lecture: Cells: the working units of life 3. Cells: the working units of life 4. Cells: the working units of life 5. Cell membranes 1.

4th week:

Lecture: Cell membranes 2. Cell membranes 3. Cell membranes 4. Energy, enzymes and metabolism 1.

5th week:

Lecture:

Energy, enzymes and metabolism 2. Energy, enzymes and metabolism 3. Energy, enzymes and metabolism 4. Pathways that harvest chemical energy 1.

6th week:

Lecture:

Pathways that harvest chemical energy 2 Pathways that harvest chemical energy 3. Pathways that harvest chemical energy 4. Pathways that harvest chemical energy 5.

7th week:

Lecture:

Cellular signaling and communication 1. Cellular signaling and communication 2. Cell cycle and cell division 1. Cell cycle and cell division 2.

8th week:

Lecture:

Cell cycle and cell division 2. Cell cycle and cell division 2. Inheritance, genes and chromosomes 1. Inheritance, genes and chromosomes 2.

9th week:

Lecture: Inheritance, genes and chromosomes 3. Inheritance, genes and chromosomes 4. Inheritance, genes and chromosomes 5. Inheritance, genes and chromosomes 6.

10th week:

Lecture:

Inheritance, genes and chromosomes /Pop. Gen 7 DNA and its role in heredity 1. DNA and its role in heredity 2. DNA and its role in heredity 3.

11th week:

Lecture:

From DNA to protein: gene expression 1. From DNA to protein: gene expression 2. From DNA to protein: gene expression 3. From DNA to protein: gene expression 4.

12th week:

Lecture:

From DNA to protein: gene expression 4. From DNA to protein: gene expression 5. Gene mutation and molecular medicine 1. Gene mutation and molecular medicine 2.

13 th week:	14 th week:
Lecture:	Lecture:
Gene mutation and molecular medicine 3.	Regulation of gene expression 3.(Eukaryotic reg.)
Gene mutation and molecular medicine 4.	Regulation of gene expression 4. (Eukaryotic
Regulation of gene expression 1. (Prokaryotic	reg.)
reg.)	The mechanism of evolution 1.
Regulation of gene expression 2. (Eukaryotic	The mechanism of evolution 2.
reg.)	

Contact person: Dr. András Penyige, Associate Professor, Department of Human Genetics Recommended book: Sadava-Hillis-Heller-Berenbaum: Life, Sinauer-Macmillam

Subject: INTRODUCTION TO BIOLOGY II.

Year, Semester: Basic Medicine Course, 2nd Number of teaching hours: Lecture: **42** Seminar: **28**

1 st week:	Nutrition, Digestion and Absorption 1.
Lecture:	
Tissues, Organs and Organ Systems 1.	6 th week:
Tissues, Organs and Organ Systems 2.	Lecture:
Tissues, Organs and Organ Systems 3.	Nutrition, Digestion and Absorption 2.
	Nutrition, Digestion and Absorption 3.
2 nd week:	Nutrition, Digestion and Absorption 4.
Lecture:	
Homeostasis and cellular physiology.	7 th week:
Temperature Regulation.	Lecture:
Blood, a fluid tissue 1.	Respiratory system 1.
	Respiratory system 2.
3 rd week:	Salt and Water Balance and Nitrogen Excretion 1.
Lecture:	
Blood, a fluid tissue 2.	8 th week:
Circulation1.	Lecture:
Circulation 2.	Salt and Water Balance and Nitrogen Excretion 2.
	Hormones 1.
4 th week:	Hormones 2.
Lecture:	
Circulation 3.	9 th week:
Circulation 4. The lymphatic system.	Lecture:
Natural Defenses against Disease 1.	Hormones 3.
	Hormones 4.
5 th week:	Hormones 5.
Lecture:	
Natural Defenses against Disease 2.	10 th week:
Natural Defenses against Disease 3.	Lecture:

CHAPTER 12

Neurons and Nervous system 1.	Musculoskeletal Systems 2.
Neurons and Nervous system 2.	
Neurons and Nervous system 3.	13 th week:
	Lecture:
11 th week:	Musculoskeletal Systems 3.
Lecture:	Reproduction and Development 1.
Neurons and Nervous system 4.	Reproduction and Development 2.
Neurons and Nervous system 5.	
Sensory systems 1.	14 th week:
	Lecture:
12 th week:	Reproduction and Development 3.
Lecture:	Reproduction and Development 4.
Sensory systems 2.	
Musculoskeletal Systems 1.	

Contact person: Dr. Norbert Szentandrássy, Department of Physiology Recommended book: Sadava, Hills, Heller, Berenbaum: Life (10th edition)

Subject: INTRODUCTION TO PHYSICS I.

Year, Semester: Basic Medicine Course, 1st Number of teaching hours: Lecture:56 Seminar: 28

1 st I	
l st week:	The laws of motion. Newton's First, Second and
Lecture:	Third Law.
Introduction, requirements. Standards of length,	Applications of Newton's Laws. Forces of
mass, time. Significant figures. Prefixes.	friction.
Conversion of units. Coordinate systems,	
trigonometry.	5 th week:
Radians, vectors and scalars, geometry, equation	Lecture:
solving, problem solving, graphing. Functions,	Energy. Work. Kinetic energy and the work-
calculator usage	energy theorem. Gravitational potential energy.
e	Spring potential energy. System and energy
2 nd week:	conservation. Power. Work done by varying
Lecture:	forces.
Motion in one dimension, displacement, velocity,	
acceleration, motion diagrams.	6 th week:
Freely falling objects.	Lecture:
	Momentum and impulse. Conservation of
3 rd week:	momentum. Collisions. Elastic and inelastic
Lecture:	collisions.
Vectors and their properties. Components of	Angular speed and angular acceleration.
vectors Displacement velocity and acceleration	Rotational motion under constant angular
in two dimensions	acceleration
Motion in two dimensions Projectile motion	
	7 th week
Ath week.	Lecture
I ecture:	Centrinetal acceleration Newtonian gravitation
	Contriputar accontation. Newtoinan gravitation.
80	

Kepler's laws.	energy.
Torque and the two conditions for equilibrium.	
The center of gravity.	11 th week:
	Lecture:
8 th week:	Specific heat. Calorimetry. Latent heat and phase
Lecture:	change.
Rotational kinetic energy. Angular momentum.	The first law of thermodynamics. The second law
States of matter. Deformation of solids. The	of thermodynamics. Entropy. Refrigerators and
Youngs's, shear and bulk modulus. Density and	heat pumps.
pressure. Variation of pressure with depth.	
Pressure measurements.	12 th week:
	Lecture:
9 th week:	Elastic potential energy. Hook's law. Simple
Lecture:	harmonic motion. Motion of a pendulum.
Buoyant forces and Archimedes's principle.	Waves. Frequency, amplitude and wavelength.
Fluids in motion.	Interference of waves. Reflection of waves
HP equation, Circulation, blood pressure	
measurement, transport phenomena, diffusion,	13 th week:
osmosis, calculations with cont. eq + HP eq.	Lecture:
	Sound. Energy and intensity of sound waves.
10 th week:	Doppler effect
Lecture:	Ultrasound. Shock waves, standing waves. The
Temperature and the zeroth law of	ear and the principles of hearing.
thermodynamics. Thermometers and temperature	
scales. Thermal expansion of solids and fluids.	14 th week:
Macroscopic description of an ideal gas. The	Lecture:
kinetic theory of gases.	Interactive seminar and preparation for the ESE.
Energy in thermal processes. Heat and internal	

Contact person: Dr. Zoltán Varga, Associate Professor, Department of Biophysics Recommended book: Serway-Vuille: College Physics, Brooks/Cole

Subject: INTRODUCTION TO MEDICAL CHEMISTRY I.

Year, Semester: Basic Medicine Course, 1st Number of teaching hours: Lecture: **56** Seminar: **28**

1 st week:	arithmetic
Lecture:	Mixtures and chemical compounds. Chemical
Introduction to Chemistry. Symbols of the	formulas. Naming chemical compounds.
elements. Physical and chemical properties	
The SI system of measurement	3 rd week:
	Lecture:
2 nd week:	Atomic, molecular and molar mass relationships.
Lecture:	Percent composition and empirical/molecular
The atomic theory. Structure of the atom, nuclear	formulas. Chemical equations, stoichiometry
-	

CHAPTER 12

4 th week: Lecture: Summary of general chemistry 1	The gaseous state Liquid and solid state, phase changes. The chemistry of water
Test #1	
	10 th week:
5 th week:	Lecture:
Lecture:	Solutions. Electrolytes and nonelectrolytes
The electromagnetic spectrum. Atomic spectra. The Bohr model of hydrogen atom. The quantum	Chemical equilibrium
mechanical model of the atom.	11 th week:
Electron configurations and the periodic table.	Lecture:
Classification of the elements	Summary of general chemistry 3
	Test #3
6 th week:	
Lecture:	12 th week:
Periodic properties	Lecture:
Chemical bonds: metallic, ionic, and covalent	Acids and bases 1
bond. Electron-dot structures	Acids and bases 2
	1.24
/ th week:	1 ³ th week:
Lecture:	Lecture:
VSEPR and valence bond theory	Thermochemistry: internal energy and state
Intermolecular forces	functions. Enthalpy. Hess's law
oth	Redox reactions. Activity series of the elements.
8 th week:	Galvanic cells
Lecture:	1 4th 1
Summary of general chemistry 2	14 th week:
Test #2	Lecture:
oth	Summary of general chemistry 4
9 th week:	Test #4
Lecture:	

Subject: INTRODUCTION TO BIOPHYSICS II. Year, Semester: Basic Medicine Course, 2nd The parallel plate capacitor. Combinations of Number of teaching hours: capacitors. Energy stored in capacitors. Lecture: 56 Capacitors with dielectric. Seminar: 28 Seminar: Material related to lectures 1-8. 1st week: 3rd week: Lecture: 1-4. Properties of electric charges. Lecture: 9-12. Electric current. Current and Insulators and conductors. Coulomb's law. voltage measurements in circuits. Resistance and Electric field. Electric field lines. Electric flux Ohm's law. Resistivity, temperature variation of and Gauss's law. resistance. Semiconductors and superconductors. **Seminar:** Material related to lectures 1-4. Electrical activity of the heart. Defibrillators.

Seminar: Material related to lectures 5-12.

Lecture: 5-8. Electrical energy and capacitance. 88

2nd week:

 4th week: Lecture: 13-16. Direct current circuits. Resisorts in parallel and series. Kirchhoff's rules and complex DC circuits. RC circuits. Conduction of electrical signals by neurons. Seminar: Material related to lectures 9-16. 	 9th week: Lecture: 33-36. Lenses and mirrors. Flat mirrors. Images formed by spherical mirrors. Thin lenses. Images formed by lenses. Lens aberrations. Seminar: Material related to lectures 29-32.
 5th week: Lecture: 17-20. Magnetism. Megnetic field. Earth's magnetic field. Magnetic force on current carrying conductors. Toque on current loop and electric motors. Magnetic field of a long straight wire and Ampere's law. Magnetic field between two parallel conductors. Magnetic field of loops and solenoids. Seminar: Material related to lectures 13-16. 6th week: Lecture: 21-24. Induced emf and magnetic flux. Faraday's law of induction. Motional emf. Lenz's law. Generators. Self-inductance RL circuits. 	 10th week: Lecture: 37-40. Wave optics. Conditions for interference, polarization of light. Diffraction. The camera, the simple magnifier, the compound microscope, the telescpoe and the eye. Seminar: Material related to lectures 33-36. 11th week: Lecture: 41-44. Quantum physics. Blackbody radiation. Photoelectric effect. Particle theory of light. The production and attenuation of X-ray. Characteristic X-ray. Seminar: Material related to lectures 37-40.
Seminar: Material related to lectures 17-20. 7 th week: Lecture: 25-28. Alternating current. Resistors, capacitors and inductors in AC circuits. The transformer. Properties of electromagnetic waves. The spectrum of electromagnetic waves. Seminar: Material related to lectures 21-24.	 12th week: Lecture: 45-48. Atomic physics. Early model of the atom. Quantum mechanics and the hydrogen atom. The spin magnetic quantum numbers. Lasers and holography. Seminar: Material related to lectures 41-48. 13th week:
8 th week: Lecture: 29-32. The nature of light. Reflection, refraction and dispersion. Prisms. The rainbow. Huygen's principle. Total internal reflection and its medical applications. Seminar: Material related to lectures 25-28.	 Lecture: 49-52. Some properties of the nuclei. Binding energy. Radioactivity, the decay processes. Medical appliacation of radioactivity. Nuclear reactions. Nuclear fission and fusion. Positron and other antiparticles. Seminar: Material related to lectures 49-52. 14th week: Lecture: Preparation for the final exam.

Subject: INTRODUCTION TO MEDICAL CHEMISTRY II.

Year, Semester: Basic Medicine Course, 2nd Number of teaching hours: Lecture: **56** Seminar: **28**

1 st week:	Alcohols and phenols Ethers, thioethers
The main-group elements s- n- d-block metals	Ethers, unocuters.
Nonmetals: hydrogen halogens and noble gases	Oth week:
romneuns. ny drogen, narogens und neore guses	Lecture:
2 nd week:	Organic sulfur compounds
Lecture:	Aldehvdes, ketones and guinones
Nonmetals: oxygen and sulfur	
Nonmetals: nitrogen, phosphorus and carbon	10 th week:
	Lecture:
3 rd week:	Nitrogen containing organic compounds:
Lecture:	aliphatic amines
Test #5	Nitrogen containing organic compounds:
Covalent bonding in organic compounds.	heterocyclic nitrogen compounds. Amines of
Classification of organic compounds	biological importance
4 th week:	11 th week:
Lecture:	Lecture:
Alkanes. Nomenclature and isomerism of alkanes	Summary of organic chemistry 2
Reactions of alkanes. Cycloalkanes	Test #7
5 th week:	12 th week:
Lecture:	Lecture:
Unsaturated hydrocarbons	Carboxylic acids
Aromatic compound: structure and properties	Substituted carboxylic acids. Carboxylic acid
	derivatives: esters and amides
6 th week:	
Lecture:	13 th week:
Heteroaromatic compounds. Reactions of	Lecture:
benzene and its derivatives	Carboxylic acid derivatives: halides and
Organic halogen compounds	anhydrides; salts and detergents
	Stereochemistry
7 th week:	
Lecture:	14 th week:
Summary of organic chemistry 1	Lecture:
Test #6	Summary of organic chemistry 3 Test #8
8 th week:	
Lecture:	

Contact person: Dr. Endre Kókai, Department of Medical Chemistry

Recommended books: McMurry, Fay: Chemistry (7th edition), Erdődi, Csortos: Organic chemistry for premedical students (2010)

Subject: HUNGARIAN LANGUAGE FOR BMC STUDENTS

Year, Semester: Basic Medicine Course 2nd Number of teaching hours: Practical: **36**

1st week:	7th week:
Practical: 1. lecke, 2. lecke I. rész	Practical: 8. lecke
2nd week:	8th week:
Practical: 2. lecke II. rész	Practical: 9. lecke
3rd week:	9th week:
Practical: 3. lecke	Practical: 10. lecke
4th week:	10th week:
Practical: 4. lecke, 5. lecke I. rész	Practical: 11. lecke, 12. lecke
5th week:	11th week:
Practical: 5. lecke II. rész, 6. lecke I. rész	Practical: 13. lecke
6th week:	12th week:
Practical: 6. lecke II. rész, 7. lecke	Practical: 14. lecke (Összefoglalás) + end term
(Összefoglaló) + midterm test	test
Self Control Test	Oral exam

Reading materials: Gerő Ildikó-Kovács Judit: Színesen magyarul. 2017.

CHAPTER 13 ACADEMIC PROGRAM FOR THE SHORT BASIC MEDICINE COURSE

Intensive Basic Medicine Course (Intensive BMC, Premedical Studies) Duration of studies: 1 semester

The six-month intensive premedical Basic Medicine Course is recommended to those students who do not have thorough knowledge in Biology, Physics and Chemistry from high school. The requirements of these condensed premedical science subjects are very rigorous, thus preparation prior to the beginning the General Medicine, Dentistry or Pharmacy Program is recommended. Students successfully completing the course are directly admitted to their chosen program. The Intensive Basic Medicine Course starts in January.

Class Behavior

Students should not use cell phones to talk or text during class. Cell phones must be switched off or kept in silence mode during class. In seminars, students will be expected to participate in seminar discussions. Students are encouraged to ask questions related to the topic of the lectures discussed, and participate in solving problems related to the topic of the seminar. Some professors will ask for students to volunteer information, but some professors call on students randomly. It is, thus, a good idea to come to class prepared so as not to be embarrassed in front of the class. Students should not disrupt the class by talking to each other. If one continues to disrupt the class, the student may be asked to leave. The usage of electronic devices, textbooks and any form of interaction between students during the tests is strictly forbidden. Electronic devices (cell phones, tablets, dictionaries, etc.) of students during tests. It is the students' responsibility to stow these items before the test begins without specific warning by the supervising teachers. Violation of these above mentioned regulations results in an immediate and unconditional dismissal from the program.

Requirements

The course consists of lectures and seminars. Attending lectures is strongly recommended, attendance of seminars is compulsory and recorded. Everyone must attend the seminars with the group designated by the Registrar's Office.

Absence can significantly affect your understanding and can have serious implications for progression in your studies. One might have a maximum of six seminar absences to have the opportunity to get exemption. Students missing 7-8 seminars cannot be exempted from the Final Examination (FE), regardless of their score reached on the Self Control Tests. Students omitting 9 or more seminars are dismissed from the course. Missed seminars cannot be made up unless one obtains prior permission to be absent.

The knowledge of the students will be tested 6 times during the entire course using a written test system by **Self Control Tests (SCT).** The course ends with a **Final Exam (FE)** from the whole material of the course and a minimum of four FE dates will be set during the summer examination period. Unsuccessful students may repeat the FE twice (B and C chances, and the latter ends up with an oral examination part). Exam exemption and bonus point policy are used to improve the students' performance on SCTs. Exact details of these policies will be described below.

Exemption from FE is offered for students who achieve excellent academic performance during their studies under the following circumstances:

-the average score of the five best SCTs (out of 6) is at least 55%, AND -passed all the SCTs with at least 30%, AND

-(s)he has a maximum of 6 seminar absences for a given subject.

Bonus points will be added to the FE score of eligible students and calculated as follows:

The the average of the best 6	Bonus points (%)
SCTs	
40.00-43.99	2
44.00-47.99	4
48.00-51.99	6
52.00-55.99	8
56.00-59.99	10

Students who could not meet the above described conditions for exemption must sit for the FE from the whole material of the course.

The participation shall be preceded by ID confirmation (i.e. student's card, passport or driving license) before all forms of tests. Self Control Tests, End of Semester Exams, and Final Exams will be assessed as follows.

Mark
fail (1)
pass (2)
satisfactory (3)
good (4)
excellent (5)

Absence for any reason counts as 0%.

Course coordinator: Dr. Beáta Lontay, Department of Medical Chemistry

Subject: INTRODUCTION TO BIOLOGY

Year, Semester: Intensive Basic Medicine Course Number of teaching hours: Lecture: **92** Seminar: **92**

1 st week: Lecture: Small molecules and the chemistry of life 1. Small molecules and the chemistry of life 2. Proteins, carbohydrates and lipids 1. Proteins, carbohydrates and lipids 2.	3 rd week: Lecture: Cells: the working units of life 3. Cells: the working units of life 4. Bacterial cell structure Cell membranes 1.
2 nd week:	4 th week:
Lecture: Proteins, carbohydrates and lipids 3.	Lecture: Cell membranes 2.
Nucleic acids and the origin of life.	Cell membranes 3.
Cells: the working units of life 1.	Energy, enzymes and metabolism 1.
Cells: the working units of life 2.	Energy, enzymes and metabolism 2.

5 th week: Lecture: Pathways that harvest chemical energy	The cellular signaling and communication 2. The mechanism of evolution 1. The mechanism of evolution 2.				
Pathways that harvest chemical energy 2. Pathways that harvest chemical energy 3. The cell cycle and cell division 1.	13 th week: Lecture: Tissues, organs and organ systems 1-4.				
6 th week:	14 th week:				
Lecture: The cell cycle and cell division 2.	Lecture: Homeostasis and cellular physiology.				
The cell cycle and cell division 3.	Temperature Regulation.				
The cell cycle and cell division 4.	Blood, a fluid tissue 1-2.				
innernance, genes and chromosomes 1.	15th week.				
7 th week:	Lecture: Circulation 1-3 Lymphatic system				
Lecture: Inheritance, genes and chromosomes 2.	Dectare: Chediation 1 5. Dyniphate system.				
Inheritance, genes and chromosomes 3.	16 th week:				
Inheritance, genes and chromosomes 4.	Lecture: Self control test.				
Inheritance, genes and chromosomes 5.	Immunology: gene expression and natural				
oth	defenses 1.				
8 th week: Lasture: DNA and its role in heredity 1	Immunology: gene expression and natural				
DNA and its role in heredity 2	Nutrition Digestion and Absorption 1				
DNA and its role in heredity 3.					
DNA and its role in heredity 4.	17 th week:				
_	Lecture: Nutrition, Digestion and Absorption 2.				
9 th week:	Energy balance, vitamins and minerals.				
Lecture: From DNA to protein: gene expression	Respiratory system 1-2.				
1. From DNA to protein: gene expression 2	1 oth 1				
From DNA to protein: gene expression 2.	18 week: Lacture: Salt and Water Balance Nitrogen				
From DNA to protein: gene expression 4.	Excretion 1-2.				
	Hormones 1-2.				
10 th week:					
Lecture: Gene mutation and molecular medicine	19 th week:				
1. Consemutation and molecular modicine 2	Lecture: Hormones 3-4.				
Gene mutation and molecular medicine 3	Self Control Test				
Gene mutation and molecular medicine 4.	iventions and ivervous system 1.				
	20 th week:				
11 th week:	Lecture: Neurons and Nervous system 2-5.				
Lecture: Regulation of gene expression 1.					
Regulation of gene expression 2.	21 st week:				
Regulation of gene expression 3.	Lecture: Sensory systems 1-2.				
Regulation of gene expression 4.	Effectors: Musculoskeletal Systems 1-2.				
12 th week:	22nd week				
Lecture: The cellular signaling and	Lecture: Musculoskeletal Systems 3				
communication 1.	Reproduction and Development 1-2.				
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Reproduction and Development 3-4.

23rd week: Lecture: Self Control Test

Academic advisors: Dr. András Penyige, Department of Human Genetics Dr. Norbert Szentandrássy, Department of Physiology Recommended book: Sadava, Hills, Heller, Berenbaum: Life (10th edition)

Subject: INTRODUCTION TO BIOPHYSICS

Year, Semester: Intensive Basic Medicine Course Number of teaching hours: Lecture: 92 Seminar: 138

1 st week:	6 th week:
Lecture 1-2: Introduction to modern physics.	Lecture 11-12: Angular speed and angular
Standard of lengths, mass, time. Conversion of	acceleration. Rotational motion under constant
units. Useful mathematics. Trigonometry. Motion	angular acceleration. Centripetal acceleration.
in one dimension, displacement, velocity,	Newtonian gravitation. Kepler's laws.
acceleration, motion diagrams.	
	7 th week:
2 nd week:	Lecture 13-14: Torque and the two conditions
Lecture 3-4: Freely falling objects. Vectors and	for equilibrium. The center of gravity. Rotational
their properties. Components of vectors.	kinetic energy. Angular momentum.
Displacement, velocity and acceleration in two	
dimensions. Motion in two dimensions. Relative	8 th week:
velocity.	Lecture 15-16: States of matter. Deformation of
	solids. The Youngs's, shear and bulk modulus.
3 rd week:	Density and pressure. Variation of pressure with
Lecture 5-6: The laws of motion. Newton's First,	depth. Pressure measurements. Buoyant forces
Second and Third Law. Application of Newton's	and Archimedes's principle.
Laws. Forces of friction.	o.4
<i>44</i> • •	9 th week:
4 th week:	Lecture 17-18: Temperature and the zeroth law
Lecture 7-8: Kinetic energy and the work-energy	of thermodynamics. Thermometers and
theorem. Gravitational potential energy. Spring	temperature scales. Thermal expansion of solids
potential energy. System and energy	and fluids. Macroscopic description of an ideal
conservation. Power. Work done by varying	gas. The kinetic theory of gases.
torces.	1.046
C the l	10 th week:
5 th week:	Lecture 19-20: Energy in thermal processes.
Lecture 9-10: Momentum and Impulse.	Heat and internal energy. Specific neat.
Conservation of momentum. Collisions. Elastic	Calorimetry. Latent heat and phase change. The
and metasuc conisions.	inst law of thermodynamics.

11 th week: Lecture 21-22: The second law of thermodynamics. Entropy. Refrigerators and heat pumps. Elastic potential energy. Hook's law. Simple harmonic motion. Motion of a pendulum.	Earth's magnetic field. Magnetic force on current carrying conductors. Torque on a current loop and electric motors. Magnetic field of a long straight wire and Ampere's law. Magnetic field between two parallel conductors. Magnetic field of loops and solenoids.				
12 th week: Lecture 23-24: Waves. Frequency, amplitude and wavelength. Interference of waves. Reflection of waves. Sound. Energy and intensity of sound waves. Shock waves, standing waves, standing waves. Doppler effect. The ear and the principles of hearing.	 18th week: Lecture 36-37: Induced emf and magnetic flux. Faraday's law of induction. Motional emf. Lenz's law. Generators. Self-inductance RL circuits. 19th week: 				
13 th week: Lecture 26-27: Properties of electric charges. Insulators and conductors. Coulomb's law. Electric field. Electric field lines. Electric flux and Gauss's law.	Lecture 38-39: Alternating current. Resistors, capacitors and inductors in AC circuits. The transformer. Properties of electromagnetic waves. The spectrum of electromagnetic waves. 20 th week:				
14 th week: Lecture 28-29: Electrical energy and capacitance. The parallel plate capacitor. Combinations of capacitors. Energy stored in capacitars. Capacitors with dialocatric	Lecture 40-41: The nature of light. Reflection, refraction and dispersion. Prisms. The rainbow. Huygen's principle. Total internal reflection and its medical applications.				
15 th week: Lecture 30-31: Electric current. Current and voltage measurements in circuits. Resistance and Ohm's law. Resistivity, temperature variation of resistance. Semiconductors and superconductors. Electrical activity of the heart. Defibrillators.	Lecture 42-43: Lenses and mirrors. Flat mirrors. Images formed by spherical mirrors. Thin lenses. Images formed by lenses. Lens aberrations. Wave optics. Conditions for interference, polarization of light. Diffraction. The camera, the simple magnifier, the compound microscope, the telescope and the eye.				
16 th week: Lecture 32-33: Direct current circuits. Resistors in parallel and series. Kirchhoff's rules and complex DC circuits. RC circuits. Conduction of electrical signals by neurons.	23 rd week Lecture 44-45: Quantum physics. Blackbody radiation, photoelectric effect, generation of X- ray. Some properties of the nuclei. Binding energy. Radioactivity, the decay processes. Medical				
17 th week: Lecture 34-35: Magnetism. Magnetic field.	application of radioactivity.				

Academic advisor: Dr. Attila Jenei, Department of Biophysics and Cell Biology Recommended book: Serway, Vuille: College Physics (11th edition)

Subject: INTRODUCTION TO MEDICAL CHEMISTRY I-II.

Year, Semester: Intensive Basic Medicine Course Number of teaching hours: Lecture: 92 Seminar: 92

1 st week:	8 th week:
Lecture:	Lecture:
introduction to Chemistry. Symbols of the	I ne gaseous state
The SL system of measurement	chemistry of water
The ST system of measurement	chemistry of water
2 nd week:	9 th week:
Lecture:	Lecture:
The atomic theory. Structure of the atom, nuclear	Solutions. Electrolytes and nonelectrolytes
arithmetic	Summary of general chemistry 2
formulas. Naming chemical compounds	Test #2
	10 th week:
3 rd week:	Lecture:
Lecture:	Chemical equilibrium
Atomic, molecular and molar mass relationships	Acids and bases 1
Percent composition and empirical/molecular	
formulas. Chemical equations, stoichiometry	11 th week:
	Lecture:
4 th week:	Acids and bases 2
Lecture:	Thermochemistry: internal energy and state
Summary of general chemistry 1	functions. Enthalpy. Hess's law
lest #1	1.0th sweets
5th weeks	12 ^{ch} week:
J. week:	Reday reactions. Activity series of the elements
The electromagnetic spectrum Atomic spectra	Galvanic cells
The Bohr model of hydrogen atom. The guantum	Summary of general chemistry 3
mechanical model of the atom	Test #3
Electron configurations and the periodic table	
Classification of the elements	13 th week:
	Lecture:
6 th week:	The main-group elements. s-, p-, d-block metals
Lecture:	Nonmetals: hydrogen, halogens and noble gases
Periodic properties	
Chemical bonds: metallic, ionic, and covalent	14 th week:
bond. Electron-dot structures	Lecture:
	Nonmetals: oxygen and sulfur
7 th week:	Nonmetals: nitrogen, phosphorus and carbon
Lecture:	
VSEPR and valence bond theory	15 th week:
Intermolecular forces	Lecture:
	1

CHAPTER 13

Covalent bonding in organic compounds.	20 th week:
Classification of organic compounds.	Lecture:
Alkanes. Nomenclature and isomerism of alkanes	Summary of organic chemistry 2
Reactions of alkanes. Cycloalkanes	Test #5
-	Nitrogen containing organic compounds 1:
16 th week:	aliphatic amines
Lecture:	
Unsaturated hydrocarbons	21 st week:
Summary of organic chemistry 1	Lecture:
Test #4	Nitrogen containing organic compounds 2:
	heterocyclic nitrogen compounds. Amines of
17 th week:	biological importance
Lecture:	Carboxylic acids
Aromatic compounds: structure and properties	
Heteroaromatic compounds. Reactions of	22 nd week:
benzene and its derivatives	Lecture:
	Substituted carboxylic acids. Carboxylic acid
18 th week:	derivatives 1: esters and amides
Lecture:	Carboxylic acid derivatives 2: halides and
Organic halogen compounds	anhydrides; salts and detergents
Alcohols and phenols	
-	23 rd week:
19 th week:	Lecture:
Lecture:	Stereochemistry
Ethers, thioethers. Organic sulfur compounds	Summary of organic chemistry 3
Aldehydes, ketones and quinones	Test #6

Contact person: Dr. Krisztina Tar, Department of Medical Chemistry Recommended books: McMurry, Fay: Chemistry (7th edition) Erdődi, Csortos: Organic chemistry for premedical students (2010)

CHAPTER 14 ACADEMIC PROGRAM FOR CREDIT SYSTEM

ACADEMIC PROGRAM FOR CREDIT SYSTEM

The introduction of the credit system became compulsory in every Hungarian university, including the University of Debrecen by September, 2003. The aim of the credit system is to ensure that the students' achievements can be properly and objectively evaluated both quantitatively and qualitatively.

A credit is a relative index of cumulative work invested in a compulsory, a required elective or a freely chosen subject listed in the curriculum. The credit value of a course is based upon the number of lectures, seminars and practical classes of the given subject that should be attended or participated in (so called "contact hours"), and upon the amount of work required for studying and preparing for the examination(s). Together with the credit(s) assigned to a particular subject (quantitative index), students are given grades (qualitative index) on passing an exam/course/class. The credit system that has been introduced in Hungary meets the standards of the European Credit Transfer System (ECTS). The introduction of the ECTS promotes student mobility and facilitates more effective organization of students' exchange programs aimed at further education in foreign institutions, and allows recognition of the students' work, studies and achievements completed in various foreign departments by the mother institution. Credit-based training is flexible. It provides a wider range of choice, enables the students to make progress at an individual pace, and it also offers students a chance to study the compulsory or required subjects at a different university, even abroad. Owing to the flexible credit accumulation system, the term "repetition of a year" does not make sense any longer. It should be noted, however, that students do not enjoy perfect freedom in the credit system either, as the system does not allow students to randomly include subjects in their curriculum or mix modules. Since knowledge is based on previous studies, it is imperative that the departments clearly and thoroughly lay down the requirements to be met before students start studying a subject.

The general principles of the credit system are the following:

1. Students can be given their degree if, having met other criteria as well, they have collected 300 credits during their studies. Considering the recommended curriculum, this can be achieved in five years.

2. According to the credit regulations, students should obtain an average of 30 credits in each semester.

3. The criterion of obtaining 1 credit is to spend 30 hours (including both contact and non-contact hours) studying the given subject.

4. Credit(s) can only be obtained if students pass the exam of the given subject.

5. Students accumulate the required amount of credits by passing exams on compulsory, required elective and freely chosen subjects. Completion of every single compulsory credit course is one of the essential prerequisites of getting a degree. Courses belonging to the required elective courses are closely related to the basic subjects, but the information provided here is more detailed, and includes material not dealt with in the frame of the compulsory courses. Students do not need to

take all required elective courses, but they should select some of them wisely to accumulate the predetermined amount of credits from this pool. Finally, a certain amount of credits should be obtained by selecting from the freely chosen courses, which are usually not related to the basic (and thus mandatory) subjects, but they offer a different type of knowledge.

6. 80, 15 and 5 percent of the total of 300 credits should be accumulated by completing the compulsory, required elective and freely chosen courses, respectively.

7. According to the qualification requirements, professional (compulsory and required elective) courses fall into three modules. The basic module provides the theoretical basis of medicine, and ensures that the necessary practical skills are developed. The preclinical module lays down the foundations of clinical knowledge, while in the clinical module the students are taught clinical medicine, and they attend practical classes to ensure proper command of the medical procedures. The credits accumulated in the different modules for compulsory and required courses should show the following distribution: basic module: 80-100, preclinical module: 45-59, clinical module: 25-31, and dental clinical module 90-100 credits.

8. The pilot curricula show the recommended pacing of compulsory courses. If these courses are carefully supplemented with credits obtained from the necessary number of required elective and freely chosen courses, students can successfully accumulate the credits required for their degree within 10 semesters.

9. In the case of two-semester subjects, when students have to pass a final exam, they get higher credits in the semester of the final examination since preparation for a final examinatio takes up more non-contact hours from the students' time.

10. There are 12 compulsory final examinations in the curriculum; therefore one final exam is worth at least 10 credits.

11. The diploma work is worth 20 credits.

12. Regulations concerning the training of students in the credit system prescribe a minimum amount of credits for certain periods as outlined in the Rules and Regulations for English Program Students.

13. Although Physical Education and Summer Internship are not recognized by credits, they have to be completed to get the final degree (see the rules outlined in the Information section about the conditions).

14. Evaluation of the students' achievements needed for grants or applications is described in the Rules and Regulations for English Program Students.

15. Further information is available in the Rules and Regulations for English Program Students.

We very much hope that this system of training will contribute to the successful completion of your studies.

We wish you good luck with your university studies.

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	Basics of behavioural sciences	FOPSZ06D1	20			AW5	2	None
1	Biophysics Lecture	FOBIF09D1	24	26		ESE*	3	None
1	Biophysics Practical	FOBIF10D1			16	AW5	2	None
1	Biostatistics	FOBST04D1		28		ESE	2	None
1	Hungarian Crash Course	FOG261008			36	AW5	0	None
1	Hungarian Language I/1.	FOHUN01D1-K1			24	AW5	2	Hungarian Crash Course
1	Medical Chemistry I. Lecture	FOOKEM1E23EN	23	40		ESE	5	None
1	Medical Chemistry I. Practical	FOOKEM1G23EN			18	AW5	1	None
1	Odontology	FOODO02D1	14		28	ESE	4	None
1	Oral Anatomy, Histology and Embryology I. Lecture	FOFANA1E23EN	28	28		ESE	4	None
1	Oral Anatomy, Histology and Embryology I. Practical	FOFANA1G23EN			28	AW5	2	None

Compulsory courses for the 1. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
2	Cell Biology Lecture	FOSEJ09D2	26	28		ESE*	4	None
2	Cell Biology Practical	FOSEJ10D2			20	AW5	2	None
2	First aid and reanimation	FOELS06D2	6		15	AW5	1	None
2	Hungarian Language I/2.	FOHUN02D2-K1			28	AW5	2	Hungarian Crash Course, Hungarian Language I/1.
2	Introduction to Dentistry	FOBFOG0K23EN	5		5	AW5	1	None
2	Medical Chemistry II. Lecture	FOOKEM2E23EN	25	28		FE	5	Medical Chemistry I. Lecture
2	Medical Chemistry II. Practical	FOOKEM2G23EN			30	AW5	2	Medical Chemistry I. Lecture
2	Oral Anatomy, Histology and Embryology II. Lecture	FOFANA2E23EN	36	28		ESE	4	Oral Anatomy, Histology and Embryology I. Lecture
2	Oral Anatomy, Histology and Embryology II. Practical	FOFANA2G23EN			56	AW5	3	Oral Anatomy, Histology and Embryology I. Lecture
2	Preventive Dentistry I.	FOPRE02D2		14		AW5	2	Odontology
2	Summer chairside practice for 1st and 2nd year dental student	FO_NYGY_CHAIRSI DE			120	AW2	4	has to be completed before the 3rd year

Compulsory courses for the 1. year

Sem	Subjects	Neptun code	L	s	Р	Exam	Crd	Prerequisites of taking the subject
1	Biochemistry I. Lecture	FOBKEM1E23EN	52	14		ESE	5	Medical Chemistry II. Lecture
1	Biochemistry I. Practical	FOBKEM1G23EN			40	AW5	3	Medical Chemistry II. Lecture
1	Dental Physiology I. Lecture	FOFETN1E23EN	48	28		ESE	5	Biophysics Lecture, Oral Anatomy, Histology and Embryology II. Lecture
1	Dental Physiology I. Practical	FOFETN1G23EN			42	AW5	2	Oral Anatomy, Histology and Embryology II. Lecture, Biophysics Lecture
1	Hungarian Language II/1.	FOHUN03D3-K1			28	AW5	2	Hungarian Language I/2.
1	Introduction to Prosthodontics I.: Dental Materials	FOFPO31D3	14		28	ESE	3	Biophysics Lecture, Medical Chemistry II. Lecture
1	Oral Anatomy, Histology and Embryology III. Lecture	FOFANA3E23EN	42	26		FE	5	Cell Biology Lecture, Oral Anatomy, Histology and Embryology II. Lecture
1	Oral Anatomy, Histology and Embryology III. Practical	FOFANA3G23EN			28	AW5	3	Cell Biology Lecture, Oral Anatomy, Histology and Embryology II. Lecture

Compulsory courses for the 2. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
2	Basics in Dental Propedeutics	FOFPRO0G23EN	1		13	AW5	1	Introduction to Dentistry, Preventive Dentistry I.
2	Biochemistry II.	FOBKEM2E23EN	46	28		FE	7	Biochemistry I. Lecture
2	Dental Physiology II. Lecture	FOFETN2E23EN	48	28		FE	8	Dental Physiology I. Lecture, Oral Anatomy, Histology and Embryology III. Lecture
2	Dental Physiology II. Practice	FOFETN2G23EN			12	AW5	1	Oral Anatomy, Histology and Embryology III. Lecture, Dental Physiology I. Lecture
2	Hungarian Language II/2.	FOHUN04D4-K1			28	AW5	2	Hungarian Language II/1.
2	Introduction to Prosthodontics II.: Introduction to the Fixed Prosthodontics	FOFPO33D4	14		28	ESE	3	Introduction to Prosthodontics I.: Dental Materials, Odontology, Oral Anatomy, Histology and Embryology III. Lecture

Compulsory courses for the 2. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	Clinical Biochemistry I.	FOKBK07D5	8		6	AW5	1	Dental Physiology II. Lecture
1	Dental Microbiology	FOMIK06D5	28		28	ESE*	4	Oral Anatomy, Histology and Embryology III. Lecture
1	General Pathology	FOPAT11D5	28	14	28	ESE	4	Oral Anatomy, Histology and Embryology III. Lecture
1	Immunology	FOIMM06D5		28		ESE	2	Biochemistry II., Dental Physiology II. Lecture
1	Introduction to Prosthodontics III.: Propedeutics of Total and Partial Removable Dentures	FOFPO34D52	14		42	ESE	2	Introduction to Prosthodontics II.: Introduction to Fixed Prosthodontics
1	Medical Hungarian I.	FOHUN05D5			28	AW5	2	Hungarian language II/2.
1	Odontotechnology I.	FOFPO41D62	10		42	AW5	2	Introduction to Prosthodontics II.: Introduction to the Fixed Prosthodontics
1	Oral Biology	FOORA02D5	14	14		ESE	2	Odontology, Dental Physiology II. Lecture
1	Periodontology Propedeutics I.	FOPAR10D5	2		8	AW5	1	Dental Physiology II. Lecture, Basics in Dental Propedeutics
1	Restorative Dentistry Propedeutics I. (Cariology)	FOCAR02D5	14		56	AW5	4	Dental Physiology II. Lecture, Basics in Dental Propedeutics

Compulsory courses for the 3. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
2	Basic Surgical Techniques	FOMUT05D6	5	7	6	AW5	1	Dental Physiology II. Lecture
2	Bioethics	FOETI04D6	6	9		AW5	1	None
2	Clinical Biochemistry II.	FOKBK08D6	11		6	ESE*	1	Clinical Biochemistry I.
2	Dosimetry, Radiation Health Effects	FODOZ02D6		24		ESE	2	Biophysics Lecture
2	Introduction to Dental Radiology	FORAD04D6	18	23		ESE	3	General Pathology, Oral Biology
2	Introduction to Prosthodontics IV.: Propedeutics of Fixed Prosthodontics	FOFPO35D52	14		42	FE	2	Introduction to Prosthodontics III.: Propedeutics of Total and Partial Removable Dentures; Odontotechnology I., Basics in Dental Propedeutics
2	Medical Hungarian II.	FOHUN06D6			28	FE	2	Medical Hungarian I.
2	Medical Psychology	FOPSZ12D6	10		10	ESE	2	Basics of Behavioural Sciences
2	Odontotechnology II.	FOFPO37D52	10		42	AW5	2	Introd. to Prosthodontics III.: Propedeutics of Total and Partial Removable Dentures, Odontotechnology I.
2	Oral Surgery Propedeutics	FOSZS02D6	14		28	ESE	2	Oral Anatomy, Histology and Embryology III. Lecture, Basics in Dental Propedeutics
2	Organ and Oral Pathology	FOPAT12D6	50	14	14	FE	5	General Pathology
2	Periodontology Propedeutics II.	FOPAR12D6	2		15	AW5	1	Periodontology Propedeutics I.
2	Restorative Dentistry Propedeutics II. (Endodontics)	FOEND02D6	14		56	ESE	4	Restorative Dentistry Propedeutics I. (Cariology), Oral Biology
2	3rd year Summer Practice for Dentistry Students	FO_NYGY_3RD YEAR			60	AW2	2	has to be completed before the 4th year, Oral Surgery Propedeutics

Compulsory courses for the 3. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	Complex Dentistry I.	FOKOMP02D7	5		105	AW5	7	Oral Surg. Prop., Restorative Dent. Prop. II.(Endodontics), Introduction to Prosthodontics IV.: Prop.of Fixed Prosthodontics, Period. Prop.II.
1	Dental Pharmacology I.	FOGYO07D7	30	14		ESE	2	Organ and Oral Pathology, Biochemistry II., Dental Physiology II. Lecture
1	Dermatology	FOBOR06D7	14			ESE	1	Organ and Oral Pathology
1	Internal Medicine I.	FOBEL19D7	14		14	ESE	2	Dental Physiology II. Lecture, Organ and Oral Pathology, Biochemistry II.
1	Oral Surgery I.	FOSZS14D7	14		10	AW5	1	Organ and Oral Pathology, Oral Surgery Propedeutics, 3rd year summer practice
1	Orthodontics I.	FOFSZ06D7	15		15	AW5	1	Restorative Dentistry Propedeutics II. (Endodontics), Introduction to Prosthodontics IV.: Propedeutics of Fixed Prosthodontics
1	Otolaryngology	FOFUL06D7		14		ESE*	1	Organ and Oral Pathology
1	Periodontology I.	FOPAR14D7	14		10	ESE	1	Organ and Oral Pathology, Oral Biology, Biochemistry II.
1	Preventive Dentistry II.	FOPRE04D7		14		AW5	1	Restorative Dentistry Propedeutics II. (Endodontics)
1	Preventive Medicine and Public Health	FOMEG06D7	28	24	4	ESE*	3	Dental Microbiology, Organ and Oral Pathology
1	Prosthetic Dentistry I.	FOFPO14D7	14		10	ESE	1	Intro. to Prosthodontics IV.: Prop. of Fixed Prosthodontics, Rest. Dent. Prop II.
1	Restorative Dentistry I. (Cariology)	FOKON02D7	14		10	ESE	1	Rest. Dent. Prop. II. (Endodontics), Intro. to Prosthodontics IV.: Prop.

Compulsory courses for the 4. year

CHAPTER 14

							of Fixed Prosthodontics	
1	Surgery	FOSEB06D5	14		ESE	1	Organ and Oral Pathology, Basic Surgical Techniques	
1	Thesis consultation I.	FODIP45D7		75	AW5	5	None	
Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
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2	Complex Dentistry II.	FOKOMP04D8	5		105	AW5	7	Complex Dentistry I., Dosimetry, Radiation Health Effects, Introduction to Dental Radiology
2	Complex summer practice for dental student	FO_NYGY_COMPLEX			120	AW2	4	Complex Dentistry II., has to be completed before the 5th year
2	Dental Pharmacology II.	FOGYO08D8	30	14		FE	3	Dental Pharmacology I.
2	Digital Dentistry	FODIF02D9	14		14	AW5	2	Introduction to Prosthodontics IV.: Propedeutics of Fixed Prosthodontics, Introduction to Dental Radiology
2	Emergency Medicine	FOOXY06D8	22		22	ESE*	2	Organ and Oral Pathology, First Aid and Reanimation
2	Internal Medicine II.	FOBEL20D8	28		28	FE	3	Internal Medicine I.
2	Oral Surgery II.	FOSZS16D8	14		10	ESE	1	Oral surgery I.
2	Orthodontics II.	FOFSZ02D8	15	1	15	FE	2	Orthodontics I.
2	Pediatric Dentistry Propedeutics	FOGYF10D8		5	10	AW5	1	Preventive Dentistry II., Orthodontics I.
2	Periodontology II.	FOPAR20D8	14		10	ESE	2	Periodontology I.
2	Prosthetic Dentistry II.	FOFPO16D8	14		10	ESE	2	Prosthetic Dentistry I.
2	Restorative Dentistry II. (Endodontics)	FOKON10D8	14		10	ESE	2	Restorative Dentistry I. (Cariology)
2	Thesis consultation II.	FODIP46D8		75		AW5	5	Thesis Consultation I.

Compulsory courses for the 4. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	Complex Dentistry III.	FOKOMP11D9	5		280	AW5	12	Complex Dentistry II.
1	Forensic Medicine	FOIGA06D9	14		14	ESE	1	Organ and Oral Pathology
1	Neurology	FONEU06D9	10		10	ESE	1	Internal Medicine II., Dental Pharmacology II.
1	Oral Medicine	FOOME02D99	14		10	ESE	1	Dental Pharmacology II.
1	Oral Surgery III.	FOSZS18D9	14		10	ESE	1	Oral Surgery II.
1	Pediatric Dentistry I.	FOGYF06D99	14		15	ESE	2	Orthodontics II., Pediatric Dentistry Propedeutics
1	Pediatrics	FOGYE06D9	14		14	ESE	2	Dental Pharmacology II., Internal Medicine II.
1	Prosthetic Dentistry III.	FOFPO18D9	14		10	ESE	1	Prosthetic Dentistry II., Digital Dentistry
1	Psychiatry	FOELM08D9	5		5	ESE	1	Medical Psychology, Dental Pharmacology II., Internal Medicine II.
1	Restorative Dentistry III. (Cariology and Endodontics)	FOKON06D9	14		10	ESE	1	Restorative Dentistry II (Endodontics), Complex Dentistry II.
1	Thesis consultation III.	FODIP47D9		75		AW5	5	Thesis Consultation II.

Compulsory courses for the 5. year

Sem	Subjects	Neptun code	L	s	Р	Exam	Crd	Prerequisites of taking the subject
2	Complex Dentistry IV.	FOKOMP12D10	5		240	AW5	8	Complex Dentistry III.
2	Oral Surgery IV.	FOSZS20D10	12		10	FE	3	Oral Surgery III.
2	Pediatric Dentistry II.	FOGYEF04D10	12		15	FE	4	Pediatric Dentistry I.
2	Periodontology III.	FOPAR18D10	12		10	FE	3	Periodontology II, Oral Medicine
2	Prosthetic Dentistry IV.	FOFPO20D10	12		10	FE	3	Prosthetic Dentistry III.
2	Restorative Dentistry IV. (Cariology and Endodontics)	FOKON08D10	12		10	FE	3	Restorative Dentistry III. (Cariology and Endodontics), Complex Dentistry III.
2	Thesis consultation IV.	FODIP48D10		75		AW5	5	Thesis Consultation III.

Compulsory courses for the 5. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	Communication Skills	FOKOM44D1-K2			20	AW5	2	None
1	Library System	FOKON46D1		10		AW5	1	None

Required elective courses for the 1. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
2	Computer Science	FOINF46D1			28	AW5	2	None
2	Getting Close to the Lab	AOKMGY0G23EN			42	AW5	3	Good or excellent marks of Biophysics and Cell Biology
2	Latin Language	FOLAT44D2			28	AW5	2	None
2	Medical Genetics	FOGEN04D2	30		26	AW5	2	None
2	Medical Genomics	FOGEN44D2	12		2	AW5	1	None

Required elective courses for the 1. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	History of Dentistry, Prosthetic Dentistry Compulsory Elective I.	FOFPO42D6	14			AW5	2	Odontology

Required elective courses for the 2. year

Sem	Subjects	Neptun code	L	s	Р	Exam	Crd	Prerequisites of taking the subject
2	Modern biophysical methods in biology and medicine	FOMOD42D4	24			AW5	2	Biophysics Lecture, Cell Biology Lecture
2	Modern Techniques Allowing the Investigation of Physiological Phenomena	FOKOR42D4	30			AW5	2	Dental Physiology I. Lecture
2	Problem Based Learning in Physiology	FOPEL42D4			28	AW5	2	Dental Physiology I. Lecture
2	The regulatory role of the cell membrane in physiological and pathological conditions	FOSEM42D4	20			AW5	2	Dental Physiology I. Lecture

Required elective courses for the 2. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	Cariology elective I. (Fundamentals of Cariology)	FOCAR43D5		14		AW5	1	Introduction to Prosthodontics II.: Intoduction to the Fixed Prosthodontics
1	Medical Anthropology	FOANT44D6	15			AW5	2	None
1	Molecular Mechanism of diseases concerning great population	AOG167605	25			AW5	2	Biochemistry II. Lecture

Required elective courses for the 3. year

Required elective courses for the 3. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
2	4-hand Treatment	FO4KEZD6		10		AW5	1	Restorative Dentistry Propedeutics I. (Cariology), Introduction to Prosthodontics III.: Propedeutics and Technology of Total and Partial Removable Dentures
2	Clinical Gerontology	FOKLG44D6	30			AW5	3	Dental Physiology II., Immunology
2	Clinical Physiology	FOKFI08D6	14	20		AW5	2	General Pathology, Dental Physiology II.
2	Clinicopathological case presentation of the head and neck region diseases	FOKPAT0E23EN	28			AW5	2	General Pathology
2	Medical Sociology	FOSZO04D6	8	7		AW5	2	None

Sem	Subjects	Neptun code	L	s	Р	Exam	Crd	Prerequisites of taking the subject
1	Behavioural Medicine	FOMAG43D7	10			AW5	1	Medical Psychology
1	Endodontics elective I.	FOENDE42D8		14		AW5	1	Restorative Dentistry Propedeutics II (End.).,Preventive Dentistry I.
1	Oral Surgery Elective I. Extraction Practice	FOSZS42D7			14	AW5	1	Oral Surgery Propedeutics, 3rd year summer practice, Oral Surgery I. parallel registration or previous fulfillment

Required elective courses for the 4. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
2	Cariology elective II. (Diet and nutrition in oral health)	FOCAR44D7		14		AW5	1	Restorative Dentistry I. (Cariology)
2	Implantology - Basics of Oral Implantology	FOIMP42D10		14		AW5	1	Oral Surgery I., Prosthetic Dentistry I.
2	Periodontology elective I.	FOPAR42D8	14			AW5	1	Periodontology I.

Required elective courses for the 4. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
1	Endodontics elective II. (Microscope in dental practice)	FOEND44D9		14		AW5	1	Restorative Dentistry II. (End.)
1	Esthetic Dentistry	FOEPO42D6		14		AW5	1	Prosthetic Dentistry II.

Required elective courses for the 5. year

Sem	Subjects	Neptun code	L	S	Р	Exam	Crd	Prerequisites of taking the subject
2	Cariology elective III. (Esthetics in restorative dentistry)	FOCAR46D10		12		AW5	1	Restorative Dentistry III. (Cariology and Endodontics)
2	Cone Beam CT in Prosthetic Dentistry	FOCBCTD11		12		AW5	1	Introduction to Dental Radiology, Oral Surgery III., Prosthetic Dentistry III.
2	Pediatric Dentistry Elective	FOGFE44D9		12		AW5	1	Pediatric Dentistry I.
2	Praxis management	FOPRA42D10	12			AW5	1	Prosthetic Dentistry III., Restorative Dentistry III. (Cariology and Endodontics)

Required elective courses for the 5. year

Department	Subject	Neptun code	Crd	Sem	Hours	Exam	Prerequisites of taking the subject	Coordinator
Department of Biomaterials and Prosthetic Dentistry	Advanced Dental Materials	FOADM01D 10	1	1	14	AW5	Complex Dentistry II.	
Department of Biomaterials and Prosthetic Dentistry	Tissue Engineering and Regeneration in Dentistry	FOSZOVTE RV02	1	2	14	AW5	Complex III. practice	József Bakó M.Sc., Ph.D.
Department of Biomaterials and Prosthetic Dentistry	Stem cells and their applicability in dentistry	FOOSS02	1	2	15	AW5	Cell Biology	
Department of Biomaterials and Prosthetic Dentistry	Dental implant system	FOIMPS02D 8	1	2	12	AW5	Implantology - Basics of Oral Implantology	
Department of Anatomy, Histology and Embryology	Investigation of the embryonic cell-and tissue differentation	AOG101100 3	2	1	26	AW5	Oral Anatomy, Histology, Embriology I., Cell Biology, Biophysics	Róza Zákány M.D., Ph.D.
Department of Anatomy, Histology and Embryology	Computer Human Anatomy (CHA) and Clinical oriented anatomy of Head and Neck	AOG101020 4	1	2	16	AW5	None	András Stelescu M.D.
Department of Behavioural Sciences	Madness and Psychiatry (Philosophical Approach)	AOG359602	1	2	20	AW5	None	Attila Bánfalvi M.A., Ph.D., C.Sc.
Department of Behavioural Sciences	Theoretical and Methodological Questions of Patient Satisfaction Studies	AOG359308	1	2	15	AW5	None	Bence Döbrőssy M.A.
Department of Behavioural Sciences	Yoga and Meditation I.	AOG351200 1-K1	1	1	30	AW5	None	Péter Molnár M.D., D.Sc.
Department of Behavioural Sciences	Intercultural Health Care	AOG351160 5-K1	2	2	30	AW5	None	Bence Döbrőssy M.A.
Department of Behavioural Sciences	Yoga and Meditation II.	AOG351040 1-K1	2	-	30	AW5	None	Péter Molnár M.D., D.Sc.
Department of Behavioural Sciences	Health and Healing in World Religions	AOG352101	1	1	20	AW5	None	Bence Döbrőssy M.A.

Freely Chosen Courses

CHAPTER 14

							Prerequisites of taking the	
Department	Subject	Neptun code	Crd	Sem	Hours	Exam	subject	Coordinator
Department of Behavioural Sciences	Introduction into Research Ethics	AOG352260 7	1	1	20	AW5	None	János Kristóf Bodnár M.A., Ph.D.
Department of Behavioural Sciences	Philosophy of Medicine in the Lights of Science- Fiction Movies	AOG359902	2	2	26	AW5	None	János Kristóf Bodnár M.A., Ph.D.
Department of Behavioural Sciences	End of Life Topics in Movies	AOG351100 1	1	1	20	AW5	None	Sándor Kőmüves M.A., Ph.D.
Department of Behavioural Sciences	End of Life Decisions I. Introduction	AOG351270 1	1	1	15	AW5	None	Sándor Kőmüves M.A., Ph.D.
Department of Behavioural Sciences	End of Life Decisions II. Last Resorts	AOG351280 1	1	1	15	AW5	None	Sándor Kőmüves M.A., Ph.D.
Department of Behavioural Sciences	End of Life Decisions III. Cases	AOG351290 2	1	1	15	AW5	End of Life Decisions I. Introduction or End of Life Decisions II. Last Resorts	Sándor Kőmüves M.A., Ph.D.
Department of Behavioural Sciences	Bioethics on films	AOG351440 5	2	1	26	AW5	None	János Kristóf Bodnár M.A., Ph.D.
Department of Behavioural Sciences	Doctors, Patients and Carers in Literature and Film	AOG35A401	2	1-2	26	AW5	None	Eszter Ureczky M.A.
Department of Behavioural Sciences	Bioetical cases	AOG358706	2	1	30	AW	None	János Kristóf Bodnár M.A., Ph.D.
Department of Biochemistry and Molecular Biology	Biochemistry of Apoptosis	AOG167406	1	-	20	AW5	Biochemistry II.	Zsuzsa Szondy M.D., Ph.D., D.Sc.
Department of Biochemistry and Molecular Biology	Retroviral Biochemistry	AOG167506	1	2	20	AW5	None	József Tőzsér M.Sc., Ph.D., D.Sc.
Department of Dermatology	Plastic and reconstructive surgery	FOPLSURG 01	1	12	15	AW5	None	István Juhász M.D., Ph.D., C.Sc.
Department of Foreign Languages	Hungarian Language Elective General II.	AOG269102 -K1	2	2	28	AW5	Hungarian Crash Course	Katalin Rozman M.A.
Department of Foreign Languages	Hungarian Language Elective General I.	AOG268901 -K1	2	1	28	AW5	Hungarian Crash Course	Katalin Rozman M.A.

ACADEMIC PROGRAM FOR CREDIT SYSTEM

Department	Subject	Neptun code	Crd	Sem	Hours	Exam	Prerequisites of taking the subject	Coordinator
Department of Foreign Languages	Hungarian Language Elective - Medical I.	AOG26108A 1-K1	2	1	28	AW5	Completion of Hungarian Langauge III/2 or Medical Hungarian II Final exam	Katalin Rozman M.A.
Department of Foreign Languages	Hungarian Language Elective - Medical II.	AOG26108A 2-K1	2	2	28	AW5	Hungarian Language Elective Medical I.	Katalin Rozman M.A.
Department of Foreign Languages	Latin Medical Terminology I.	AOG261100 2	1	1-2	28	AW5	Latin Language	Katalin Rozman M.A.
Department of Foreign Languages	Elective Hungarian for Dentistry Students	FOHUNELE CT01	2	1-2	28	AW5	Medical Hungarian II.	Katalin Rozman M.A.
Department of Foreign Languages	Hungarian Language Elective General III.	AOG269203	2	1	28	AW5	Hungarian Language I/2.	Katalin Rozman M.A.
Department of Foreign Languages	Hungarian Language Elective General IV.	AOG269304	2	2	28	AW5	Hungarian Language II/1.	Katalin Rozman M.A.
Department of Foreign Languages	Hungarian Language Elective General V.	AOG269605	2	1	28	AW5	Hungarian Language II/2.	Katalin Rozman M.A.
Department of Foreign Languages	Hungarian Language Elective General VI.	AOG269706	2	2	28	AW5	Hungarian Language III/1., Medical Hungarian I.	Katalin Rozman M.A.
Department of Internal Medicine	Inflammatory bowel diseases: clinical, therapeutical and immunological aspects	AOG148709	1	1	16	AW5	Internal Medicine I.	Zoltán Csiki M.D., Ph.D.
Department of Medical Microbiology	Tumor viruses and oncogenes	AOG427804	1	2	12	AW5	Dental Microbiology	György Veress M.Sc., Ph.D.
Department of Medical Microbiology	Interpretive Clinical Bacteriology and Virology	AOG428108	1	2	14	AW5	Dental Microbiology	József Kónya M.D., Ph.D., D.Sc.
Department of Medical Microbiology	Introduction to Medical Mycology	AOG421020 7	1	1-2	14	AW5	Dental Microbiology	László Majoros M.D., Ph.D.
Department of Medical Microbiology	Clinical Mycology	AOG421010 7	1	1-2	12	AW5	Dental Microbiology	László Majoros M.D., Ph.D.
Department of Medical Microbiology	Antimicrobial agents in dentistry	AOG429120 6	1	1	12	AW5	successful first semester exam of Medical Microbiology	László Majoros M.D., Ph.D.

Department	Subject	Neptun code	Crd	Sem	Hours	Exam	Prerequisites of taking the subject	Coordinator
Department of Oncoradiology	Radiation Therapy in Clinical Practice	AOSUG44T 9	3	1	42	AW5	Pharmacology II., Radiology and Nuclear Medicine II.	Árpád Kovács M.D., Ph.D.
Department of Operative Dentistry and Endodontics	Endodontics Elective III. Dentistry industry trends. Novelties in Dentistry.	FOKNFE3G 23EN	1	2	10	AW5	Restorative Dentistry III. (Cariology and Endodontics)	Kinga Bágyi Dr. habil., D.M.D., Ph.D.
Department of Pediatric and Preventive Dentistry	Dental developmental and structural diseases and their treatments	FOFEJLREL L02	1	1	15	AW5	Orthodontics II., Preventive Dentistry II.	Judit Nemes D.M.D., Ph.D.
Department of Pediatric and Preventive Dentistry	Trauma management in childhood and in adolescence	FOTRAMA N02	1	1	15	AW5	Orthodontics II., Preventive Dentistry II.	Judit Nemes D.M.D., Ph.D.
Department of Pulmonology	Asthma bronchiale	AOG587707	1	1	8	AW5	Pathology II.	László Brugós M.D., Ph.D.
Department of Pulmonology	Lung cancer	AOG587607	1	1	10	AW5	Pathology II.	Andrea Fodor M.D.
Division of Biophysics	Physical foundations of biophysics	AOG157303	1	1	24	AW5	None	Péter Béla Hajdu M.Sc., Ph.D.
Division of Cardiology	Echocardiography	AOG317307	1	1	18	AW5	Internal Medicine I., Clinical Physiology	Ida Hegedűs M.D., Ph.D.
Division of Cell Biology	Selected Topics in Cell Biology	FOG157403- K1	2	2	24	AW5	Cell Biology	
Division of Clinical Laboratory Science	Platelet Function and Platelet Function Disorders	AOG632006	1	2	12	AW5	Clinical Biochemistry	Zsuzsanna Bereczky M.D., Dr. habil., Ph.D.
Division of Rheumatology	Reumatology: Research and Clinical	AOG149108	1	2	10	AW5	Internal Medicine II. (Immunology and Rheumatology)	Zoltán Szekanecz M.D., Ph.D., D.Sc.

CHAPTER 15 SUMMER PRACTICE

Summer chairside practice for 1st and 2nd year dental student

Objectives of the practice: to get acquainted with the tasks of the dental nurse

- Parts of the dental surgery, methods of cleaning up the surgery.
- The dental unit. Cleaning and desinfecting the unit.
- The tasks of the dental nurse.
- Instruments and materials used in dental treatment.
- Instruments used by the dental nurse.
- Cleaning, desinfecting and maintaining the instruments.
- Preparing the instruments and materials before dental treatment.
- The task of the dental nurse during treatment.
- Administrative tasks.

The practice can be fulfilled either after the 1st or after the 2nd year in any dental surgery in Hungary or abroad.

A certificate about fulfilling the practice is necessary, signed by the summer-practice tutor.

Dento-alveolar summer practice for 3rd year students:

- Taking anamnesis
- Patient examination
- Inspection
- Palpation
- Percussion
- Taking status
- Performance of infiltration and nerve block anaesthesia
- Simple tooth-removal
- Post extraction advices
- Taking out the sutures
- Postoperative treatment of intraoral wounds

Complex summer practice for 4th year dental students:

Prerequsites: Cariology I Endodontics I Prothetic dentistry I Prosthetic dentistry II Oral surgery I Oral surgery II

Aim of practice: to practice basic dental treatments according to the patient's needs.

- Anamnestic data

- Patient examination
- Inspection

- Palpation
- Percussion
- Dental status
- Diagnosis
- Treatment plan
- Carry out basic treatment procedures
- Local anaesthesia
- Theoretical knowledge and manual abilities in the fields of conservative dentistry and endodontics

- Theoretical fields of crown- and bridgework, indications and contraindications, improving manual abilities; Total and partial dentures: theory and practice, indications and contraindications, clinical and

laboratory phases

- Basics in gnatology: anatomy of the TMJ, theoretical and practical aspects of the pathology of the TMJ

- Basics in dental technology

CHAPTER 16 ACADEMIC PROGRAM FOR THE 1ST YEAR

Department of Anatomy, Histology and Embryology Subject: ORAL ANATOMY, HISTOLOGY AND EMBRYOLOGY I. LECTURE

Year, Semester: 1st year/1st semester Number of teaching hours: Lecture: **28** Seminar: **28**

1st week: Lecture: 1. General osteology and arthrology. 2. Lining epithelial tissues. Seminar: Histology: Cells and tissues.	7th week: Lecture: 1. Differentiation of the endoderm. Formation and folding of the embryo. 2. Foetal membranes. Development of the external features of the foetus. Twins. Malformations. Seminar:
2nd week:	Histology: Histology of bone. Bone formation.
Lecture: 1. Skull: parts, bones and connections. 2. Glandular epithelium.	8th week:
Seminar:	Lecture: 1. Development of the skull. 2. Orbit,
Histology: Epithelial tissue I: Simple epithelia.	nasal cavity, paranasal sinuses
2nd marks	Seminar:
Jru week: Lacture: 1 Spermiogenesis opgenesis ?	Histology: Histology consultation.
Connective tissue I	9th week:
Seminar:	Lecture: 1. Bony oral cavity.
Histology: Epithelial tissue II: Stratified	Temporomandibular joint. 2. Temporal,
epithelia.	infratemporal and pterygopalatine fossae
4th week: Lecture: 1 Fertilisation cleavage 2 Adipose	Seminar: Histology: Embryology consultation.
tissue. Cartilage.	10th week:
Seminar:	Lecture: 1. Calvaria. Internal and external
Histology: Epithelial tissue III: Glandular	cranial base. 2. Histology of muscle
epithelium. Pigment epithelium.	Seminar:
	Histology: Embryology consultation.
5th week:	114h
the mesoderm 2 Histology of hone	Lecture: 1 General myology: basic anatomical
Seminar:	aspects of muscles 2 Nervous tissue
Histology: Connective tissue.	Seminar:
	Histology: Muscle tissue.
6th week:	
Lecture: 1. Differentiation of the ectoderm and	12th week:
mesoderm. 2. Bone formation	Lecture: 1. Blood. 2. Blood formation
Seminar:	Seminar:
Histology: Adipose fissue. Cartilage	Histology: Nervous fissue.

13th week:Lecture: 1. Spare lecture. 2. Spare lecture defects.Seminar:Histology: Blood. Blood formation.

14th week: Lecture: 1. Spare lecture. 2. Spare lecture Seminar: Histology: Histology consultation

Requirements

DENT Oral Anatomy, Histology and Embryology - I- Lecture

Requirements

The topics for lectures and seminars are listed in the Bulletin, any deviations and changes will be published on the Department's e-learning platform by the end of the first week of the semester.

Attendance at all seminars is compulsory in accordance with the Rules and Regulations of the UD, and absences will be noted by the tutor. The director of the institute may refuse to sign the subject if the number of absences from seminars in a semester exceeds three, even if certified. Absences from seminars may not be made up in another group due to the high number of students.

Rules for examinations

There are no self-control tests during the semester. At the end of the semester, the subject is concluded by an End Semester Examination (ESE) consisting of one written (MOODLE, embryology) and two oral parts (histology and anatomy). The ESE will cover the material from the lectures, exercises and seminars of the semester, as well as the official textbooks. The first exam will be considered an "A" exam.

1. The ESE starts with the *written Embryology test*. If the test is passed, the student proceeds to the dissection or histology stations. Failure of the test is the end of the exam. The written test is graded:

0 - 59% = 1 (fail) 60 - 69% = 2 (pass) 70 - 79% = 3 (satisfactory) 80 - 89% = 4 (good) 90 - 100% = 5 (excellent)

If you fail the written exam in Embryology in the "C"- chance exam, you will also be given an oral Embryology topic at the beginning of the Histology part of the exam. The exam can only be continued if this is passed.

2. After the common written part, students continue the exam with an *oral histology (histology practice room)* or *oral anatomy (dissection room)* part. For both of these two additional stations, students draw one topic each, which contains two questions (skull) for the anatomy part and two sections (general histology) for the histology part.

For both the anatomy topic and the histology topic, the student will receive 1-1 mark, but the student must achieve a "pass" in both anatomy questions / sections.

Failure in either part of the examination will result in a retake of the entire examination.

Grade= (Anatomy mark + Histology mark + Embryology mark)/3

Anatomy mark = one mark in the oral examination Histology mark = one mark in the oral examination Embryology mark = one mark in the written exam

Correction of the Final Grade

If the student wishes to improve his/her grade in the examination, he/she must retake all parts of the examination. The previous mark will be cancelled.

Applying for and failing an examination

Rules of the Neptun system apply.

Conditions

To sit the examination in this subject, you must have successfully completed the "Oral Anatomy, Histology and Embryology -I – Practical" course.

Subject: ORAL ANATOMY, HISTOLOGY AND EMBRYOLOGY I. PRACTICAL

Year, Semester: 1st year/1st semester Number of teaching hours: Practical: **28**

1st week:

Practical: Introduction, terminology. Anatomical names, terms used to describe anatomical positions and relationships. Introduction to nomenclature and Latin terminology. Foundations of anatomical orientation: planes, directions, axes of movements, and their importance in anatomical description. Main parts of the human body and their Latin names.

2nd week:

Practical: General osteology and arthrology. Classification of bones based on shape. Parts of long bones. Classification of connections between bones with examples. Components of synovial joints. Classification of joints, definition of axes in joint movement.

3rd week:

Practical: Anatomy of the skull. Division and cavities of the skull. Introduction to skull bones. Connections between skull bones, types of sutures. Facial skeleton I.: maxilla, mandible.

4th week:

Practical: Anatomy of the skull. Facial skeleton II.: zygomatic, nasal, lacrimal, ethmoid, palatine and hyoid bones, inferior nasal concha, vomer.

5th week:

Practical: Anatomy of the skull. Neurocranium I.: frontal, parietal, and occipital bones.

6th week: Practical: Anatomy of the skull.

Neurocranium II.: sphenoid bone.

7th week: Practical: Anato

Practical: Anatomy of the skull. Neurocranium III.: temporal bone.

8th week:

Practical: Anatomy of the skull. Cavities of the facial skeleton and their connections I.: orbit, nasal cavity, paranasal sinuses

CHAPTER 16

9th week:	12th week:
Practical: Anatomy of the skull.	Practical: Anatomy of the skull.
Cavities of the facial skeleton and their	The neurocranium in full II.: internal and
connections II.: bony oral cavity.	external cranial base. Tympanic cavity.
Temporomandibular joint.	
	13th week:
	Practical: Anatomy of the skull.
10th week:	CONSULTATION.
Practical: Anatomy of the skull.	
Cavities of the facial skeleton and their	14th week:
connections III.: temporal, infratemporal, and	Practical: End Semester Exam (ESE)
pterygopalatine fossae.	
11th week:	

Practical: Anatomy of the skull. The neurocranium in full I.: calvaria, fontanelles.

Requirements

DENT Oral Anatomy, Histology and Embryology - I - Practical

Requirements

The topics of the practicals are described in the buletin. According to the Rules and Regulations of the UD attendance at the practicals is compulsory and absences

will be noted by the tutor. The head of the Department may refuse to sign the subject if the number of absences from the practical course exceeds three in a semester. Due to the high number of students, missed practicals cannot be made up with another group.

Rules for the practical examination

The practical examination will be oral and will take place in the dissecting room during the 14th week at the time of the practicals. The aim of the examination is to IDENTIFY macroscopic anatomical structures. A list of structures will be published by the Department, on its e-learning platform, during the first week of the semester.

The practical exam is passed with a 60% or better.

A successful Practical Exam will be converted into a grade as follows:

1 (fail)
2 (pass)
3 (satisfactory)
4 (good)
5 (excellent)

A failed Practical Exam may be repeated once during the semester and once during the examination period. The grade of the Practical Exam cannot be improved, only students who have not achieved 60% or could not show up due to medical reasons (proven with a doctor's note) on the previous occasion are allowed to retake the Practical Exam.

The Department will publish details of the Practical Examination on its e-learning platform.

Department of Behavioural Sciences

Subject: BASICS OF BEHAVIOURAL SCIENCES

Year, Semester: 1st year/1st semester Number of teaching hours: Lecture: **20**

1st week:	
Lecture: Introduction to Behavioural Sciences	7th week:
	Lecture: Basics of Medical Psychology III.:
2nd week:	Learning and Memory
Lecture: Basics of Bioethics	
	8th week:
3rd week:	Lecture: Basics of Medical Psychology IV.:
Lecture: Basics of Medical Anthropology	Personality and Psychological Disorders
4th week:	9th week:
Lecture: Basics of Medical Sociology	Lecture: Basics of Medical Psychology V.: Social Influence and Social Cognition
5th week:	č
Lecture: Basics of Medical Psychology I.:	10th week:
Human Development	Lecture: Medical Psychology VI. Psychological Methods and Research in Psychology
6th week:	
Lecture: Basics of Medical Psychology II.:	
Emotions and Motivations	

Requirements

Medical psychology course objectives: The aim of the course is to familiarize the students with the most important psychological aspects of health and illness, the psychological characteristic of medical profession as well as the healing/caring process. The main schools of psychology are also introduced. The course is ment to give basic knowledge for the purpose of understanding the phenomena of motivation, memory, socialization as far as they are relevant for future medical doctors. This means the first steps toward more specialised courses like medical psychology and behavioural medicine as well as electives to be introduced in the third and fourth academic years.

First year students should pass "End of Semester Examination" (ESE) at the end of the semester. The Department of Behavioural Sciences will adhere to the requirements of the General Academic Regulations and Rules of Examinations. The student must be present at the examination at the designated time. (He/she must explain the reason for any absence from the examination to the Departmental Adviser within 1 days of the day of examination.)

Department of Foreign Languages

Subject: HUNGARIAN CRASH COURSE

Year, Semester: 1st year/1st semester Number of teaching hours: Practical: **36**

1st week:

Practical: 1st day: 1. lecke, 2. lecke I. rész (Greetings, the alphabet, numbers 0-20, colours, everyday expressions, nationalities - **2nd day**: 2. lecke II. rész, 3. lecke (languages, numbers 21-29, names of places, the days of the week, numbers 30-100, the time, *hány óra van?* - **3rd day**: 4. lecke, 5. lecke I. rész (Test Your Knowledge 1, adjectives and adverbs, verbs expressing activities 1) - **4th day**: 5. lecke II. rész, 6. lecke (times of day, *hány órakor?*, numbers 1000-100000000, verbs expressing activities 2, everyday expressions, ordinal numbers) - **5th day**: 7. lecke, 8. lecke (Revision 1, everyday objects, food and drink, adverbs of frequency)

2nd week:

Practical: 1st day: 9. lecke, 10. lecke I. rész (Food, drink, fruit, vegetables, the menu, ordering in a restaurant, shopping in the market, the uses of *tessék*, the weather) - **2nd day:** 10. lecke II. rész, 11. lecke (the seasons and months, clothes, Test Your Knowledge 2) - **3rd day**: 12. lecke, 13. lecke I. rész (body parts, adjectives and descriptions, accessories, jobs, places) - **4th day:** 13. lecke II.rész, 14. lecke (personal details and filling in a form, family relations, revision 2) - **5th day**: End course written and oral exam.

Requirements

9.00-10.30: language classes

10.30 - 11:00 break

11.00 - 12.30: language classes

Attending the language classes is compulsory. Being late for a class is considered as an absence. In case of missing more than 8 lessons, students have to retake the course for an extra fee. Assessment: five grade evaluation. The final mark is based on the written and oral tests at the end of the course, class participation is also considered. The oral exam consists of a role-play from a list of situations covered in the coursebook. A further minimal requirement is the knowledge of 200 words. Students have to pass all the word quizzes in order to take the final test.

STUDENTS WHO DO NOT ATTEND THE HUNGARIAN CRASH COURSE DUE TO THEIR OWN FAULT OR FAIL THE COURSE HAVE TO TAKE AN EXTRA COURSE FOR AN ADDITIONAL FEE DURING THE FIRST SEMESTER. The final grade is given based on the following:

Result (%)	Grade
<60%	fail (1)
60-69%	pass (2)
70-79%	satisfactory (3)
80-89%	good (4)
90-100%	excellent (5)
120	

Subject: HUNGARIAN LANGUAGE I/1.

Year, Semester: 1st year/1st semester Number of teaching hours: Practical: **24**

1st week:	7th week:
Practical: 1. lecke: Itt az ideje gyakorolni, 2. lecke: Zoli	Practical: 7. lecke: Van ledved moziba menni?
	8th week:
2nd week: Practical: 3. lecke: UniBike és a Nagyerdő	Practical: 8. lecke: Megyünk az egyetemre
	9th week:
3rd week:	Practical: 9. lecke: Mit csinálsz a
Practical: 4. lecke: Debrecenbe utazik a családom	Malomparkban?
	10th week:
4th week:	Practical: 10. lecke: Kirándulunk a
Practical: 5. lecke: Panoráma a Nagytemplomból	Hortobágyon, 11. lecke: Ez az utolsó óra?
	11th week:
5th week:	Practical: Revision End-term test (written)
Practical: 6. lecke: Együtt a család Debrecenben	Self Control Test (written test)
6th week:	12th week:
Practical: Revision, Mid-term test (written)	Practical: End-term test (oral)
Self Control Test (Mid-term test (written))	Self Control Test (oral test)

Requirements

Requirements of the course: Attendance

Attending language classes is **compulsory**. If a student is late it is considered as an absence. Students can miss only 10 percent of the classes that is maximum *2 occasions*. In case of more than 2 absences, the signature may be refused. Making up a missed lesson with another group is not allowed.

The teacher evaluates active participation in each class. Students are not supposed to share coursebooks in the classes therefore if they fail to bring the coursebook to the class for the second time attendance is refused.

Testing, evaluation

During the semester students must sit for **two written language tests**, and **an oral exam.** If a student is late for the test, he/she is not allowed to take it.

A further minimum requirement is the knowledge of 160 words per semester divided into 8 word quizzes. There are four word quizzes before and another four after the midterm test. If a student fails or misses any word quizzes he / she cannot take the written test. A word quiz can be postponed

by a week and students can take it only with their own teacher. Missed word quizzes cannot be made up for on the day of the written test.

The oral exam consists of a role-play from a list of situations covered in the coursebook. If students fail the oral exam, they fail the whole course. The results of the written tests and the oral exam are combined and averaged.

Based on the final score the grades are given as follows.

Final score	Grade
0-59%	fail (1)
60-69%	pass (2)
70-79%	satisfactory (3)
80-89%	good (4)
90-100%	excellent (5)

If the final score of the written tests is below 60%, the student can take a written remedial exam once covering the material of the failed part. The remedial test must be done before the end of week 14. The oral test can only be taken if the written tests are successful.

Coursebook: Fodor, Marianna -Mezei, Zsuzsa Lívia: Szívből magyarul

Assignments, audio files, oral exam topics and vocabulary minimum lists can be found on the elearning site of the Department of Foreign Languages (www.elearning.med.unideb.hu).

Department of Medical Chemistry

Subject: MEDICAL CHEMISTRY I. LECTURE

Year, Semester: 1st year/1st semester Number of teaching hours: Lecture: 23 Seminar: 40

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1st week:	Thermodynamics
Lecture: Introduction to Medical Chemistry	Seminar: Lecture topics of the week
Quantum mechanical model of atoms	1
Seminar: Lecture topics of the week	5th week:
1	Lecture: Electrochemistry
2nd week:	Chemical kinetics I.
Lecture: The periodic table. Types of chemical	Seminar: Lecture topics of the week
bonds	-
Covalent bonding. Intermolecular forces	6th week:
Seminar: Lecture topics of the week	Lecture: Chemical kinetics II.
-	Introduction to organic chemistry (reactant-
3rd week:	substrate, intramolecular electronic displacement
Lecture: Solutions and colloids	effects, reaction types and mechanisms)
Chemical equilibrium	Seminar: Lecture topics of the week
Seminar: Lecture topics of the week	Self Control Test (1st SCT)
Ath wook:	7th wook:
Lasture: A aid base equilibrie Duffers	I acture: Hudrogerhang I II
Degulation of blood pU	Lecture , Hydrocarbonis I. II.
Regulation of blood pri	Seminar: Lecture topics of the week

8th week:	
Lecture: Aromatic compounds	12th week:
Organic halogen compounds. Alcohols and phenols	Lecture: Nitrogen-containing organic compounds. Nitrogen-containing heterocycles
Seminar: Lecture topics of the week	Seminar: Lecture topics of the week
9th week:	13th week: Stereochemistry
Lecture: Aldehydes, ketones and quinones	Lecture: Organic chemistry for life sciences and
Carboxylic acids	medicine
Seminar: Lecture topics of the week	Seminar: Lecture topics of the week
10th week:	14th week:
Lecture: Carboxylic acid derivatives. Organic	Lecture: Information about the exam period
sulfur compounds	Seminar: Lecture topics of the week
Seminar: Lecture topics of the week	Self Control Test (2nd SCT)
11th week:	
Lecture: Stereochemistry	
Seminar: Lecture topics of the week	

Requirements

The program consists of lectures and seminars. Attendance at lectures is not compulsory but essential for the successful completion of the course. Attendance at seminars is compulsory and recorded. Maximum 3 excused seminar absences are allowed.

Prerequisites for the Medical Chemistry Lecture I signature and exam registration: successfully completing the 'Medical Chemistry Practical I' subject (with passing grade or better).

There are two control tests during the semester scheduled for week 6 and week 14. Control tests are optional, and there is no pessibility to rewrite them.

Control tests and final exams will be assessed as follows:

Percentage (%)	Grade
0-56	fail (1)
57-65	pass (2)
66-75	satisfactory (3)
76-84	good (4)
85-100	excellent (5)

Students who passed both control tests get an offered grade. Offered grades are registered in Neptun and accepted as the final exam grade unless the student declines it by the end (Sunday midnight) of week 14.

The end of semester exam is a written exam consisting of 2 modules: General chemistry and Organic chemistry. There are 3 exam chances in a semester (A, B and C chance exams). Students may get exempted from a given written exam module in case they successfully completed the control test of the corresponding module (with a passing grade or better). Results of control tests and exam modules can be carried to B and C chance exams.

Information for repeaters:

- seminar attendance is compulsory

- results of control tests and written exam modules from the previous year(s) are not considered

- repeaters may write the control tests

Subject: MEDICAL CHEMISTRY I. PRACTICAL

Year, Semester: 1st year/1st semester Number of teaching hours: Practical: **18**

1st week: Practical: Laboratory safety instructions and fire regulations Chemical calculations. Concentration of solutions Laboratory equipment, volumetric apparatus. (Micro)pipetting	7th week: Practical: Spectrophotometry: Photometric determination of inorganic phosphate Quantitative protein analysis: Biuret assay, Bradford assay Assay of glucose. Enzymatic determination of glucose in blood serum
 3rd week: Practical: Quantitative analysis. Acid-base titrations: strong acid - strong base, weak acid - weak base titrations. Introducing and using titrators 5th week: 	 9th week: Practical: Electrometric pH measurement 11th week: Practical: Reaction kinetics. Kinetic study of the saponification reaction of ethylacetate (effect of concentration and temperature on rate)
Practical: Ion exchange chromatography Paper chromatography	Practical exam

Requirements

Attendance at laboratory practices is compulsory and recorded. Students should attend 100% of laboratory practices. Missed and not accepted practices can be made up on the same week while the missed lab is still running with the permission of the laboratory teacher.

The practical is graded by the laboratory teacher. Evaluation is based on the results of practical control tests written during the practical classes besides the manual work. Students who fail one or more control tests will have the opportunity to improve until the end of week 12. Passing grades can be also improved.

The 'Medical Chemistry Practical I' subject is a prerequisite for the signature and exam registration in 'Medical Chemistry Lecture I'. Students must pass the Medical Chemistry Practical I to be eligible to take the Medical Chemistry I exam.

Department of Operative Dentistry and Endodontics

Subject: **ODONTOLOGY**

Year, Semester: 1st year/1st semester Number of teaching hours: Lecture: 14 Practical: 28

1st week:	Practical: Demonstration of the lecture's theme
Lecture: Human dentitions. Nomenclature.	on skulls, dentures and teeth. Introduction to the
Definitions	practical classes. Description of modelling

materials and tools.	8th week: Lecture: The deciduous teeth
2nd week: Lecture: Dental symbolic systems. Losses of the	Practical: Modelling of upper 1st premolar from plasticine
Practical: Carving of upper central permanent incisor from chalk	9th week: Lecture: Development of teeth Practical: Carving of lower 1st premolar from
3rd week: Lecture: Tooth identifiers. Morphology of the	chalk
maxilla and mandible Practical: Carving of lower control permanent	10th week:
incisor from chalk	Practical: Modelling of lower 2nd premolar from plasticine
4th week: Lecture: The permanent maxillary and mandibular incisors and canines Practical: Carving of upper lateral permanent incisor from wax	11th week: Lecture: The enamel Practical: Carving of upper permanent 1st molar's crown from wax
5th week: Lecture: The maxillary and mandibular premolars Practical: Modelling of upper central and lateral permanent incisors from plasticine	12th week: Lecture: The dentin Practical: Modelling of lower permanent 1st molar from plasticine
6th week: Lecture: The permanent maxillary molars Practical: Modelling of lower 2nd incisor and canine from plasticine	13th week: Lecture: The pulp Practical: Modelling of lower 1st primary molar from plasticine. Practice of tooth identification
7th week: Lecture: The permanent mandibular molars Practical: Carving of upper canine from chalk	14th week: Lecture: The periodontium Practical: Modelling of upper 1st primary molar from plasticine. Practice of tooth identification

Requirements

Course objectives

The aim of the course: at the end of the 1st semester of 1st year, students need to know the detailed morphology of primary and secondary teeth and the development, histology and anatomy of the surrounding tissues of the teeth.

Short description of the course

Lectures deal with the morphology, histology of the teeth and the surrounding tissues. In the practical hours students modelling and carving teeth and practising the tooth identification on real permanent teeth.

Requirements for signing the lecture book:

The practices start and finish in accordance with the timetable, arriving late is not allowed. Students are required to stay at the premises of the practial from the beginning to the end of the class and participate actively in the practical work.

Missed classes cannot be more than 1 out of the total practice classes.

A certification is required for any absences which has to be handed to the leader of the practice course.

Missed classes cannot be made up for.

At the end of each practical, students work are evaluated with a grade.

The practice grades impact on the outcome of the end of semester exam.

Examination: at the end of the semester (ESE).

Materials for exam preparation: official lecture book, lectures and materials of the practicals.

Course exemption

Attendance at the course is not mandatory with valid signature obtained in a previous semester, therefore exemption from attending practices can be requested. The prerequisite for this is that the student needs to submit the request on the appropriate form via https://elearning.med.unideb.hu system at the corresponding course no later than the last working day of the first week of education.

Requirements for taking the subject:---

Division of Biomathematics

Subject: BIOSTATISTICS

Year, Semester: 1st year/1st semester Number of teaching hours: Seminar: **28**

1st week:

Lecture: 1. Introduction. Math introduction, functions. Set

2nd week:

Lecture: 2. Set theory. Conditional probability and its clinical implications. Marginalization, Bayes' theorem. Independent events. 3. Descriptive statistics (measures of central tendency and spread; percentiles, quartiles). Histograms, box and whisker plot. Seminar: Conditional probability, marginalization, Bayes' theorem. Independent events.

3rd week:

Lecture: 4. Discrete random variables. Characterization and graphical representation of discrete distributions (probability distribution and cumulative distribution function). Binomial and Poisson distributions. **Seminar:** Descriptive statistics.

4th week:

Lecture: 5. Continuous random variables. Probability density function. Normal and standard normal distributions. Seminar: Characterization and graphical representation of discrete distributions. Binomial and Poisson distributions.

5th week:

Lecture: 6. Sampling, biased and unbiased estimation. Central limit theorem. Standard error of the mean. Basics of hypothesis testing. Seminar: Normal and standard normal distributions.

6th week:	of discrete random variables. Chi-squared test.
Lecture: 7. Introduction to hypothesis testing:	Epidemiologic investigations: relative risk and
null and alternative hypothesis, level of	odds ratio; Kaplan-Meier curve.
significance, type I and type II errors, one and	Seminar: Statistical tests: paired and unpaired t-
two-tailed tests. p value. z-test, one sample t-test.	test, F test.
Seminar: Sampling. Central limit theorem.	
Standard error of the mean.	9th week:
	Lecture: 10. Summary
7th week:	Seminar: Diagnostic methods with a statistical
Lecture: 8. Statistical tests: paired and unpaired	approach (specificity, sensitivity, positive- and
t-test, F test.	negative predictive value). ROC curve. Chi-
Seminar: Hypothesis testing. z-test, one sample	squared test. Epidemiologic investigations:
t-test.	relative risk and odds ratio; Kaplan-Meier curve.
8th week:	10th week:
Lecture: 9. Diagnostic methods with a statistical approach (specificity sensitivity positive- and	Seminar: Summary
negative predictive value). ROC curve. Analysis	

Requirements

1. Aim of the course:

The aim of the subject is to give an introduction to biostatistical methods, which can be used in different branches of medicine to solve biostatistical problems and to evaluate experimental results. In addition, providing a solid theoretical foundation the course will also introduce the students to the art and science of performing the simplest calculations.

2. Short description of the course:

Mathematical introduction to the biophysics and biostatistics course (functions, plotting measurements data, fitting, determination of slope, area under the curve, integration). Set theory. Probability, conditional probability, marginalization, Bayes' theorem. Descriptive statistics (determination of mean, median, mode, standard deviation from data set; construction of histograms, box and whisker plot). Discrete and continuous random variables; cumulative distribution function, density function. Binomial, Poisson, normal, and standard normal distribution. Sampling techniques and characterization of samples; biased and unbiased estimate, the central limit theorem. Hypothesis testing (z, t, F and chi2 tests). Clinical implications of conditional probability; diagnostic methods with a statistical approach, epidemiologic investigations (relative risk, odds ratio, Kaplan-Meier curve).

3. Type of the exam:

Colloquium (written). The final exam can be taken during the exam period of the second semester, but only for those students whose signing of the lecture book has already been accepted.

4. Requirements for the Biostatistics course:

4.1. Lectures, seminars:

Attendance to lectures is not mandatory but strongly recommended. At the end of three lectures students write an electronic test of up to 5 minutes (containing true-false questions, multiple choice questions, etc.), related to the topics of the given/actual lecture for earning bonus points. Seminars will be held for each group separately. During seminars the lecture topics will be

discussed in more detail and sample problems, calculations will be solved. Attendance to seminars is mandatory. During the semester on three seminars students write an electronic test of up to 15 minutes for earning bonus points. Bonus points earned by the electronic tests written both in the lectures and seminars are added to the test result of part B of the final exam and/or the grade-offering test (only to part B, see section 4.3). Maximum 10 bonus points can be earned. Students who complete the colloquium at the end of the second semester as part of the examination course will not be entitled to the bonus points, even if they have already completed the course and have a valid signature (see section 4.3).

4.2. Conditions for signing the lecture book:

Signing of the lecture book is denied if there are more than 2 absences from groupwise seminars. No certificates, including a medical certificate, are accepted for the absences. Making up for missed classes is not possible.

4.3. Grade-offering course test and final exam:

Students will write a grade-offering course test between weeks 12-13. The structure and the evaluation of the grade-offering test will be identical to that of the final exam. The grade-offering test does not count as an A chance exam, writing it is not mandatory. Writing the grade-offering test is only possible at the appointed time and there will not be any alternative appointments for writing it.

Usually, exams will be held once a week during the exam period. The exam is written.

Structure of the grade-offering test and the final exam:

•part A: minimum requirement questions and short calculations (descriptive statistics, binomial and Poisson distribution, normal distribution, etc.). Maximum score of part A is 40 points.

•part B: test questions (true or false questions, simple- and multiple-choice questions, fill-in questions etc.), calculations, graphs. Maximum score of part B is 100 points (without bonus points).

Evaluation of the grade-offering test and the final exam:

•If the score of part A is less than 75% (30 out of 40 points), the student fails the grade-offering test or the final exam. Bonus points earned by tests written in the lectures and seminars are not added to the result of part A.

•If a student passes part A (i.e., the score is larger than or equal to 75%) on an exam or the gradeoffering course test, the result is valid for his/her subsequent exam chances, i.e., part A does not have to be retaken. But the exemption from retaking part A of the exam is not valid for repeated courses or exam courses, that is the exemption from retaking part A is valid only in the 1st semester. •If the result of part A is less than 75%, part B is not evaluated.

•If the student passes part A, bonus points are added to the score of part B (max 100 points). Based on this final score (FS), that does not include the points earned in Part A, the following grades are offered:

 - FS<60</td>
 fail (1)

 - 60≤FS<70</td>
 pass (2)

 - 70≤FS<80</td>
 satisfactory (3)

 - 80≤FS<90</td>
 good (4)

 - 90≤FS
 excellent (5)

Evaluation of the grade-offering test and the final exam is identical.

A grade of 2 (pass) or better achieved on the grade-offering test is valid for the final exam.

The bonus points earned by tests written in the lectures and seminars and the exemption from retaking part A of the exam are only valid for the course in which they have been achieved, i.e., they are not valid for repeated courses or exam courses.

The grade of the grade-offering test or the final exam can be corrected only once, but in this case the final grade is determined by the result of the re-written test.

4.4. Rules for C chance exams:

Evaluation of C-chance exams is performed according to the following table:

	Result of part B is a fail	Result of part B is above the passing level
Result of the minimum requirement questions (part A) is a pass ($\geq 75\% = 30p$)	final exam grade: FAIL	exam grade is according to the result of the 'B' test (see 4.3)
Result of the minimum requirement questions (part A) is a fail, but at least 65% (≥ 26 p)	final exam grade: FAIL	oral exam
Result of the minimum requirement questions (part A) is less than 65% (<26 p)	'B' test not scored, final exam	grade: FAIL

5. Reading materials:

• Educational material published on the eLearning platform of the course can be downloaded as pdf format (elearning.med.unideb.hu – Department of Biophysics and Cell Biology/English Courses/1st semester/Biostatistics – FOBST04D1)

• Wayne W. Daniel: Biostatistics, A foundation for Analysis in the Health Sciences, John Wiley&Sons

6. Recommended reading material:

• Practice problems in biostatistics (editors: Zoltán Varga and Tibor G. Szántó). University of Debrecen, Department of Biophysics and Cell Biology, Division of Biomathematics, 2022, ISBN 978-963-490-459-5. It can be downloaded as pdf format (elearning.med.unideb.hu – Department of Biophysics and Cell Biology/English Courses/1st semester/Biostatistics – FOBST04D1)

7. Exemptions:

Requests for exemptions from the biostatistics course must be turned in to the Credit Transfer Committee. Such requests cannot be directly turned in to the Biomathematics Division or the Department of Biophysics and Cell Biology.

8. Information for repeaters:

For repeaters the attendance on seminars is not compulsory. Students repeating the course are subject to the same rules and requirements as those taking the course for the first time.

9. Rules for calculators:

Rules for calculator usage during course tests and the final examination. To ensure a fair evaluation, to avoid disturbances in the testing room, and to protect the security of the test material the following types of calculators are NOT permitted:

- calculators with built-in computer algebra systems (capable of simplifying algebraic expressions)

- pocket organizers, handheld or laptop computers

- any device capable of storing text. Calculators with a typewriter keypad (so-called QWERTY devices), electronic writing pads and pen-input devices are not allowed either. Calculators with letters on the keys (e.g., for entering hexadecimal numbers or variable names) are permitted if the keys are not arranged in QWERTY format.

- calculators or other devices capable of communicating with other devices
- calculators built into wireless phones
- calculators with paper tape or models that make noise

In general, students may use any four-function, scientific or graphing calculator except as specified above. Sharing calculators during tests is not allowed, and the test proctor will not provide a calculator.

Division of Biophysics

Subject: BIOPHYSICS LECTURE

Year, Semester: 1st year/1st semester Number of teaching hours: Lecture: 24 Seminar: 26

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1st week: Lecture: 1. Introduction. Electromagnetic waves, the properties of light (interference, photoelectric effect, photon theory). Matter waves. Thermal radiation. 2. Generation and absorption of X-ray. X-ray	biological applications of ultrasound. 8. Nuclear physics. Nuclear binding energy, radioactivity, law of radioactive decay, radioactive series. Seminar: Material related to lectures 5 and 6.
crystallography.	5th week:
Seminar: Introduction.	Lecture: 9. Features of nuclear radiation and its interaction with absorbing material. Detection of
2nd week:	radiation.
Lecture: 3. Molecular spectra, Jablonski diagram, fluorescence, fluorescence applications. 4. Sedimentation and electrophoresis. Mass spectrometry. Seminar: Material related to lectures 1 and 2.	 Radiation biophysics: target theory, direct and indirect action of radiation. Dosimetry. Biological effects of radiation. Seminar: Material related to lectures 7 and 8.
	6th week:
 3rd week: Lecture: 5. Lasers and their application in biology and medicine. 6. Optics, optical microscopy, electron microscopy. Seminar: Material related to lectures 3-4. 	Lecture: 11. Experimental, diagnostic and therapeutic application of isotopes. Accelerators. 12. Basic principles of nuclear magnetic resonance, NMR spectroscopy in biology and medicine. Seminar: Material related to lectures 9 and 10.
4th week: Lecture: 7. Physical properties of sound, ultrasound, Doppler effect. Medical and	7th week: Lecture: 13. Principles of tomographic methods. X-ray absorption CT. PET.

14. Magnetic resonance imaging (MRI). Gamma camera SPECT	11th week:
Seminar: Material related to lectures 11 and 12	Lecture: 21 The human ear Mechanism of
	hearing The Weber-Fechner law
8th week:	22 The human eve Photoreceptors The
Lecture: 15. Chemical potential. Brownian	molecular mechanism of vision.
motion Diffusion at the molecular level	Seminar: Material related to lectures 19 and 20
statistical interpretation. Fick's laws. Osmosis.	
16. The structure of biological membranes.	12th week:
Membrane transport.	Lecture: 23. Fluid mechanics, blood circulation.
Seminar: Material related to lectures 13 and 14.	24. Flow cytometry. Confocal laser scanning
	microscopy.
9th week:	Seminar: Material related to lectures 21 and 22.
Lecture: 17. Thermodynamic equilibrium	
potentials (Nernst, Donnan). Diffusion potential,	13th week:
Goldman-Hodgkin-Katz equation.	Lecture: 25. Biophysics of respiration (not
18. Ion channels (gating, selectivity), the "patch	compulsory).
clamp" technique.	26. Biomechanics (not compulsory).
Seminar: Material related to lectures 15 and 16.	Seminar: Material related to lectures 23 and 24.
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Inthe week:	14th week:
Lecture: 19. Resting potential, action potential,	Lecture: 27. Modern microscopic techniques
and electrical excitability. Measurement of	(atomic force microscopy, super resolution
membrane potential.	microscopy) (not compulsory).
20. The physical background of ECG and EEG.	28. Research in the Institute (not compulsory).
Seminar: Material related to lectures 17 and 18	Seminar: Material related to lectures 25 and 26.

Requirements

ECTS Credit: 3 Department: Department of Biophysics and Cell Biology, Biophysics Division Semester recommended to take: 1st year, 1st semester. Semester for the regular course: 1st semester Prerequisites of the course: No prerequisites. Course coordinator: Prof. Dr. Péter Nagy Study advisor: Dr. Tamás Kovács Teaching staff: Prof. Dr. Péter Nagy and the employees of the Department Educational manager: Dr. Enikő Nizsalóczki E-mail: biophysedu@med.unideb.hu Office hours: The location and time of office hours are posted on the website.

Aim of the course:

The course is aimed at providing the necessary theoretical background for the understanding of the physical principles applied in biology and medicine, and for the description of the physical processes in living organisms. The course introduces students to biophysical techniques facilitating (1) the understanding of the pathomechanism of diseases; (2) understanding the physical background of diagnostic tools (e.g. ECG, MRI, PET) and therapeutic approaches; (3) development of novel diagnostic and therapeutic tools: (4) understanding the functioning of cells, tissues and

CHAPTER 16

organs at the molecular level in order to provide a solid background for Physiology, Clinical Physiology and Radiology.

Short description of the course:

Students will be introduced to the quantitative description of the physical basis of selected topics in biology and medicine.

Structure of the course:

Introduction to natural sciences (e.g. basic principles of atomic and nuclear physics) Medical physics (e.g. physical principles of diagnostic and therapeutic procedures) Molecular biophysics (e.g. diffusion, membrane biophysics) Organ biophysics (e.g. vision, hearing, circulation)

Compulsory reading:

Educational material (lecture slides, textual explanations of lectures ("booklet") and exercises) uploaded to the educational website (e-Learning site) of the Department;
Medical Biophysics textbook (3rd revised edition, Editors: S. Damjanovich, J. Fidy, J. Szöllősi, Medicina, Budapest, 2019, ISBN: 978-963-226-127-0).

Web page of the Department: http://biophys.unideb.hu/en and the e-Learning web page of the subject

Exam: Written exam during the exam period after the 1st semester of the academic year. Students who attended the course and were granted with signature in a previous semester can take the exam in the 2nd semester as well, in the frame of the exam course (see Requirements, point 9).

Requirements

1. Lectures: Attendance to lectures is emphatically recommended. All material covered in lectures is an integral part of the subject, and therefore included in the self-control tests and the final exam. Some new concepts and ideas are discussed in the lectures only and are not present in the textbook.

2. Seminars: Attendance to seminars is compulsory, however, a student may miss maximum 7 (seven) seminars. Students may attend the seminars according to their group assignment only. In the seminars, students are encouraged to ask questions related to the topic of the lectures discussed (see timetable of lectures and seminars). Students can earn bonus points on the seminars, counted into the result of the final exam, in the following two ways:

• Students may sign up for one short interactive presentation during the semester about the topic of the seminar (5-10 minutes; max. 2 students/seminar). The talks are graded on a scale of 0-3. This grade counts toward the bonus points earned during the semester. One student may sign up for one presentation. The grade of the presentation cannot be improved. The topic list, the requirements and the criteria for evaluation are posted on the web page of the Department on the first week of the semester.

• On each seminar (except for the 1st one) students will write a short electronic test about the topic of the seminar. Taking this electronic test is only possible with the installed tablets available in the seminar room, i.e., students cannot take the test with their own devices. The test on a certain week can only be taken once. During the semester, 13 such tests will be written, and the average of the best 10 quizzes will be calculated (Qave), based on which students will be given bonus points
according to the following:

- $6p Qave \ge 95\%$
- $5p 95\% > Qave \ge 90\%$
- $\bullet~4p-90\% > Qave \geq 80\%$
- $3p 80\% > Qave \ge 70\%$
- $2p 70\% > Qave \ge 60\%$
- $1p 60\% > Qave \ge 40\%$

If a student makes up for a missed seminar with another group, taking the seminar quiz is not guaranteed, it is subject to the availability of tablets installed in the seminar room.

3. Exemptions: Requests for exemptions must be turned in to the Educational Office. The Department of Biophysics and Cell Biology does not accept such applications.

4. Conditions for the signature:

- 7 or fewer absences from seminars
- Biophysics Practical course is completed successfully (i.e. the student passed the course).

5. Self-control tests: There will be 2 self-control tests (SCTs) during the semester. Topics and dates of the SCTs are provided on the departmental web site in the first week of the semester. None of the SCTs is obligatory. The type of the questions will be similar to those on the final exam (FE). The SCTs will include five minimum requirement questions as well corresponding to the SCT topics plus the physics background questions. Each SCT will be graded (0-100 %, 0% for absence) and the results of the two SCTs will be averaged (Xave). The missed test is counted as 0% in the calculation of the average. Missed SCTs cannot be made up at a later time.

Based on the written self-control tests students may obtain the following bonus points and exceptions from the final exam:

(i) if Xave is at least 66 points, the student is exempted from part I of the Biophysics final exam (minimum requirement questions, see point 6);

(ii) according to Xave students may earn SCT bonus points counted to the FE result are as follows: Xave – SCT bonus points

0-34.99 – 0p 35-49.99 – 5p 50-54.99 – 6p 55-60.99 – 7p 61-65.99 – 8p 66-72.99 – 9p 73-78.99 – 10p 79 and above – 11p 85 and above – see point iii below

(iii) if Xave is at least 85, the student is eligible for a grade-offering oral exam conducted at the end of the semester, where – based on his/her performance – grades 4 or 5 can be offered. Topics of the oral exam only include the lectures that were not included in the two SCTs. If the student does not show up in the oral exam or his/her performance is not sufficient on the grade-offering exam, no grades are offered and the student should take the regular written FE during the exam period.

6. Final Examination (FE): Students have three chances (A, B, C) for passing the Biophysics final

exam in the winter exam period after the semester in which the course was taken (or in the summer exam period for students registered for the exam course, see point 9).

The FE consists of 2 parts:

Part I – Minimum requirement questions. It consists of a written quiz of 20 minimum requirement questions. One must pass this part to have the written test (part II) evaluated. Minimum requirement questions and the answers thereto are provided on the website of the Department in the 1st week of the semester. 16 out of 20 have to be answered correctly in order to pass this part. Exemption from this part of the FE is discussed in point 5. This part is evaluated as pass or fail, once passed it is valid for further exam chances (B- or C-chance) of the FE. The result of the minimum requirement questions is not counted into the result of the written test (part II of the FE).

Part II – Written exam. It consists of essays, fill-in-the-missing-phrase type questions, relation analysis and various simple test and multiple-choice questions etc. Part II will only be evaluated if part I is passed. The total bonus points for the semester are calculated in the following way:

- T: SCT bonus points (0-11)
- Q: bonus points based on the average of the 10 best seminar quizzes (0-6)
- P: seminar presentation bonus points (0-3)

The total number of bonus points (T+Q+P) will be added to the score of the written exam ONLY IF a minimum score of 45% is achieved in part II of the FE. Additional exemptions are in point 5.

Evaluation of the FE: Grade is calculated based on the sum of written exam score + bonus points (T+Q+P); see conditions for the bonus points above)

Gradefail (1)0 - 54.99pass (2)55 - 64.99satisfactory (3)65 - 74.99good (4)75 - 84.99excellent (5)85 -

7. Rules for the usage of calculators during self-control tests and the final examination: In order to ensure a fair evaluation, to avoid disturbances in the testing room, and to protect the security of the test material the following types of calculators are NOT permitted:

- calculators with built-in computer algebra systems (capable of simplifying algebraic expressions)
- pocket organizers, handheld or laptop computers

- any device capable of storing text. Calculators with a typewriter keypad (so-called QWERTY devices), electronic writing pads and pen-input devices are not allowed either. Calculators with letters on the keys (e.g. for entering hexadecimal numbers or variable names) are permitted as long as the keys are not arranged in QWERTY format.

- calculators or other devices capable of communicating with other devices

- calculators built into wireless phones

- calculators with paper tape or models that make noise

In general, students may use any four-function, scientific or graphing calculator except as specified above. However, we reserve the right to prohibit the usage of ANY type of calculator, computer and data storage and retrieval device during some tests if no calculations or only very simple calculations are necessary. Sharing calculators during tests is not allowed, and the test proctor will not provide a calculator.

8. Information for repeaters:

- attendance to seminars is compulsory (see point 2)

- all exemptions and bonuses obtained during the failed semester (self-control tests, exemption from minimals) are lost

- according to the relevant rules (point 5) self-control tests may be written and exemptions may be obtained again

- in the case of schedule collisions with 2nd year classes we ask students to choose the 2nd year groups such that conflicts with the 1st year subjects can be avoided.

9. Information for Exam Course students:

Only those students may register for the exam course:

• who attended the Biophysics Lecture course in a previous semester and were granted with signature (for conditions of the signature, see point 4);

• students who took Biophysics before the academic year of 2018/19: those students who completed the practical part of the unified Biophysics course successfully (i.e. completed all the labs and passed the practical exam).

Exam topics: all the material covered in the semester immediately preceding the semester in which the exam course is taken.

Bonus points collected for SCTs, seminar quizzes and seminar presentations are valid for the exam course taken in the same academic year. If an exemption from writing part I of the Biophysics final exam (minimum requirement questions) has been obtained based on the SCT averages, this exemption is also valid for the exam course taken in the same academic year. Every other student must write the minimum requirement questions, even those who passed this part of the exam in a previous exam period. If a student passes the minimum requirement questions in the exam course, he/she will be exempted from taking this part again in the same exam period. Otherwise, the structure of the final exam and its evaluation are the same as described in point 6. Rules for calculator usage, described in point 7, also apply.

10. Rules for C chance exams

Evaluation of C chance exams is conducted according to the following table:

	If result of part II is a fail	If result of part II is above the passing level
If result of the minimum requirement questions is a pass (≥ 16)	final exam grade: FAIL	exam grade is according to the result of part II
If result of the minimum requirement questions is a fail, but at least 12	final exam grade: FAIL	oral exam
If result of the minimum requirement questions is less than 12	Part II is not scored, final exam	grade: FAIL

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Subject: BIOPHYSICS PRACTICAL

8th week:
Practical: Optical Measurements.
9th week:
Practical: Computer Tomography Modelling
and Blood Pressure Measurement.
10th week:
Practical: Computer Tomography Modelling
and Blood Pressure Measurement.
13th week:
Practical: Spare lab.
-
14th week:
Practical: Lab exam (only for students where
the final score is below 4.0, see Requirements
7/3.)
8 E 9 E a 1 E a 1 E 1 E 5

Requirements

Department: Department of Biophysics and Cell Biology, Division of Biophysics Semester recommended for taking the subject: 1st year, 1st semester Semester for the regular course: 1st Prerequisites of the course: No prerequisites Course coordinator: Dr. Andrea Dóczy-Bodnár Coordinator of Practicals: Dr. Zsolt Fazekas Educational manager: Dr. Enikő Nizsalóczki (e-mail: biophysedu@med.unideb.hu)

1. Aims of the course: Demonstration of some of the methods discussed in the Biophysics theoretical course, performing some simple experiments relevant to these topics, and introduction to designing, performing and evaluating experiments.

2. Structure of the course:

- Introduction to the practicals

- Completion of labs

3. Compulsory reading: material posted on the eLearning page of the course.

4. Recommended reading: -Medical Biophysics (3rd edition, Editors: S. Damjanovich, J. Fidy, J. Szöllősi, Medicina, Budapest, 2019, ISBN: 978-963-226-127-0) -Biophysics laboratory manual

5. Educational website: biophys.med.unideb.hu and the eLearning page of the course (on https://elearning.med.unideb.hu/).

6. Evaluation: Practical grades on a five-point scale.

7. Requirements:

7/1. Attendance to labs and recording all results in a separate logbook are compulsory. Students may attend the practicals according to their group assignment only. Students write a short quiz before each lab topic. The quiz is composed of true/false, multiple choice and simple calculation problems. At least 2.5 of 5 points (Quiz Grade, QG) must be earned in this test in order to be eligible for doing the lab. Ineligible students are not allowed to attend the given lab according to their timetable. The lab will be considered as a missed one, and the student must make it up (after passing the test) according to 7/4.

7/2. Evaluation of labs: At the end of each lab the teacher grades the performance of the student on a scale between 0-5 (lab grade, LG). Getting 0 means that the lab is not accepted and it has to be repeated. Details of how to write lab logbooks and of the evaluation system can be found on the eLearning page of the course.

7/3. Determination of the end-semester practical grade (PG): Students will be graded on a five-point scale based on the score of the written quizzes (QG) and the lab grades (LG). At the end of the semester both the scores of the written quizzes and those of the lab grades will be summed and averaged. The final practical grade will be determined as follows:

QG_average+LG_average	End-semester practical grade (PG)
4.00-5.49	pass (2)
5.50-6.99	satisfactory (3)
7.00-8.49	good (4)
8.50-10.00	excellent (5)

Students, who completed all the labs (i.e. LG>0 for all labs) but their QG_average+LG_average score is not enough (i.e. less than 4.0) to pass should take a lab exam on the 14th week. The lab exam covers the materials of all labs and evaluated on a pass-fail basis (so students passing the lab exam will finish the course with PG=2, otherwise fail). It is not possible to repeat or improve the practical exam.

If the labs are not fully completed by the end of week 13 (i.e. during the regular and spare labs), the signature for the course is denied. If the course is not completed successfully (denied signature or failed lab exam) the signature for the Biophysics Lecture course is denied as well.

7/4. Making up missed labs: Maximum two labs (missed for any reasons) can be made up during the week assigned to spare practicals. Students must register for the make-up labs on the eLearning page of the course. Only one occasion will be available for making up a certain lab. A given lab can be repeated/made up only once.

8. Information for repeaters:

Repeaters should attend and must complete all the labs. Points 7/1 - 7/4 apply to repeaters completely.

9. Exam course: No exam course is available.

Further information is available on the web page of the Department of Biophysics and Cell Biology (biophys.med.unideb.hu) and on the e-Learning page of the course. The above information is subject to change if unforeseen circumstances arise. These changes will be posted on the website.

Subject: ORAL ANATOMY, HISTOLOGY AND EMBRYOLOGY II. LECTURE

Year, Semester: 1st year/2nd semester Number of teaching hours: Lecture: **36** Seminar: **28**

1st week: 6th week: Lecture: 1. Introduction to Neuroanatomy. Lecture: 1. Anatomical landmarks on the head Meninges. 2. Histology of blood vessels. and neck. Divisions of the neck. Cervical fasciae. Anatomy of the vascular system. 3. Spinal cord. 2. Somatic and autonomic innervation of the Brain stem head and neck. Cervical plexus. 3. Blood supply Seminar: Blood vessels and lymphatics of the head and neck. The lymph node. Seminar: Skin. 2nd week: Lecture: 1. Cranial nerves. 2. Cerebellum. 3. Diencephalon. Seminar: Nervous tissue (revision). Ganglia 7th week: (dorsal root ganglion, sympathetic ganglion). Lecture: 1. Anatomy of the salivary glands. 2. Regional anatomy of the infratemporal and pterygopalatine fossae. 3. Regional anatomy of 3rd week: the oral cavity. Structure of the oral diaphragm Lecture: 1. Telencephalon. 2. Blood supply to the central nervous system. Circulation of the and the palate. Masticatory muscles, mastication. cerebrospinal fluid. Ventricles. 3. Anatomy of the Seminar: Histology consultation. ear (external, middle, inner ear). Seminar: Spinal cord. 8th week: Lecture: 1. Innervation, blood supply and 4th week: lymphatics of the oral structures (except the Lecture: 1. Orbit and eyeball. 2 Visual and teeth). 2. Oral mucosa. 3. Anatomy of teeth and acoustic pathways. 3. Vestibular system. gingiva Movements of the eye (extraocular muscles). Seminar: Lip, tongue, salivary glands. Seminar: Cerebellum. Cerebrum. 9th week: 5th week: Lecture: 1. Histology of teeth. 2. Development Lecture: 1. Peripheral autonomous nervous of teeth. 3. Structure of the pharynx. Spaces system. 2. Development of the nervous system around the pharynx. Tonsils. and the organs of senses. 3. Histology of skin Seminar: Palate. Oral mucosal linings. Seminar: Histology: Inner ear. Eyeball. 10th week: Lecture: 1. Larynx. 2. Regional anatomy of the

nasal cavity. Paranasal sinuses. 3. Development of the pharyngeal gut. Pharyngeal pouches and	12th week: Lecture: 1. Somatosensory systems I. 2.
clefts. Development of the tongue and the thyroid gland.	Somatosensory systems II. 3. Olfactory and taste pathways. The limbic system.
Seminar: Teeth. Structures of the developing foetal head.	Seminar: Lymph node. Tonsils.
	13th week:
11th week:	Lecture: Spare lecture
Lecture: 1. Development of the face, nasal cavity, and oral cavity. 2. Radiographic anatomy	Seminar: Larynx. Epiglottis.
of the head and neck. 3. Somatomotor systems	14th week:
Seminar: Periodontium Tooth germs.	Lecture: -
	Seminar: Histology: Histology and embryology consultation.

Requirements

DENT Oral Anatomy, Histology and Embryology - II- Lecture

Requirements

The topics for lectures and seminars are listed in the Bulletin, any deviations and changes will be published on the Department's e-learning platform by the end of the first week of the semester.

Attendance at all seminars is compulsory in accordance with the Rules and Regulations of the UD, and absences will be noted by the tutor. The director of the institute may refuse to sign the subject if the number of absences from seminars in a semester exceeds three, even if certified. Absences from seminars may not be made up in another group due to the high number of students.

Rules for examinations

There are no self-control tests during the semester. At the end of the semester, the subject is concluded by an End Semester Examination (ESE) consisting of one written (MOODLE, embryology) and two oral parts (histology and anatomy). The ESE will cover the material from the lectures, exercises and seminars of the semester, as well as the official textbooks. The first exam will be considered an "A" exam.

1. The ESE starts with the *written Embryology test*. If the test is passed, the student proceeds to the dissection or histology stations. Failure of the test is the end of the exam. The written test is graded:

 $\begin{array}{rll} 0 - 59\% = & 1 \mbox{ (fail)} \\ 60 - 69\% = & 2 \mbox{ (pass)} \\ 70 - 79\% = & 3 \mbox{ (satisfactory)} \\ 80 - 89\% = & 4 \mbox{ (good)} \\ 90 - 100\% = & 5 \mbox{ (excellent)} \end{array}$

If you fail the written exam in Embryology in the "C"- chance exam, you will also be given an oral Embryology topic at the beginning of the Histology part of the exam. The exam can only be continued if this is passed.

2. After the common written part, students continue the exam with an oral histology (histology

practice room) or *oral anatomy (dissection room)* part. For both of these two additional stations, students draw one topic each, which contains two questions (head and neck, neuroanatomy) for the anatomy part and two sections (corresponding histology material, see Bulletin) for the histology part.

For both the anatomy topic and the histology topic, the student will receive 1-1 mark, but the student must achieve a "pass" in both anatomy questions / sections.

Failure in either part of the examination will result in a retake of the entire examination.

Grade= (Anatomy mark + Histology mark + Embryology mark)/3 Anatomy mark = one mark in the oral examination Histology mark = one mark in the oral examination Embryology mark = one mark in the written exam

Correction of the Final Grade

If the student wishes to improve his/her grade in the examination, he/she must retake all parts of the examination. The previous mark will be cancelled.

Applying for and failing an examination

Rules of the Neptun system apply.

Conditions

To sit the examination in this subject, you must have successfully completed the "Oral Anatomy, Histology and Embryology – II – Practical" course.

Subject: ORAL ANATOMY, HISTOLOGY AND EMBRYOLOGY II. PRACTICAL

Year, Semester: 1st year/2nd semester Number of teaching hours: Practical: **56**

1st week:

Practical: Anatomy of the skull – revision. 1A. Revision of the anatomy of the skull: highlighting cranial exit sites of cranial nerves and cranial structures with relevance to neuroanatomy. Introduction to the anatomy of the nervous system. 1B. Spinal cord.

2nd week:

Practical: Anatomy of the central nervous system. Dissection of the brain.

2A. Parts and external anatomy of the brainstem. 4th ventricle. 2B. Identification of cranial nerves (with brainstem exit sites). Surface projections of cranial nerve nuclei. Cerebellum.

3rd week:

Practical: Anatomy of the central nervous system. Dissection of the brain. 3A. Diencephalon. 3rd ventricle. 3B. Telencephalon. Lateral ventricle.

4th week:

Practical: Anatomy of the central nervous system. Dissection of the brain.
4A. Meninges. Circulation of cerebrospinal fluid, overview of the ventricular system.
Subarachnoideal cisterns. Demonstration of dural and cranial exit sites of cranial nerves on plastinated *in situ* brain specimens. 4B. Blood supply of the central nervous system. Coronal sections.

5th week:

Practical: Anatomy of sensory organs. CONSULTATION.

5A. Overview of the eyeball and the ear on plastic models. 5B. CONSULTATION: revision of the central nervous system and sense organs.

6th week:

Practical: CONSULTATION. Anatomy of the head and neck.

6A. Palpable sites and surface landmarks on the head and neck. Demonstration of facial regions. Overview of cutaneous innervation of the face. Exit sites of trigeminal nerve terminal branches (without further details on the trigeminal nerve). Muscles of mastication and facial expression. Tasks of dissection during the session: Removal of facial skin (additionally, partial removal of the skin from the head). Dissection of superficial facial structures (superficial vessels, cutaneous nerves). Dissection of facial expression and superficial masticatory muscles. 6B. Parotideomasseteric region, parotid gland. Branches of facial nerve given inside and outside of the facial canal. Tasks of dissection during the session: Removal of the parotid on one side of the head and dissection of the parotid bed. Demonstration of structures passing through the parotid.

7th week:

Practical: Anatomy of the head and neck. 7A. Revision: dissection of the head and the face. 7B. Divisions of the neck, cervical fasciae. Classification of cervical muscles, identification of muscular triangles of the neck. Supraclavicular trigone. Cervical plexus. *Tasks of dissection during the session:* Removal of cervical skin. Dissection of superficial structures, fasciae, and muscles of the neck. Dissection of the supraclavicular trigone and cervical plexus branches.

8th week:

Practical: Anatomy of the head and neck. 8A. Carotid and submandibular trigones. External carotid artery. Overview of the venous and lymphatic drainage of the head and neck. Vagus nerve. *Tasks of dissection during the* *session:* Dissection of the carotid and submandibular trigones. Dissection of the carotid sheath, identification of external carotid artery and vagus nerve branches. Luxation of the sternoclavicular joints and partial removal of the clavicles. 8B. Middle cervical regions. Thyroid gland. Scalenotracheal fossa. Sympathetic trunk. *Tasks of dissection during the session:* Dissection of the middle cervical region and the scalenotracheal fossa. Identification of subclavian artery branches.

9th week:

Practical: Anatomy of the head and neck. 9A. Deep regions of the head I.: Revision of the temporomandibular joint, infratemporal fossa. Overview of the maxillary artery and mandibular nerve. Region of the mandibular ramus. Tasks of dissection during the session: Removal of the ramus of the mandible on one side of the head, identification of deep masticatory muscles. Dissection of the infratemporal fossa. 9B. Deep regions of the head II.: Pterygopalatine fossa. Overview of the terminal branches of the maxillary artery and the ophthalmic and maxillary nerves. Tasks of dissection during the session: Dissection of maxillary artery and trigeminal nerve branches. Continued dissection of the infratemporal fossa.

10th week:

Practical: Anatomy of the head and neck. 10A. Oral cavity I.: Division of the oral cavity. Oral vestibule, blood supply and innervation of the buccal and labial regions, identification of the opening of the parotid duct. Types, parts, and surfaces of teeth. Blood supply, innervation, and lymphatic drainage of the teeth and gingiva. Parts, mucosal papillae, blood supply, innervation, and lymphatic drainage of the tongue. Overview of glossopharyngeal and hypoglossal nerves. 10B. Oral cavity II.: Oral diaphragm, boundaries, and components of the lateral lingual groove. Identification of the openings of the submandibular and sublingual ducts. Summary of salivary gland innervation. Sublingual region. Hard and soft palate. Faucial (oropharyngeal) isthmus.

11th week:

Practical: Anatomy of the head and neck. 11A. Revision. 11B. Position, wall, lumen, and connections of the pharynx. Location of tonsils, examination of the tonsillar fossa. Glossopharyngeal and accessory nerves. Spaces around the pharynx: para- and retropharyngeal spaces. *Tasks of dissection during the session:* After continued dissection of the infratemporal fossa, demonstration of the parapharyngeal space and preparation of its contents. Identification of the retropharyngeal space on mediansagittally transsected head specimen.

12th week:

Practical: Anatomy of the head and neck. 12A. Cartilages, ligaments, and muscles of the larynx. Demonstration of laryngeal mechanisms on plastic model. Demonstration of the lumen, the mucosa, and fibro-elastic components of the larynx. 12B.Revision of the bony nasal cavity. Overview of nasal cartilages. Examination of the nasal cavity in specimen: division and nasal mucosa; identification of nasal conchae and meatuses. Demonstration of paranasal sinuses and their connections to the nasal cavity in specimen.

13th week:

Practical: Anatomy of the head and neck. CONSULATATION.

13A. Overview of the nuchal region. *Tasks of dissection during the session:* Removal of skin from the back of the head and neck, dissection of the nuchal region. Completion of the dissection of the head and neck. 13B. CONSULTATION: general revision

14th week:

Practical: End Semester Exam (ESE) 14A. PRACTICAL EXAM 14B.

Requirements

DENT Oral Anatomy, Histology and Embryology - II - Practical

Requirements

The topics of the practicals are described in the buletin. According to the Rules and Regulations of the UD attendance at the practicals is compulsory and absences

will be noted by the tutor. The head of the Department may refuse to sign the subject if the number of absences from the practical course exceeds three in a semester. Due to the high number of students, missed practicals cannot be made up with another group.

Rules for the practical examination

The practical examination will be oral and will take place in the dissecting room during the 14th week at the time of the practicals. The aim of the examination is to IDENTIFY macroscopic anatomical structures. A list of structures will be published by the Department, on its e-learning platform, during the first week of the semester.

The practical exam is passed with a 60% or better.

A successful Practical Exam will be converted into a grade as follows:

- 0 59% = 1 (fail) 60 - 69% = 2 (pass)
- 70 79% = 3 (satisfactory)
- $80 89\% = 4 \pmod{900}$
- 90 100% = 5 (excellent)

A failed Practical Exam may be repeated once during the semester and once during the examination period. The grade of the Practical Exam cannot be improved, only students who have not achieved 60% or could not show up due to medical reasons (proven with a doctor's note) on the previous occasion are allowed to retake the Practical Exam.

The Department will publish details of the Practical Examination on its e-learning platform.

Department of Biomaterials and Prosthetic Dentistry

Subject: INTRODUCTION TO DENTISTRY

Year, Semester: 1st year/2nd semester Number of teaching hours: Lecture: **5** Practical: **5**

1st week: Lecture: Introduction to Dentistry I. (Pediatric Dentistry and Orthodontics)	3rd week: Lecture: Introduction to Dentistry III. (Dento- alveolar Surgery)
2nd week:	4th week:
Lecture: Introduction to Dentistry II.	Lecture: Introduction to Dentistry IV.
(Periodontology)	(Prosthodontics)

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5th week: Lecture: Introduction to Dentistry V. (Restorative Dentistry and Endodontics)	8th week: Practical: Introduction to Dentistry III. (Dento- alveolar Surgery)
6th week: Practical: Introduction to Dentistry I. (Pediatric Dentistry and Orthodontics)	9th week: Practical: Introduction to Dentistry IV. (Prosthodontics)
7th week: Practical: Introduction to Dentistry II. (Periodontology)	10th week: Practical: Introduction to Dentistry V. (Restorative Dentistry and Endodontics)

Requirements

Course objectives:

The aim of the course is to learn the basics of dentistry, the various specialties in theory and practice.

Brief course description:

During the course, within the frame of 5 theoretical and 5 practical hours, students get to know the basics of dentistry on the fields of: dento-alveolar surgery / periodontology / conservative dentistry and endodontics / prosthodontics / pediatric dentistry and orthodontics.

Conditions for obtaining signature:

Students must participate in 5 lectures and 5 practices specified in the syllabus.

 \cdot There is no exemption from attending the 5 practices, the ratio of missed practices may not exceed 20% of all practices, (1 practice). The absence must be certified in a credible way. Certifications should be given to the leader of the practice.

•The lectures and the practices start at the time given in the syllabus.

Assessment: AW 5 grade

Students will be examined on the acquired knowledge in the form of an electronic written test. If the student does not write the test, he will get a fail (1) grade. The practical grade may be improved during the examination period.

Grades will be calculated as follows:

Grade
fail (1)
pass (2)
satisfactory (3)
good (4)
excellent (5)

Department of Emergency Medicine

Number of teaching hours: Lecture: 6 Practical: 15 1st week: 7th week: Lecture: The concept of first aid, first aid levels. Practical: Practising ventilation without Time Factor. The role of the scene. The usage of equipment. paramedics, rules of calling ambulance. ABCDE approach. 8th week: Practical: Practising chest compression. 2nd week: Lecture: Concept and recognition of 9th week: unconsciousnes. Symptoms of airway Practical: Cardiac arrest care simulation obstruction. Airway management. Recovery (BLS+AED) position. 10th week: 3rd week: **Practical:** Practical exam (BLS+AED) Lecture: Organizational tasks at the site of the resuscitation. Prevention and solution of the 11th week: complications of resuscitation. BLS. Effect, **Practical:** General rules of wound care. result, success in CPR. AED. Presenting wound dressing and immobilization devices. Sterility. Bleeding control. Arterial pressure points. Arterial and venous pressure 4th week: Lecture: Death as a process. Reversibility. bandage. Assessment of vital signs. First aid for burns. Shock. 12th week: **Practical:** 5th week: First aid for soft tissue contusion, distortion, Lecture: Burning; first aid in burning diseases; dislocation and bone fracture. Immobilization devices: Schanz cervical collar, shock. Intoxications. Ways of poison can enter the body. Desault's bandage, hand and finger fracture First fixation. Triangular bandage. Kramer-, pneumatic air splint device. aid of poisoning with corrosive and non-Bone fracture care by body regions. corrosive substances. Typical symptoms and recognition of Complex trauma care. common poisons. 13th week: 6th week: **Practical:** Practical: Checking breathing and circulation. Test Ventilation without equipment. ABCDE approach. **Self Control Test**

Requirements

Condition of signing the Lecture book:

Subject: FIRST AID AND REANIMATION

Year, Semester: 1st year/2nd semester

Attendance at practices is compulsory. The tutor may refuse to sign the Lecture book if the student

is absent from the practicals more than twice in a semester. Missed practicals should be made up after consultation with the tutor. Facilities for a maximum of 2 make-up practicals are available at the Simulation Center in Debrecen. The current knowledge of students will be tested twice in each semester driving a written test.

Department of Foreign Languages

Subject: HUNGARIAN LANGUAGE I/2.

Year, Semester: 1st year/2nd semester Number of teaching hours: Practical: **28**

1st week:	8th week:
Practical: Orientáció, 1. Emlékszel?	Practical: 7. A család
<i>,</i>	9th week:
2nd week:	Practical: 8. Zumbázni szeretnék!
Practical: 2. Napirend	
1	10th week:
3rd week:	Practical: 9. Mit csináltál tegnap?
Practical: 3. Melvik a jobb?	
	11th week:
4th week:	Practical: 10. Hol nvaraltatok?
Practical: 4. A testem	
	12th week:
5th week:	Practical: 11. Vizsga lesz!
Practical: 5. Beteg vagvok	13th week:
	Practical: Revision End-term test (written)
6th week:	Self Control Test (written test)
Practical: 6. Ismétlés a tudás anyia	
	14th week:
7th week:	Practical: End-term test (oral)
Practical: Revision Mid-term test (written)	Self Control Test (oral test)
Self Control Test (written test)	

Requirements

Requirements of the course:

Attendance

Attending language classes is **compulsory**. If a student is late it is considered as an absence. Students can miss only 10 percent of the classes that is maximum *2 occasions*. In case of more than 2 absences, the signature may be refused. Making up a missed lesson with another group is not allowed.

The teacher evaluates active participation in each class. Students are not supposed to share coursebooks in the classes therefore if they fail to bring the coursebook to the class for the second time the attendance is refused.

Testing, evaluation

During the semester students must sit for **two written language tests**, and **an oral exam.** If a student is late for the test, he/she is not allowed to take it.

A further minimum requirement is the knowledge of 200 words per semester divided into 10 word quizzes. There are five word quizzes before and another five after the midterm test. If a student fails or misses any word quizzes he / she cannot take the written test. A word quiz can be postponed by a week and students can take it only with their own teacher. Students can get bonus points (5-5%) by taking two extra quizzes containing 20 sentences each, before the midterm and end term tests. The sentences are taken from the units of the coursebook. Missed word quizzes cannot be made up for on the day of the written test.

The oral exam consists of a role-play from a list of situations covered in the coursebook. If students fail the oral exam, they fail the whole course. The results of the written tests and the oral exam are combined and averaged.

Based on the final score the grades are given as follows.

Final score	Grade
0-59%	fail (1)
60-69%	pass (2)
70-79%	satisfactory (3)
80-89%	good (4)
90-100%	excellent (5)
TC 1 C 1	0.1

If the final score of the written tests is below 60, the student can take a written remedial exam once covering the material of the failed part. The remedial test must be done before wee 14. The oral test can only be taken if the written tests are successful.

Coursebook: Győrffy, Erzsébet - Mezei, Zsuzsa Lívia: Magyarules

Assignments, audio files, oral exam topics and vocabulary minimum lists can be found on the elearning site of the Department of Foreign Languages (www.elearning.med.unideb.hu).

Department of Medical Chemistry

Seminar: Lecture topics of the week

Subject: MEDICAL CHEMISTRY II. LECTURE

Year, Semester: 1st year/2nd semester Number of teaching hours: Lecture: **25** Seminar: **28**

1 st week:	Proteins (function and regulation)
Lecture:	Proteins (folding, targeting)
Amino acids, peptides	Seminar: Lecture topics of the week
Proteins (structure, classification)	
Seminar: Lecture topics of the week	3 rd week:
-	Lecture:
2 nd week:	Protein modifications in the cell I-II

Lecture:

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	Seminar: Lecture topics of the week
4 th week:	
Lecture:	10 th week:
Protein analysis I-II	Lecture:
Seminar: Lecture topics of the week	Biomolecular chemistry in medicine
	Co-ordination chemistry
5 th week:	Seminar: Lecture topics of the week
Lecture:	
Carbohydrates I-II	11 th week:
Seminar: Lecture topics of the week	Lecture:
	Biological functions of alkali metal and alkaline
6 th week:	earth metal cations
Lecture:	The bioinorganic chemistry of iron
Carbohydrates (roles in biology)	Seminar: Lecture topics of the week
Carbohydrate analysis	
Seminar: Lecture topics of the week	12 th week:
	Lecture:
7 th week:	The bioinorganic chemistry of Cu and Zn
Lecture:	The bioinorganic chemistry of nonmetals:
Lipids I. (structure, classification)	oxygen
Lipids II. (biological roles, lipid analysis)	Seminar: Lecture topics of the week
Seminar: Lecture topics of the week	
	13th week:
8 th week:	Lecture: Sominon The high property of
Lecture:	semmar: The bioinorganic chemistry of
Nucleosides, nucleotides	Gasotransmitters (NO CO H S)
Nucleic acids (DNA, RNA)	(10, 00, 11)
Seminar: Lecture topics of the week	
41	14th week:
9 th week:	Lecture: Information on the final exam.
Lecture:	Chemistry
DNA: mutations and repair	Sominar: Toxic metals and nonmotals
Nucleic acid analysis	Seminar. TOXIC metals and nonmetals

Requirements

The program consists of lectures and seminars. Attendance at lectures is not compulsory but essential for the successful completion of the course. Attendance at seminars is compulsory and recorded. Maximum 3 excused seminar absences are allowed.

Prerequisites for the Medical Chemistry Lecture II registration: Medical Chemistry Practical I and Medical Chemistry Lecture I.

Prerequisites for the Medical Chemistry Lecture II signature and exam registration: successful completion of the 'Medical Chemistry Practical II' subject (with passing grade or better). There is one control test opportunity (on bioorganic chemistry) during the semester scheduled for week 10. Taking the control test is optional, and even in the case of a certified absence, the test cannot be taken a second time.

Control tests and final exams will be assessed as follows: Percentage (%) Grade

160

fail (1)
pass (2)
satisfactory (3)
good (4)
excellent (5)

The final exam at the end of the semester is a comprehensive exam involving topics of Medical Chemistry I and II. Students have a maximum of 3 exam chances in a semester (A, B and C chance exams).

The final exam is composed of a written and an oral part. The written exam consists of 2 modules (Bioorganic chemistry and Bioinorganic chemistry). To pass the written exam, students must pass both modules (Bioorganic and Bioinorganic). Students may get exempted from the first (bioorganic chemistry) module of the written exam in case they successfully completed the control test (with a passing grade or better). Results of control tests and written exam modules can be carried to B and C chance exams. Students must pass the written exam to be eligible to take the oral exam. The second part of the final exam is the oral exam covering all topics in Medical Chemistry. The oral exam consists of a total of four questions, one from each chapter: 1. General chemistry 2. Organic Chemistry 3. Bioorganic chemistry 4. Bioinorganic chemistry.

Information for repeaters:

- seminar attendance is compulsory

- results of control tests and written exam modules from the previous year(s) are not considered

- repeaters may write the control tests

Subject: MEDICAL CHEMISTRY II. PRACTICAL

Year, Semester: 1st year/2nd semester Number of teaching hours: Practical: **30**

5th week:

Practical: Identification of proteins using SDS polyacrylamide gel electrophoresis (PAGE) and Western blot	10th week: Practical: Polymerase Chain Reaction (PCR)
	11th week:
6th week:	Practical: Detection of hydroxyl radicals
Practical: Enzyme kinetics. Assay of glycogen phosphorylase activity	produced in the Fenton's reaction. Effect of metal ion chelator and hydroxyl radical scavanger compounds
7th week:	
Practical: Enzyme kinetics. Assay of catalase	12th week:
activity	Practical: Detection of nitric oxide production by macrophage cells (Griess assay)
8th week:	
Practical: Qualitative analysis of mono- and	13th week:
disaccharides	Practical: Measuring superoxide anion radical
Polarimetric analysis of carbohydrates	production. Assaying superoxide dismutase (SOD) activity
9th week:	Detection of radical scavanging compounds
Practical: Photometric determination of iron	(antioxidants) with ABTS decolorization assay

I

14th week: Practical: Practical exam

Requirements

Attendance at laboratory practices is compulsory and recorded. Students should attend 100% of laboratory practices. Missed and not accepted practices can be made up on the same week while the missed lab is still running with the permission of the laboratory teacher.

The practical is graded by the laboratory teacher. Evaluation is based on the results of practical control tests written during the practical classes besides the manual work. Students who fail one or more control tests will have the opportunity to improve until the end of week 14. Passing grades can be also improved.

The 'Medical Chemistry Practical II' subject is a prerequisite for the signature and exam registration in 'Medical Chemistry Lecture II'. Students must pass the Medical Chemistry Practical II to be eligible to take the Medical Chemistry II final exam.

Department of Pediatric and Preventive Dentistry

Subject: **PREVENTIVE DENTISTRY I.**

Year, Semester: 1st year/2nd semester Number of teaching hours: Seminar: **14**

1st week:	of dental diseases.
of dental diseases: importance, aim and possibilities.	7th week: Seminar: Written test.
2nd week: Seminar: Normal tissues in the oral cavity, anamnesis, steps of patient's examination.	8th week: Seminar: The role of nutrition in prevention of dental diseases.
3rd week: Seminar: The dental plaque (biofilm) and its role in the development of dental diseases.	9th week: Seminar: The role of fluoride in prevention of dental caries.
4th week: Seminar: Caries: clinical signs and symptoms, diagnostic methods.	10th week: Seminar: Fissure sealing.
5th week: Seminar: Diseases of the periodontium, diagnosis and treatment. The prevention of periodontal diseases, aims and possibilities.	Seminar: The effect of environmental and iatrogenic factors on oral health.
6th week: Seminar: The role of oral hygiene in prevention	Seminar: Dental health education. 13th week:
1 ()	

Seminar: The measurement of dental caries (caries indices).

14th week: Seminar: Written test.

Requirements

Prerequisites of taking the subject:

Odontology

The aims and objectives of the course:

The goal of the course is to provide the students with both an introductory knowledge of the complexities of assessing and addressing disease and prevention at the individual and population level and an understanding of the role of the dental profession in promoting and maintaining oral health.

Short description of the course:

Provides an introduction to dental disease, the causes and methods for prevention. An intense focus on dental caries and preliminary information on periodontal disease. Students learn to utilize patient assessment techniques and provide oral health information.

The main topics discussed are:

- •Application of the basic sciences in maintaining healthy oral tissues.
- •The principles and control of dental diseases.
- •The etiology, epidemiology and prevention of dental caries and periodontal diseases.

•Oral hygiene, nutrition and dietary measures, and dental health education as a preventive dental service.

•The metabolic and dental aspects of fluorides in the control of dental caries.

Requirements:

Active participation in the seminars is obligatory.

With acceptable written certificate students may miss 2 seminars (there is no possibility to compensate the missed seminars).

The missed seminars must be certified within 3 working days to the Educational Office by e-mail (fokot@dental.unideb.hu)

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week.

Assessment:

AW 5 grade

Conditions of signing the index:

- students must attend all the seminars (a maximum of 2 absences are possible)
- students must sit for two written self-control tests

Calculation of the grade:

Two written self-control tests will be held during the semester.

All of the SCTs are obligatory to take and cannot be repeated. The result of the missed SCT is 0%.

5 grade (AW5) practical mark will be calculated according to the average of the result of the SCTs. If the average of the SCTs is under 60% the result of the course is fail (1) and the student must take an end-semester (oral) exam as a "B" chance.

60-69.9%	pass (2)
70-79.9%	satisfactory (3)
80-89.9%	good (4)
90% and above	excellent (5)

Compulsory reading:

Harris NO, García-Godoy F: Primary preventive dentistry 6th ed. Appleton & Lange 2004

Recommended reading:

Limeback H: Comprehensive Preventive Dentistry. Wiley-Blackwell 2012

Division of Cell Biology

Subject: CELL BIOLOGY LECTURE

Year, Semester: 1st year/2nd semester Number of teaching hours: Lecture: 26 Seminar: 28

1st week:

Lecture: 1. Introduction. Origin of life. Basic	endosymbiosis
functions and constituents of cells.	Seminar: Material related to lectures 7-8.
2. Cell membrane, intracellular	
compartmentalization	6th week:
-	Lecture: 11. Nucleus, chromatin
2nd week:	12. Transport of proteins synthesized on free
Lecture: 3. Passive transport processes	ribosomes. Nuclear envelope, transport though
4. Active transport processes	nuclear pores
Seminar: Material related to lectures 1-2.	Seminar: Material related to lectures 9-10.
3rd week:	7th week:
Lecture: 5. Ca homeostasis	Lecture: 13. Vesicular transport I.
6. Osmo-, volume and pH regulation	14. Vesicular transport II.
Seminar: Material related to lectures 3-4.	Seminar: Material related to lectures 11-12.
4th week:	8th week:
Lecture: 7. Cytoskeleton I. (microtubules)	Lecture: 15. Cell division (mitosis, meiosis).
8. Cytoskeleton II. (intermedier and	Mechanics of cell division.
microfilaments)	16. Cell cycle and its regulation.
Seminar: Material related to lectures 5-6.	Seminar: Material related to lectures 13-14.
5th weeks	Oth weaks
Jun week. Lacture: 9 Cell cell and cell matrix contacts	Jui week:
	Lecture. 17. Cen signaling 1. General concepts.

10. Cellular energetics, mitochondrion,

Nuclear receptors. G-protein coupled receptors. 18. Cell signaling II. Receptor tyrosine kinases. The Ras/MAPK, PI3K/Akt and PLC/CaMK pathways. Seminar: Material related to lectures 15-16.	 12th week: Lecture: 23. Cell fates: Cell senescence, apoptosis 24. Cell fates: Stem cells Seminar: Material related to lectures 21-22.
 10th week: Lecture: 19. Cell signaling III. Proteolytic Signals. Pathways to the nucleus. 20. Cell-cell communication in the nervous and immune system. 	 13th week: Lecture: 25. From genes to cell function: overview of the main regulatory mechanism 26. Cell and gene therapies Seminar: Material related to lectures 23-24.
 Seminar: Material related to lectures 17-18. 11th week: Lecture: 21. Cell fates: Differentation 22. Cell fates: Oncogenes, tumor cells Seminar: Material related to lectures 19-20. 	14th week:Lecture: 27. Cell motility28. ConsultationSeminar: Material related to lectures 25-26.

Requirements

Department: Department of Biophysics and Cell Biology, Cell Biology Division Recommended semester: 1st year 2nd semester. Prerequisites of the course: No prerequisites. Teaching staff: Prof. Dr. György Vereb and the members of the Department Subject officer: Dr. Árpád Szöőr Education manager: Dr. Enikő Nizsalóczki (e-mail: cellbioedu@med.unideb.hu)

Aims of the course: The course gives an overview of the functional anatomy of higher eukaryotic animal cells with examples of the paradigmatic molecular mechanisms. Students successfully completing the course will have acquired an active professional vocabulary minimally required for study-ing biochemistry, molecular biology, genetics, histology and physiology. In addition, the course aims to provide a thorough knowledge base which serves to understand the functions and dysfunc-tions of the human body in their broader context.

Course synopsis: Structure and constituents of eukaryotic cells, the most important cellular functions: membrane transport, vesicular transport, cell signaling, cell division (mitosis, meiosis), differentiation, cell death

Material to be studied:

Compulsory sources: 5th ed. of Essential Cell Biology (Alberts et al.,Garland Publ Inc. 2019. ISBN-13:978-0393-6803-62). Chapters 1 and 11 through 20 are studied in depth during the course. Chapters 2 through 10 contain explanations for basic molecular concepts. There is additional core material that is available only in the lectures.

Cell biology Lab Notes: the currently required, up-to-date version is available at the course home page (@ elearning.unideb.hu).

Recommended: The in depth full-text version of the course material can be found in: Alberts et al.: Essential Cell Biology., 6th edition. W.W. Norton & Company, 2023, ISBN-13: 9781324033356; Lodish et al.: Molecular Cell Biology, 8th edition, W. H. Freeman, 2016; Alberts et al.: Molecular Biology of the Cell; 7th edition, W.W. Norton & Company, 2022. The 4th editions of these are also available online: http://www.ncbi.nlm.nih.gov/books/NBK21475/ http://www.ncbi.nlm.nih.gov/books/NBK21054/

Knowledge that will be examined in this course is comprised in the slides presented in the lectures. It is recommended to download these slides before the lectures and take notes on them during the lecture. Slides of central importance will be marked accordingly.

Course home page: https://biophys.med.unideb.hu/en/node/632

Signature: Signing for the course can be denied if the student has missed more than 2 seminars. Passing the course "Cell Biology Practical" is a required condition for obtaining the signature for "Cell Biology Lecture".

Type of exam: Final exam

Exemptions: In order to get exemption from the complete Cell Biology course, the student has to apply to the Education Office. Applications for exemption from part of the courses are handled by the Department. The deadline for such applications is Monday on the second week of education. No application will be considered after this date. The following documents have to be submitted to the Educational Advisor: 1. application with an explanation why the student thinks that he/she is eligible for an exemption; 2. certificates about the courses the student has taken; 3. a reliable description of the curriculum of the courses taken. Applicants may be interviewed before the decision is made.

Requirements:

1. Lectures: Attendance of lectures is indispensable for acquiring the knowledge required to pass, understanding which parts of the material have the highest importance, and finding the proper sources for preparing for the exam.

2. Seminars: Seminars serve to discuss the lecture material. Use them well, study the material before the seminar and arrive with your questions. Maximum two absences are permitted. Students must attend the seminars with their assigned study group. Students may sign up for one short interactive presentation during the semester. The teacher will choose the topics/questions on the spot and the presenter is required to explain the topic. This requires the in depth knowledge of all the topics presented at the lectures and studying the relevant textbook chapters. The presentations are graded on a scale of 0-3. This grade counts toward the bonus points earned during the semester.

3. Labs: Labs are done under a separate subject code and need to be passed for acquiring a signature in for this course.

4. Self-control Tests (SCT-s):

There will also be short online quizzes (SOQ) at the beginning of each seminar, covering all the material that is scheduled for discussion in the given seminar. The best 10 scores of these SOQs will be averaged (SOQave) and converted into bonus points and used when determining offered grades (see 5.4.1).

There will also be two SCT-s (comprised of test and essay questions) during the semester. The dates and topics for SCT-s are announced in the beginning of the semester. These tests will have a strong focus on keywords and definitions. Similarly to the final exam, basic questions (on minimally required knowledge, part A) and in depth questions (part B) constitute the SCT. As opposed to the final exam, both A and B parts are evaluated in SCTs and contribute to the SCT score regardless of their value.

Writing the tests is not compulsory; tests cannot be made up for, even in the case of a justified absence. Missed tests carry a score of 0.

SCTs are scored on a 0-100% scale, averaged (=SCTave) and this average is used for offering exemptions and bonus points towards the final grade (see 5.2 and 5.4.1.). 1/10th of the average % score achieved in the SOQs on weeks 11-14 will be added to the % score of the second SCT as a bonus.

5. Final Exam (written):

5.1. Parts of the Final Exam. The exam is a written exam of two parts (A and B).

Part A of the written test is a minimum level test. It consists of a set of 10 true-or-false questions about basic cell biology knowledge (1 point each) and 5 questions asking for a brief description of basic terms (molecules, concepts). These terms are listed among the key-words published on the subject's website. The answers are scored on a 0-2 scale in increments of 0.5 points. The student has to score 16 or above out of the total 20 points in part A to pass. Below 16 points the grade of the exam is a fail (1) and part B is not marked. For writing Part A, 20 minutes are allocated. A successful passing of Part A (or exemption from writing Part A, see 5.4.2) is valid for B and C exams throughout the given exam period, but not in consecutive semesters. Part B is a 85 minute complex exam, including short essays, fill-in, short answer, multiple choice,

relation analysis, sketch-recognition, term-matching, definition recognition, etc.

5.2. Calculating the exam score. As per 5.1., exam score is only calculated if Part A is passed.

1. % result of Part B expressed as points, 100 points maximum. If score on Part B is greater or equal to 50%, the following bonus points are added to the score of Part B:

2. Presentation grade, 3 points maximum

3. Average % result of SCTs (SCTave)

4 points for reaching 30%, +1 for each additional 10% reached,10 points maximum Total:113 points maximum

N.B. Bonuses are only valid in the semester they were obtained.

5.3. Assigning grades to exam scores

Part A below 16 points: fail (1)

Exam score (see 5.2.)):
below 55 points:	fail (1)
55-64.9 points:	pass (2)
65-74.9 points:	satisfactory (3)
75-84.9 points:	good (4)

reaching, and above 85 points: excellent (5)

5.4. Exemptions

5.4.1. For those who achieve SCTave $\geq 50\%$ at the self-control tests, a final grade offering score is calculated as follows:

- 1. SCTave % expressed as points, 100 points maximum
- 2. Presentation grade, 3 points maximum
- 3. Result of short online quizzes (SOQave, of the 10 best % scores).
- 6p-SOQave >=95%
- 5p-95% > SOQave >=90%
- 4p-90% > SOQave >=80%
- 3p-80% > SOQave >=70%
- 2p-70% > SOQave >=60%
- 1p-60% > SOQave >=40%

Total: 109 points maximum

Grades are offered as listed under "5.3. Assigning grades to exam scores". (Part A is considered to be passed in this case without writing a Part A test.)

5.4.2. Those who achieve SCTave $\geq =66\%$ at the self-control tests and do not accept the offered grade calculated as under 5.4.1. and therefore take the final exam, are exempted from Part A of the written final exam during the given semester.

6. Rules for repeating the course

6.1. Repeaters taking again a regular Cell Biology course need to attend seminars and can do presentations as regulated normally (see 2.). We encourage repeaters to write the SCTs since this is the only way to receive bonuses and exemptions based on SCTave scores.

6.2. Repeaters can apply for a Cell Biology exam course in the third semester if they have taken at least one exam in the previous exam period and in that exam have passed the minimum requirements (Part A), and have scored at least 35% on Part B). The above items 1.-4. and 6.1. are irrelevant to the exam course and consequently no bonuses can be earned during the exam course. Otherwise the final exam proceeds as detailed under 5. If Part A is passed in the exam, the % result of Part B expressed as points is converted to a grade as per 5.3.

Subject: **CELL BIOLOGY PRACTICAL** Year, Semester: 1st year/2nd semester Number of teaching hours: Practical: **20**

2nd week: Practical: Preparation for labs

3rd week: Practical: Cell types and basic constituents: separation and staining of blood cells

	Practical: Cell morphology, subcellular
4th week:	structures: fluorescent visualization
Practical: Cell types and basic constituents:	
separation and staining of blood cells	10th week:
	Practical: Cell morphology, subcellular
5th week:	structures: fluorescent visualization
Practical: Membrane transport: multidrug	
resistance	11th week:
	Practical: Cell signaling and cell division
6th week:	
Practical: Membrane transport: multidrug	12th week:
resistance	Practical: Cell signaling and cell division
	13th week:
7th week:	Practical: Remedial lab
Practical: Homeostasis: cell viability and death	
-	14th week:
8th week:	Practical: Remedial lab
Practical: Homeostasis: cell viability and death	
9th week:	

Requirements

Department: Department of Biophysics and Cell Biology, Cell Biology Division Recommended semester: 1st year 2nd semester. Semester for the regular course: 2nd Prerequisites of the course: No prerequisites. Teaching staff: Dr. Árpád Szöőr and members of the Department Education manager: Dr. Enikő Nizsalóczki (e-mail: cellbioedu@med.unideb.hu)

Aims of the course: The course gives an overview of the functional anatomy of higher eukaryotic animal cells with examples of the paradigmatic molecular mechanisms.

Material to be studied:

Cell biology Lab Notes: the currently required, up-to-date version is available at the course home page on the eLearning site.

Relevant parts of the Cell Biology Lecture course (see there).

Course home page: https://biophys.med.unideb.hu, elearning.med.unideb.hu

Signature: Signing for the course can be denied if the student has not performed all the lab practices or any one of the lab logs has not been accepted.

Type of exam: Practical grade

Requirements:

Completing all labs, and writing up the results and their interpretation in a lab log book on the spot is required. Only handwritten, bound lab log books are acceptable. The compulsory preparation for the lab includes writing the aims of the lab and the methods of implementation into the lab logbook before the lab. During the lab a log must be written into the book in a way that allows reproducing

the work done. So it must document what the student has actually done, the results obtained (including graphs and color drawings), and their interpretation. The lab tutor will only sign the log upon proper, independent completion of the lab. All labs must be accepted by a valid signature in order to receive the end of term signature.

Labs can only be performed by students who arrive well prepared. This is checked by a ~ 10 min test at the beginning of the lab, graded on a scale of 0-5 according to the following table:

Number of correct answers	Test Points (TP)
Less than 5	0
5	1
6	2
7	3
8	4
9-10	5

A TP of 0 results automatically in dismissal from the lab.

Furthermore, if the student's participation in the lab is not acceptable, the lab tutor will dismiss the student from the lab immediately, and the lab will be considered failed.

 $TP \ge 1$ are averaged and, after rounding, yield the final practical grade. If the average of the TP is below 1.5, it results in a practical grade 1 (fail). In these cases, a written lab exam can be done for the pass (2) mark before the exam period (covering the topics of all labs).

The practical grade cannot be improved in the exam period.

Since all labs must be accepted in order to receive the end of term signature (and a practical grade), those missing a lab are offered one (1) extra occasion to make up for the missed lab during the remedial week. This offer includes both the cases of writing a lab test of grade 0 earlier, and labs missed because of certified illness. In the latter case, certificates must be filled with the Education coordinator in Office Hours at the earliest possible occasion, so the student can be assigned a remedial lab appointment.

Faculty of Dentistry

Subject: SUMMER CHAIRSIDE PRACTICE FOR 1ST AND 2ND YEAR DENTAL STUDENT

Year, Semester: 1st year/2nd semester Number of teaching hours: Practical: **120**

CHAPTER 17 ACADEMIC PROGRAM FOR THE 2ND YEAR

Department of Biomaterials and Prosthetic Dentistry Subject: INTRODUCTION TO PROSTHODONTICS I.: DENTAL MATERIALS

Year, Semester: 2nd year/1st semester Number of teaching hours: Lecture: **14** Practical: **28**

1st week:	8th week:
Lecture: Classification of dental materials.	Lecture: Dental cements II.
Practical: Information about the practices,	Practical: The trial of dental cements.
lessons and practice tests in general. Rules and	
regulations during the practice.	9th week:
	Lecture: Adhesion in dentistry.
2nd week:	Practical: The trial of adhesion and dental
Lecture: Plasters used in dentistry. Thermoplastic materials.	adhesives.
Practical: The trial of plasters and thermoplastic	10th week:
materials.	Lecture: Impression materials.
	Practical: The trial of impression materials.
3rd week:	1
Lecture: Polymers.	11th week:
Practical: Mechanical testing of dental	Lecture: Basics about ceramics.
polymers.	Practical: Application of ceramics in practice.
1 5	Presentation of technical phases of a ceramic
4th week:	fused to metal process.
Lecture: Plastics used in dentistry.	1
Practical: Trial of denture base polymers.	12th week:
1 5	Lecture: Ceramics and tooth colour in dentistry.
5th week:	Practical: Tooth colour in practice.
Lecture: Dental filling materials.	1
Practical: The trial of dental filling materials.	13th week:
C	Lecture: Biocompatibility, corrosion.
6th week:	Practical: Practical and theoretical test II
Lecture: Basics about metals. Metals in	
dentistry. Mechanical testing in dentistry.	14th week:
Practical: The presentation of casting of metals.	Lecture: Secondary materials in prosthetics.
Steps of casting process.	Consultation.
1 01	Practical: Remedial test.
7th week:	
Lecture: Dental cements I.	
Practical: Practical and theoretical test I	

Requirements

The aim of acquiring the professional content of the subject: The aim of course is to introduce

students to dental materials and their properties.

Brief course program: There is a wide spectrum of materials frequently used in dentistry. Therefore, dentists have many options to select materials for every situation and problem. In order to choose the most optimal solution, it is important to be well acquainted with the physical, chemical, and biological behavior of professional materials. The practical lessons provide the possibility to test different materials and to measure their important physical and chemical properties.

Competences: During the course, the students will receive a summary of the materials they come into contact with during their dental activities. You can get to know the physico-chemical parameters, advantages and disadvantages of the materials used in dentistry, and acquire theoretical and practical knowledge about the manipulation, handling and use of dental materials.

Requirements:

The lectures are at the time and place according to the class hours, their visit is not obligatory, but it is recommended. Practical self-control tests will be held before each practice. The aim of the practical self-control tests is to evaluate the students' basic knowledge of the actual weekly topic. The evaluation of a practical self-control test can be 'accepted' or 'not-accepted'. A missed practice means a 'not-accepted' practical self-control test. If the amount of the 'not-accepted' practical selfcontrol tests exceeds 3, the signature will be refused automatically. During the practices wearing a lab coat is compulsory. Conditions of exemption (to repeaters and other special cases): Students who already have been given the signature, may request to be exempted from attending the practices. The request has to be submitted in a paper-based form or via e-mail to the Biomaterials and Prosthetic Dentistry Department until the end of the first week of the semester. (demeter.zsofia@dental.unideb.hu) Conditions of signature in the lecture book: The amount of missed practices cannot exceed 3 practices, even if they are certified. All the missed practices must be certified. There is no possibility to compensate for missed practices. Being late for practice means a missed practice. A missed practice means 'not-accepted' practice automatically, and a 'notaccepted' practical self-control test. After each practice, an oral assessment can be held based on the theoretical and practical course material of the practice, individually or at a group level. Students are required to keep a paper-based record during the practice, which can be checked by the practice leaders at the end of the practice. If this record is incomplete, it may negatively affect the result of the tablet test written at the beginning of the practice. All the conditions of signature at Phantom Laboratory Practice are obligatory to get a signature in the lecture book.

Assessment:

Oral End of semester exam (ESE).

Two self-control tests (written or oral) will be held during the semester according to the timetable at a predefined time and place. If the average of the grades of the self-control tests reaches 3.50, the result will be offered to the student as the ESE grade [3,50 or 4,00 as good(4) / 4,50 or 5,00 as excellent(5)]. The result of a missed self-control test is fail(1). During the 14th week of the semester, we will provide an opportunity to improve the result of the worst self-control test. Self-control tests are regarded as practices, so missing a self-control test will be counted as an absence from practice. Students have to indicate the acceptance or rejection of the offered grade in the Neptun system by the deadline set by the department. Failure to meet the deadline will result in the loss of the offered grade. Students who would like to improve their offered grade in the exam period must reject the offered grade in the Neptun system before applying for an exam. Students who have not accepted it, will take an exam in the exam period.

Department of Anatomy, Histology and Embryology

Subject: ORAL ANATOMY, HISTOLOGY AND EMBRYOLOGY III. LECTURE

Year, Semester: 2nd year/1st semester Number of teaching hours: Lecture: **42** Seminar: **26**

1st week:	Seminar: Liver. Pancreas.
Lecture: 1. Vertebral column. Muscles of the	
back. 2. Bones and joints of the thorax.	7th week:
Diaphragm. Respiratory movements. 3. Inoracic	tract 2 Bones and ligaments of the pelvis
cavity. Methastinum. Trachea and besophagus.	3 Spare lecture
2nd week:	Seminar: Histology consultation
Lecture: 1 Pericardium and pleura 2 Anatomy	seminar. mstorogy consultation.
and histology of the lungs. Development of the	8th week:
respiratory tract. 3. Anatomy of the heart.	Lecture: 1. Anatomy of the true pelvis. Pelvic
Seminar: General revision.	floor and perineum. 2. Endocrine system I: The
	hypothalamo-hypophyseal system. 3. Endocrine
3rd week:	system II: Thyroid, parathyroid and adrenal
Lecture: 1. Development of the heart. 2.	glands.
Development of the vascular system. Branchial	Seminar: Kidney. Demonstration: ureter, urinary
arteries. 3. Structure of the abdominal wall.	bladder.
Inguinal canal.	04h
Seminar: Iracnea. Lung.	9th week:
Ath wook.	normalized and a supply of the pervise and perinaum 2. Mala gapital argans 3. Famala
Lecture: 1 Formation of the gut tube Body	genital organs
cavities Development of the peritoneum and the	Seminar: Hypophysis Thyroid parathyroid and
gut tube. 2. Blood supply to the abdominal wall	adrenal glands.
and abdominal viscera. 3. Anatomy and histology	
of the oesophagus and the stomach.	10th week:
Seminar: Oesophagus. Stomach.	Lecture: 1. Development of the genital organs
	and gonads 2. Innervation of abdominal and
5th week:	pelvic viscera. 3. Pregnancy. Placenta.
Lecture: 1. Anatomy and histology of the	Seminar: Penis. Testis and epididymis.
intestines. 2. Anatomy, histology and	11.1 1
embryology of the liver. 3. Hepatic portal vein.	11th week:
Porto-caval anastomoses.	Lecture: 1. Joints of the upper limb. 2. Regional
Seminar: Sman mestine. Large mestine.	anatomy of the upper limb I. 5. Regional
6th week:	Seminar: Uterus Ovary Placenta
Lecture: 1. Peritoneum and retroperitoneum. 2.	Seminar, Oterus. Ovary, Fiacenta.
Anatomy, histology and embryology of the	12th week:
pancreas. 3. Anatomy of the kidneys, adrenal	Lecture: 1. Overview of the lymphatic system.
glands and the urinary tract. Development of the	Thymus and spleen. 2. Joints of the lower limb.
kidney and urinary tract.	3. Regional anatomy of the lower limb I.

Seminar: Lymphatic organs.	14th week:
	Lecture: 1. Spare lecture. 2. Spare lecture. 3.
13th week:	Spare lecture
Lecture: 1. Regional anatomy of the lower limb	Seminar: Histology and embryology
II. 2. Radiographic and cross-sectional anatomy	consultation.
of the thorax, abdomen and pelvis. 3. Spare	
lecture.	
Seminar: Histology and embryology consultation.	

Requirements

DENT Oral Anatomy, Histology and Embryology - III- Lecture

Requirements

The planned topics for lectures and seminars are listed in the Bulletin, any deviations and changes will be published on the Department's e-learning platform by the end of the first week of the semester.

Attendance at all seminars is compulsory in accordance with the Rules and Regulations of the UD, and absences will be noted by the tutor. The head of the Department may refuse to sign the subject if the number of absences from seminars in a semester exceeds three, even if certified. Absences from seminars may not be made up in another group due to the high number of students.

Rules of the examination

There are no self-control tests during the semester. At the end of the semester, there is a written exam (MOODLE, embryology) and two oral exams (histology and anatomy). The exam will cover the lectures, exercises and seminars of Oral Anatomy, Histology and Embryology I-II-II and the official textbooks. The first exam will count as an "A" chance exam.

1. Students start the exam with a written Embryology test. If this part is passed, the student proceeds to the dissection or histology stations. Failure of the test is the end of the exam. The grade (E1) for the written Embryology test:

 $\begin{array}{rll} 0 - 59\% = & 1 \mbox{ (fail)} \\ 60 - 69\% = & 2 \mbox{ (pass)} \\ 70 - 79\% = & 3 \mbox{ (satisfactory)} \\ 80 - 89\% = & 4 \mbox{ (good)} \\ 90 - 100\% = & 5 \mbox{ (excellent)} \end{array}$

If the student fails the written exam in Embryology on the "C" chance, he/she will also receive an oral embryology question at the Histology station. At the Histology station, the exam can only be continued if this embryology question is passed.

2. After the common written part, the students continue the exam with an *oral histology (histology practice room)* or *oral anatomy (dissection room)* part. After successfully completing this station, the student must immediately proceed to the other station (anatomy for those who start with histology and histology for those starting with anatomy).

3. Histology station:

The student will be given 10 structures (from the key sections of the first and third semesters) from a predefined (e-learning) list, of which he/she must correctly identify at least 8 to proceed to the exam. The student then draws a topic on which two sections from the 2nd and 3rd semester's material (head and neck/neuroanatomy, viscera) are pre-combined. The student receives separate marks (H1, H2) for the sections of the histology topic.

4. Anatomy station:

The student will be given 10-10 structures (limbs, viscera) from a pre-defined (e-learning) list, of which he/she must correctly identify at least 8-8 on anatomical preparations in order to proceed with the exam. The student then draws a topic with 3 pre-combined questions (skull, head and neck, neuroanatomy). . For the questions on the anatomy topic, the student receives separate marks (A1, A2, A3).

If any part of the examination is failed, the whole examination is cancelled

Grade = (E1 + H1 + H2 + A1 + A2 + A3)/6

Correction of the Final Grade If the student wishes to improve his/her grade in the examination, he/she must retake all parts of the examination. The previous mark will be cancelled.

Signing up for the exam and postponing: Rules of the Neptun system apply.

Conditions: Signing up for the exam requires the successful passing of the "Oral Anatomy, Histology and Embryology - III - Practical" course.

Subject: ORAL ANATOMY, HISTOLOGY AND EMBRYOLOGY III. PRACTICAL		
Year, Semester: 2nd year/1st semester Number of teaching hours:		
1st week:	plastic models. Examination of pericardial la	
Practical: Anatomy of the trunk: thorax.	and sinuses.	
Overview of vertebrae on specimens,		
identification of different vertebrae, connections	4th week:	
of the vertebral column. Bones of the thorax and	Practical: Anatomy of the trunk: abdomen.	

their connections. Blood supply and innervation of intercostal spaces.

2nd week:

Practical: Anatomy of the trunk: thorax. Overview of the trachea, bronchi, lungs, and esophagus in situ, and in specimens. Examination of pleural layers and recesses/sinuses.

3rd week: Practical: Anatomy of the trunk: thorax. Demonstration of the heart in specimens and ivers

Anterolateral abdominal wall and inguinal canal. Opening of abdominal cavity, identification of peritoneal layers. Demonstration of greater and lesser omentum, omental bursa, and peritoneal ligaments.

5th week:

Practical: Anatomy of the trunk: abdomen Demonstration of the stomach, small and large intestines, liver, gall bladder and spleen in situ, in specimens and plastic models.

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 6th week: Practical: Anatomy of the trunk: abdomen Retroperitoneum. Overview of the pancreas, kidneys, adrenal glands, and ureters in situ, in specimens and plastic models. 7th week: Practical: Anatomy of the trunk: CONSULTATION. 	 and free upper limb in specimens. Overview of upper limb joints in specimens and plastic models. 11th week: Practical: Anatomy of the limbs: upper limb. Examination of muscular groups, vessels, and nerves of the upper limb in specimens. Definition of upper limb anatomical regions.
 8th week: Practical: Anatomy of the trunk: pelvis and perineum. Bones of the pelvis and their connections. 9th week: Practical: Anatomy of the trunk: pelvis and 	12th week: Practical: Anatomy of the limbs: lower limb. Demonstration of bones of the free lower limb in specimens. Overview of free lower limb joints in specimens and plastic models.
perineum. Demonstration of male and female internal genital organs, urinary system (pelvic parts of ureters, urinary bladder, urethra) and rectum in situ, in specimens and plastic models.	13th week: Practical: Anatomy of the limbs: lower limb. Examination of muscular groups, vessels, and nerves of the lower limb in specimens. Definition of lower limb anatomical regions.
10th week: Practical: Anatomy of the limbs: upper limb. Demonstration of bones of the pectoral girdle	14th week: Practical: End semester exam (ESE)

Requirements

DENT Oral Anatomy, Histology and Embryology - III - Practical

Requirements

The topics of the practicals are described in the buletin. According to the Rules and Regulations of the UD attendance at the practicals is compulsory and absences

will be noted by the tutor. The head of the Department may refuse to sign the subject if the number of absences from the practical course exceeds three in a semester. Due to the high number of students, missed practicals cannot be made up with another group.

Rules for the practical examination

The practical examination will be oral and will take place in the dissecting room during the 14th week at the time of the practicals. The aim of the examination is to IDENTIFY macroscopic anatomical structures. A list of structures will be published by the Department, on its e-learning platform, during the first week of the semester.

The practical exam is passed with a 60% or better.

A successful Practical Exam will be converted into a grade as follows:

0-59% = 1 (fail) 60-69% = 2 (pass) 70-79% = 3 (satisfactory) 80-89% = 4 (good) 90-100% = 5 (excellent)

A failed Practical Exam may be repeated once during the semester and once during the examination period. The grade of the Practical Exam cannot be improved, only students who have not achieved 60% or could not show up due to medical reasons (proven with a doctor's note) on the previous occasion are allowed to retake the Practical Exam.

The Department will publish details of the Practical Examination on its e-learning platform.

Department of Biochemistry and Molecular Biology

Subject: BIOCHEMISTRY I. LECTURE

Year, Semester: 2nd year/1st semester Number of teaching hours: Lecture: **52** Seminar: **14**

1st week:	elongation. Characteristics of transcription
Lecture: General introduction 1 hour	factors. Transcription regulatory regions
General information, requirements, exam	(promoters, enhancer, insulator) and their
information. Tips and tricks of preparation for a	interactions. Nuclear receptors.
successful exam.	Posttranscriptional modifications of RNA,
Introduction to biochemistry 1 hour	splicing.
Introduction	Seminar: Lecture topics of the previous week.
The genetic code, DNA and genome 2 hours	
Components of the human genome. The structure	3rd week:
of chromosomes and chromatin. Genome	Lecture: Translation, protein synthesis 1 hour
programs.	The genetic code. Structure and function of
Seminar: General introduction.	tRNA and the ribosome. Protein synthesis. Steps
	of translation (protein synthesis): initiation,
2nd week:	formation of the peptide-bond, elongation and
Lecture: Genome replication and repair 2	termination. Antibiotics. Antiviral effect of
hours	interferon.
Genome replication. Initiation, synthesis and	Protein structure and function 3 hours
termination in eukaryotes. The replication fork.	Protein maturation. Assisted protein folding and
Synthesis of the leading and lagging strand.	its enzymes and chaperons.
Replication of chromosome ends (telomers).	Protein structure levels. Domains and subunits.
Mutations. Causes and consequences of	Methods to determine the 3D structure of
mutations. DNA repair mechanisms. Diseases	proteins.
caused by defective DNA repair.	Protein dynamics, specific movements:
Eukaryotic transcription 2 hours	pancreatic lipase and serine proteases.
Transcription in eukaryotes. Initiation and	Intrinsically disordered proteins: characteristics
-	-

and biological functions. Misfolding: protein aggregation diseases. The structure-function relationships of proteins, through the examples of collagen and some metabolic enzymes. Hemoglobin; structure and function. Molecular changes caused by oxygen binding. The molecular basis of cooperativity. Molecular basis of oxygen release. Pathological forms of hemoglobin.

Seminar: Lecture topics of the previous week.

4th week:

Lecture: Posttranslational modifications and intracellular protein degradation 2 hours

Acylation: glutarylation, acetylation, succinylation. Biological function of protein processing. Classification of proteolytic enzymes. Structure and function of serine proteases. Mechanism of activation of serine proteases. Protease inhibitors.

Lysosomal and ubiquitin-dependent proteasomal protein degradation. The role of ubiquitin and ubiquitin-like proteins. Types of ubiquitinated proteins. Factors influencing protein half life. The structure and function of proteasome.

Autophagy 1 hour

Definition and types of autophagy. Regulation of macroautophagy initiation and its role in nutrient mobilization. The main steps of selective autophagy, its relation to the ubiquitinproteasome system and role in the maintenance of cellular and tissue homeostasis. Diseases related to autophagy disorders.

Enzymes 1 hour

General characterization and classification of enzymes. How do enzymes increase the reaction rate? Principles of the Michaelis-Menten kinetic model and the steady-state kinetic model. **Seminar:** Lecture topics of the previous week.

5th week:

Lecture: Enzymes 2 hours

Definition and interpretation of kinetic parameters. Reversible and irreversible enzyme inhibition. Principles and visualization of competitive, non-competitive and uncompetitive enzyme inhibition. Regulatory mechanisms of enzymes and their significance.

Regulatory mechanisms in metabolism 2

hours

General regulatory principles in the regulation of metabolism. The structure of metabolic pathways. Regulatory possibilities with reactions leading to equilibrium or non-equilibrium. Systems increasing the sensitivity of regulation: allostery, substrate cycle, interconversion cycle, cascades. General rules of regulations, the definition and role of commitment step. Feedback inhibition. The levels of regulation: quick allosteric or covalent modification or longterm gene level regulation. The regulatory possibilities of converse processes. The role of compartmentalization in regulation. Regulation with local or systemic factors and hormones. The regulatory role of insulin, glucagon and epinephrine.

Seminar: Lecture topics of the previous week.

6th week:

Lecture: Carbohydrate metabolism 1 hour

The central role of glucose. GLUT transporters. Glycolytic pathway. Shuttles. Gluconeogenesis. **Biochemistry of mitochondria 3 hours** Energy in biology. Oxidative phosphorylation. The PDH. The citric acid cycle and its regulation. The electron transport chain and its inhibitors. The mitochondrial genome. Mitochondrial biogenesis, mitophagy. **Seminar:** Lecture topics of the previous week.

7th week:

Lecture: Carbohydrate metabolism 4 hours

Regulation of glycolysis and gluconeogenesis. Importance of glycogen. Degradation and synthesis of glycogen. Regulation of glycogen synthesis and degradation. Metabolism of galactose and fructose. Pentose phosphate pathway. Synthesis of disaccharides. Metabolism of glucuronic acid. Glycoproteins. Inherited diseases in the carbohydrate metabolism. **Seminar:** Lecture topics of the previous week.

8th week:

Lecture: Lipid metabolism 4 hours

Cycling of lipids in human body: endogenous, exogenous and reverse pathways. Biosynthesis of fatty acids: the transport of acetyl-CoA, reaction catalyzed by acetyl-CoA carboxylase. Fatty acid synthesis from acetyl-CoA and malonyl-CoA, the transmethylation, related enzyme and vitamin regulation of fatty acid synthesis. Elongation and desaturation of fatty acids. Synthesis and storage of triacylglycerols and their mobilization from adipose tissue. Beta oxidation of fatty acids. Oxidation of fatty acids with odd carbon number. Synthesis and utilization of ketone bodies. Seminar: Lecture topics of the previous week. **Self Control Test**

9th week:

Lecture: Lipid metabolism 4 hours

Synthesis of cholesterol, vitamin D, bile acids and steroid hormones. The cholesterol problem. Coordinated gene level regulation of synthesis and uptake - SREBP-2. ABC transporters. The central role of the liver. Familiar and diet-related hypercholesterolemia. Biochemical background of drug targets.

Essential fatty acids. The metabolism of omega 3 and omega 6 fatty acids. Synthesis of arachidonic acid. Synthesis of lipid mediators:

prostaglandins, leukotrienes, resolvins, lipoxins. Molecular mechanism of action of the steroid and non steroid anti-inflammatory agents. Seminar: Lecture topics of the previous week.

10th week:

Lecture: Amino acid metabolism 4 hours

Essential amino acids. Proteinogenic and non proteinogenic amino acids. Amino acids in human metabolism. Formation and utilization of the intracellular amino acid pool. Exogenous amino acid sources, digestion of proteins. Endogenous amino acid sources: intracellular protein breakdown. Amino acid transport. Nitrogen balance. Common reactions in the amino acid metabolism: fate of the nitrogen. Transamination and deamination. Formation and elimination of ammonia in the body. The urea cycle and its regulation. Mitochondrial carbamoyl phosphate synthase. Seminar: Lecture topics of the previous week.

11th week:

Lecture: Amino acid metabolism 4 hours Decarboxylation and carboxylation reactions in the amino acid metabolism. C1 transfer and

deficiencies. Monooxygenation and dioxygenation reactions. Fate of the carbon skeleton of amino acids: glucogenic and ketogenic amino acids. Seminar: Lecture topics of the previous week.

12th week:

Lecture: Nucleotide metabolism 4 hours

Nucleotide pool. Digestion and absorption of nucleic acids. Sources of atoms in purine ring. De novo synthesis of purine nucleotides. Regulation of purine nucleotide synthesis. Salvage pathways for the purine bases. Degradation of purine nucleotides. Diseases associated with purine nucleotide metabolism. De novo synthesis of pyrimidine nucleotides. Regulation of pyrimidine nucleotide synthesis. Salvage pathways for the pyrimidines. Degradation of pyrimidine nucleotides. Nucleoside and nucleotide kinases. Orotic acid uria. Synthesis of dezoxyribonucleotides. Synthesis of dezoxythimidylate. Antitumour and antiviral action of base and nucleoside analogues.

Seminar: Lecture topics of the previous week.

13th week:

Lecture: Integrated metabolism 4 hours

Comparison of the amino acid metabolism with the carbohydrate and lipid metabolisms. Nitrogen transport between the tissues. Intercellular glutamine cycle. The fate of glucose in various tissues.

Metabolic interrelations in fasting and well-fed state. Regulation via insulin, mTOR, glucagon and AMPK. The metabolic roles of insulin. The role of PPAR-s in adipogenesis, lipid metabolism, energy balance and in increasing the insulin sensitivity.

Seminar: Lecture topics of the previous week. **Self Control Test**

14th week:

Seminar: Lecture topics of the previous week.

Reading materials: Lubert Stryer: Biochemistry. 10th edition. W.H. Freeman, 2023. ISBN: 978-1319498504. Thomas M. Devlin: Textbook of Biochemistry with Clinical Correlations.

7th edition. John Wiley & Sons, 2010. ISBN: 978-0-470-28173-4.

Requirements

Requirements for getting a signature for the semester: attendance in the seminars. Only those students can get offered grade or take the exam of the theoretical course, who have fulfilled the requirements of the practical course as well.

Required knowledge from Biochemistry I.: topics of "Basic biochemistry" and "Metabolism" presented at the lectures and topics discussed in the seminars. (Lecture slides will be uploaded before the lectures to the https://elearning.med.unideb.hu website of the Department (Faculty of Medicine / Department of Biochemistry and Molecular Biology / 04_BMBI Biochemistry I. (II. GM, DENT), login with your university network ID and password)

Attendance on the lectures is recommended, but not compulsory. Note that getting points on the seminars will be very difficult without proper understanding of the material, for which the attendance on the lectures is essential.

On the seminars the material of the lectures of the previous week will be discussed. Participation in all seminars is compulsory and can be missed only with medical proofs. The Department will not collect and verify the medical papers up to three missing seminars. In case of more than three absences the Department refuses the signature. In this case the student may ask the Dean for an override, for these requests students have to deliver the signed and stamped medical proofs (with unique medical document ID) about their all absences. Students can't make up a seminar with another group. Students can earn 10 points by writing seminar tests (see more details in the "Information about seminars" file on the e-learning page of the Department). Seminar points are counted for the offered grade, but can't be added to the written exam points at the end of the semester.

Students can write two control tests during the semester from the material of the lectures and seminars. Control tests consist of 2 x 40 single- and multiple choice test questions (each for 1.25 points), by the tests maximum 100 points can be reached. Control tests have to be written personally, on-line test-writing is not possible. Control tests are not obligatory. During the semester 110 points can be collected by the two control tests of the material of the lectures (2 x 50 points) and 10 points by the seminar tests. At the end of the semester, on the basis of the collected points, grade will be offered for those students who collected at least 60 points and reached the 60% (6 points) of the seminar points as well. Grades: 2 (pass): 60-69.5 points; 3 (satisfactory): 70-79.5 points, 4 (good): 80-89.5 points and 5 (excellent): 90-110 points. Students have to decide to accept the offered grade until the beginning of the exam period. Those who decline the offered grade are obliged to take the exam in the exam period. Semester points will be automatically erased for those students, who break the rules of test writings.

At the written end-semester exam 100 points can be collected, the test consists of 40 single- and multiple choice test questions from the lecture material (each question for 2.5 points). 60% (60 points) is needed to get a passing mark, and the grade increases with every 10 points (60-69.5 pass, 180
70-79.5 satisfactory, 80-89.5 good, and 90-100 excellent). In case of unsuccessful written "C" exam, students will get oral questions as well (in this case students can get maximum a passing grade).

Those students who collect at least 140 points during the two semesters from the two courses (Biochemistry I. and Biochemistry II.) of the Department of Biochemistry and Molecular Biology and have at least 55 points from each subjects, will be exempted from the written part of the final exam at the end of the second semester. Scores of the exams will be counted into the point collecting system if they are better than the scores collected by the control tests.

Please follow the announcements of the department about the control tests, exams and other current information on the e-learning page of the Department (https://elearning.med.unideb.hu, login with your university network ID and password). Specific rules for repeaters regarding the seminars and practices as well can be found on the Departments e-learning page.

Subject: BIOCHEMISTRY I. PRACTICAL

Year, Semester: 2nd year/1st semester Number of teaching hours: Practical: **40**

 1st week: Practical: - Safety instructions and fire regulations. Introduction to biochemical technics. Bioinformatics: Study of protein structure using protein structural databases (demonstrative 	5th week:Practical: - Studies on phosphatases.- Study of proteolytic enzymes (demonstrative practice).
practice).2nd week:Practical: - Safety instructions and fire	6th week: Practical: - Studies on phosphatases. - Study of proteolytic enzymes (demonstrative practice).
regulations. Introduction to biochemical technics. - Bioinformatics: Study of protein structure using protein structural databases (demonstrative practice).	7th week: Practical: - Determination of the activity of glycolytic enzymes (aldolase, LDH), electrophoresis of LDH.
3rd week: Practical: - Safety instructions and fire regulations. Introduction to biochemical technics. - Bioinformatics: Study of protein structure using protein structural databases (demonstrative	 Studies on the coupling of mitochondrial electron transport by proton motive force to ATP synthesis (demonstrative practice). 8th week:
practice). 4th week:	Practical: - Determination of the activity of glycolytic enzymes (aldolase, LDH), electrophoresis of LDH.
Practical: - Studies on phosphatases. - Study of proteolytic enzymes (demonstrative practice).	- Studies on the coupling of mitochondrial electron transport by proton motive force to ATP synthesis (demonstrative practice).

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9th week:	
Practical: - Determination of the activity of	11th week:
glycolytic enzymes (aldolase, LDH),	Practical: - Studies on transaminases.
electrophoresis of LDH.	- Study of biochemical features by applying
- Studies on the coupling of mitochondrial	problem-based learning (demonstrative practice).
electron transport by proton motive force to ATP	
synthesis (demonstrative practice).	12th week:
	Practical: - Studies on transaminases.
10th week:	- Study of biochemical features by applying
Practical: - Studies on transaminases.	problem-based learning (demonstrative practice).
- Study of biochemical features by applying	
problem-based learning (demonstrative practice).	

Requirements

Requirements: perform every laboratory practices and reach at least 60% of the practical points. Passing the course "Biochemistry I. Practical" is a required condition for obtaining the signature for "Biochemistry I. Lecture".

Description of the practices, notebooks and all information about the practices can be found on the e-learning site of the department (https://elearning.med.unideb.hu).

Students have to do all practices with their own group according to the schedule that is posted on our e-learning site. If someone is absent due to any serious reason, the missing experiment has to be performed with another group, within the three-week period of the given practice. Points can't be earned for the make-up practice without medical paper. If a student misses even one practice the semester of the student can't be signed.

During the practices students have to prepare notebooks. Students will be graded based on the points that are collected for the notebooks and practical tests.

You can read more detailed information about the practices on the e-learning page of the Department (https://elearning.med.unideb.hu).

Department of Foreign Languages

Subject: **HUNGARIAN LANGUAGE II/1.** Year, Semester: 2nd year/1st semester Number of teaching hours:

Practical: 28

1st week:	étteremben 1.
Practical: Emlékszik?	
	5th week:
2nd week:	Practical: Étkezések, étteremben 2.
Practical: Tegezés-Önözés	
-	6th week:
3rd week:	Practical: Összefoglalás
Practical: Élelmiszerek 1.	
	7th week:
4th week:	Practical: Mid-term test (written)
Practical: Élelmiszerek 2., Étkezések,	Self Control Test

8th week: Practical: A városban 1.

9th week: Practical: A városban 2.

10th week: Practical: Édes otthon 1.

11th week: Practical: Édes otthon 2.

12th week: Practical: Összefoglalás

13th week: Practical: End-term test (written) Self Control Test

14th week: Practical: End-term test (oral) Self Control Test

Requirements

Requirements of the course:

Attendance

Attending language classes is compulsory. If a student is late it is considered as an absence. Students can miss only 10 percent of the classes that is maximum 2 occasions. In case of more than 2 absences, the signature may be refused. Making up a missed lesson with another group is not allowed.

The teacher evaluates active participation in each class. Students are not supposed to share coursebooks in the classes therefore if they fail to bring the coursebook to the class for the second time the attendance is refused.

Testing, evaluation

During the semester students must sit for two written language tests, and an oral exam. If a student is late for the test, he/she is not allowed to take it.

A further minimum requirement is the knowledge of 200 words per semester divided into 10 word quizzes. There are five word quizzes before and another five after the midterm test. If a student fails or misses any word quizzes he / she cannot take the written test. A word quiz can be postponed by a week and students can take it only with their own teacher. Students can get bonus points (5-5%) by taking two extra quizzes containing 20 sentences each, before the midterm and end term tests. The sentences are taken from the units of the coursebook. Missed word quizzes cannot be made up for on the day of the written test.

The oral exam consists of a role-play from a list of situations covered in the coursebook. If students fail the oral exam, they fail the whole course. The results of the written tests and the oral exam are combined and averaged.

Based on the final score the grades are given as follows:

Final score	Grade
0-59%	fail (1)
60-69%	pass (2)
70-79%	satisfactory (3)
80-89%	good (4)
90-100%	excellent (5)

If the final score of the written tests is below 60%, the student can take a written remedial exam once covering the material of the failed part. The remedial test must be done before the end of week

14. The oral test can only be taken if the written tests are successful.

Coursebook: Fodor, Marianna - Rozman, Katalin: Beszélek magyarul?! I.

Assignments, audio files, oral exam topics and vocabulary minimum lists can be found on the elearning site of the Department of Foreign Languages (www.elearning.med.unideb.hu).

Department of Physiology

Subject: DENTAL PHYSIOLOGY I. LECTURE

Year, Semester: 2nd year/1st semester Number of teaching hours: Lecture: **48** Seminar: **28**

1st week:	Role of cerebellum, basal ganglia in motor
Lecture: Introductory remarks	coordination
Membrane transport mechanisms	Hypothalamic functions. The autonomic nervous
Regulation of cell function, signal transduction	system.
Electrical properties of the cell membrane	Monoaminergic system, motivation, reward, addiction, regulation of behaviour.
2nd week:	
Lecture: Mechanisms underlying the action	6th week:
potential.	Lecture: Sleep, wakefulness, attention,
Regulation of synaptic function and synaptic	mechanisms of circadian rhythm.
plasticity	Learning, memory, speech.
Neuromuscular junction	Skeletal and smooth muscle physiology
General functional features of neurons and glial	
cells	7th week:
	Lecture: Cardiac electrophysiology, ECG
3rd week:	Mechanics and contractility of cardiac myocyte
Lecture: Basic neural interactions in the CNS.	The cardiac cycle
Synchronized neuronal functions, origin of EEG.	
Physiology of sensory functions and somatic	8th week:
sensation.	Lecture: Autoregulation of cardiac output
Neural mechanisms of the pain sensation.	Neuroendocrine control of cardiac functions
Theoretical background of the pain therapy.	
	9th week:
4th week:	Lecture: Principles of hemodynamics
Lecture: Mechnisms of hearing and vestibular	Features of arterial and venous circulation
sensation.	Microcirculation and lymphatic circulation
Optics of vision	Components of vascular tone
Eye-movements, optical reflexes, basic	
mechanisms of color vision.	10th week:
laste and olfaction	Lecture: Cardiovascular reflexes I.
54h waala	Cardiovascular reflexes II.
Sun week:	Cinculation
a sord Spinal and reflexes	Circulation
coru, spinar coru renexes.	

11th week:	contraction.
Lecture: Pulmonary circulation	
Splanchnic, cutaneous and skeletal muscle	13th week:
circulation	Lecture
Circulatory shock	
	14th week:
12th week:	Lecture
Lecture: Integrated response of the	

Requirements

1. Signature of the semester

cardiovascular and respiratory system Exercise physiology. Energetics of muscle

Attendance of lectures and seminars is compulsory. The signature of the semester may be refused for the semester in case of more than three absences from the seminars. Completion of a missed seminar with a different group is not possible.

In cases of more than two lecture absences the special advantage is withdrawn (see below). Each student must attend seminars with the group specified by the Education Office. For continuous updates on all education-related maters, please check the elearning.med.unideb.hu web site (Department of Physiology menu item).

The Dental Physiology I lectures are listed at the elearning.med.unideb.hu web site, too.

2. Evaluation during the semester

The knowledge of students will be tested 3 times per semester in the form of a written test (multiple choice questions). Participation on mid-semester written tests is compulsory. If one wishes to improve on his/her general performance, it is possible to take a make-up (remedial) test on one of the three topics. Note that the calculation of the average score will be based upon the result of the remedial test, even if it is worse than the original score. At the end of the 2nd semester the 1st semester test results will be used to calculate your bonus points. The bonus points are valid only for a given academic year! The calculation of bonus points is detailed at the description of Dental Physiology II.

3. Examination

The first semester is closed by an oral end-semester exam (ESE) covering the topics of all lectures, seminars and laboratory practices of the semester. The list of exam questions is available on the elearning.med.unideb.hu web site (Department of Physiology menu item).

The ESEmark based on the average score of mid-semester tests will be offered if -one's average score of the three mid-semester tests is above 60%; and -one's Dental Physiology I. Practical mark is at least satisfactory (3); and -(s)he has fewer than four lecture absences; and -the Dept. of Physiology verifies the semester (signature of lecture book).

The mark based on the average score of mid-semester tests is calculated according to the following table:

scoremark0-59%fail60-69%pass

 70 - 79%
 satisfactory

 80 - 89%
 good

 90 - 100%
 excellent

-If one is not satisfied with this result, (s)he may participate in ESE during the examination period. -If one wishes to improve his/her former Physiology exam mark, it is possible to take improvement exam. Note that the mark of improvement exam depends on the actual actual performance, even if it is worse than the previous result!

Subject: DENTAL PHYSIOLOGY I. PRACTICAL

Year, Semester: 2nd year/1st semester Number of teaching hours: Practical: **42**

7th week:
Practical: SIMULATION OF THE ACTION
POTENTIAL IN THE SQUID AXON
8th week:
Practical: COMPUTER SIMULATION OF
THE HUMORAL REGULATION OF
INTESTINAL SMOOTH MUSCLE
9th week:
Practical: INVESTIGATION OF THE
ENDOTHELIAL FUNCTION ON ISOLATED
ARTERIAL RING
10th week:
Practical: COMPUTER SIMULATION OF
THE FRANK-STRALING-MECHANISM
11th week:
Practical: Remedial Lab
12th week:
Practical: Lab Exam

Requirements

1. Signature of the semester

Attendance of laboratory practices is compulsory. The signature of the semester may be refused in case of more than two absences from the practices.

All missed practices must be made up; however this does not reduce the number of absences! Completion of all topic sheets in the Exercise Book, each verified by the signature of the teacher, is also a precondition of the signature of the semester.

Each student must attend on laboratory practices with the group specified by the Education Office. For continuous updates on all education-related maters, please check the elearning.med.unideb.hu web site (Department of Physiology menu item).

2. Evaluation during the semester None

3. Examination

Laboratory practical knowledge of the students will be tested at the end of the semester as part of the Lab Exam. As a precondition of attending the Lab Exam, the fully completed Exercise Book (with all the verified topics) must be presented during the Lab Exam. Students are expected to perform the given experiment on their own and must be familiar with theoretical background also.

If the evaluation of the Lab Exam is `fail` (1) then the Lab Exam can be repeated once during the exam period. There will be only one date for the improvement of the Lab Exam during the exam period.

Improvement of the successful Lab Exam grade is NOT possible during the regular examination period.

If the final evaluation of the Lab Exam is `fail` (1) then one cannot take Dental Physiology I. endsemester exam (ESE).

If the final evaluation of the Lab Exam is `pass` (2) then Dental Physiology I ESE mark based on the average score of mid-semester tests will NOT be offered even if the average score of the three mid-semester tests is above 60%.

Faculty of Dentistry

Subject: SUMMER CHAIRSIDE PRACTICE FOR 1ST AND 2ND YEAR DENTAL STUDENT

Year, Semester: 2nd year/2nd semester Number of teaching hours: Practical: **120**

Department of Biomaterials and Prosthetic Dentistry

Subject: INTRODUCTION TO PROSTHODONTICS II.: INTRODUCTION TO THE FIXED PROSTHODONTICS

Year, Semester: 2nd year/2nd semester Number of teaching hours: Lecture: **14** Practical: **28**

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1st week: Lecture: Basics of gnathology. The connection of gnathology with prosthodontics. Articulators. Basics of mounting of the casts into articulators. Practical: Discussion about the subject, and the practical work. Examination of the casts and drawing on the casts. Demonstration of wax up.	 8th week: Lecture: General aspects of tooth preparation (full veneer crown). Practical: Tooth preparation. Lower molar. Silicon index. 9th week: Lecture: Preparation of incisors and canines
2nd week:	Practical: Tooth preparation. Lower molar.
Lecture: Occlusion and articulation in natural dentition. Occlusal theories related to	Silicon index.
prosthodontics. Practical: Wax-up of 34, 35 guiding cusps	10th week: Lecture: Preparation mistakes in practice Practical: Tooth preparation. Lower molar.
3rd week:	Silicon index.
Lecture: Jaw relations. Positions of the mandible.	11th week:
Practical: wax-up of 34, 35 supporting cusps	history taking, patient examination, study cast.
4th week: Lecture: Mandibular movements Practical: Wax-up of 36 all cusps	Practical: Tooth preparation. Upper incisor. Silicon index.
5th week: Lecture: Introduction into fixed prosthodontics. Fixed prosthesis Practical: Wax-up of 14, 15, 16 all cusps	12th week:Lecture: Clinical phases of crown fabrication II.Framework try-in, biscuit probe, cementation.Practical: Tooth preparation. Upper incisor.Silicon index.
6th week: Lecture: Instruments used for tooth preparation. General aspects of tooth preparation. Practical: Instruments of tooth preparation. Practice with handpieces. Setting of the mannequin	 13th week: Lecture: Centric relation determination for fixed prosthesis. Practical: Tooth preparation. Upper incisor. Silicon index. 14th week:
7th week: Lecture: Preparation of molars and premolars. Practical: Tooth preparation. Lower molar. Silicon index.	Lecture: Consultation Practical: Tooth preparation. Upper incisor. Silicon index.

Requirements

The aim of acquiring the professional content of the subject:

The aims of the subject are to introduce students to basics of gnathology and the tooth preparation for single crown restorations.

Brief course programme:

During the course students learn about the basics of gnathology, the occlusal morphology of

premolar and molar teeth, the use of articulators, and the basic preparation rules required for single crown restorations.

Competences:

The students will be able to build up the occlusal morphology of molar and premolar teeth and will understand the occlusion theories. The practical work makes students capable of performing the basic tooth preparation for full veneer crowns in preclinical conditions.

Requirements of the subjects:

Lectures and practices according to the timetable of the subject

Active attendance during practices is required.

The amount of absences cannot exceed two practices.

Assessment: End semester exam (ESE), electronic (tablet) test

The exams ('A' 'B' or 'C') held during the exam period are written (tablet) tests.

Oral exam will be held only on the "C" chance exam, in case the student fails the written (tablet) exam.

The grades of the exams, will be calculated as the following:

- 0-59% fail (1)
- 60-69% pass (2)
- 70-79% satisfactory (3)
- 80-89% good (4)
- 90%- excellent (5)

Department of Biochemistry and Molecular Biology

Subject: BIOCHEMISTRY II.

Year, Semester: 2nd year/2nd semester Number of teaching hours: Lecture: **46** Seminar: **28**

1st week:	Signal transduction 2 hours
Lecture: Gene expression 4 hours	Forms of external signals. Receptors and
Levels of eukaryotic gene expression. The active	transducers. Signaling pathways of non
chromatin and epigenome. Signal-dependent	penetrating signals. Ion channel receptors. Seven
transcriptional regulation: the function of nuclear	transmembrane domain receptors. G proteins and
hormone receptors.	GTP-ases. The adenylate cyclase and the
Seminar: General introduction.	phospholipase C signaling pathway. Other
	phospholipases.
2nd week:	Seminar: Lecture topics of the previous week.
Lecture: Gene expression 2 hours	
RNA world: stability, miRNA, siRNA. Inherited	3rd week:
gene expression. Problems related to gene	Lecture: Signal transduction 4 hours
expression. Gene therapy: the restoration of	c ADP ribose as secondary messenger. The
biochemical functions.	cGMP phosphodiesterase system. Signaling via

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one-hydrophobic domain proteins: the cGMP system. Coupling of tyrosine kinase receptors to the signaling pathways, raf, MAP kinases. Cytokine receptors. Cell death receptors. Signals acting via cytoplasmic targets: the NO system. Intracellular signals. Signal crosstalk. **Seminar:** Lecture topics of the previous week.

4th week:

Lecture: Biochemistry of cell proliferation 4 hours

Biochemical regulation of cell cycle. M-phase kinase. Phosphorylation and proteolysis in the regulation of cell cycle. Cell cycle checkpoints. Products and biochemical function of protooncogenes. Mechanism of oncogene formation. Tumor suppressor genes and their biochemical functions.

Seminar: Lecture topics of the previous week.

5th week:

Lecture: Biochemistry of cell proliferation and apoptosis 2 hours

Definition and forms of programmed cell death. Biochemistry of programmed cell death. Therapeutical possibilities.

Seminar: Lecture topics of the previous week.

6th week:

Lecture: Biochemistry of the liver 3 hours

Biotransformation. The central role of liver in metabolism. Zonal heterogeneity. Biochemical consequences of ethanol consumption.

Hem synthesis and degradation 1 hour

Hem-proteins. Synthesis of hem, regulation of the synthesis. Disorders in hem synthesis. Degradation of hem: formation, conjugation and excretion of bile pigments. Hem oxygenase. Seminar: Lecture topics of the previous week. Self Control Test

7th week:

Lecture: Iron metabolism 2 hours

Iron transport, storage and distribution in the human body. Molecular regulation of the iron level in cells: stability of transferrin receptor and ferritin mRNA, IRE binding protein. Risk of the free iron: oxidative stress and adaptive mechanisms. Iron deficiency states and hemochromatosis.

Biochemistry of blood clotting 2 hours

Definition and key steps of hemostasis. Cellular, humoral and vascular aspects of blood clotting. Structure, activation, adhesion and aggregation of thrombocytes. Resting, activated and super activated thrombocytes. The inhibition of thrombocyte activation.

Seminar: Lecture topics of the previous week.

8th week:

Lecture: Biochemistry of blood clotting 4 hours

Classification of blood clotting factors and their role. Factors depending on vitamin K. Complexes in blood clotting: structure and importance. The initial phase of blood clotting in human body and in test tube. The advanced phase of blood clotting. Regulation of blood clotting cascade. The role of thrombin in blood clotting. Role of thrombocytes and the vascular endothelium. Limiting factors, inhibitors and activators of blood coagulation. Fibrinolysis. **Seminar:** Lecture topics of the previous week.

9th week:

Lecture: Biochemistry of the sport 2 hours

Molecular mechanism of force generation. Metabolic fuel of muscle. Aerobic and anaerobic work. Metabolism of muscle in various work load. Effect of exercise. Doping agents. Sarcopenia and its treatment. Myopathy (genetic and acquired).

Biochemistry of nutrition 2 hours

Vitamins. Structure, biochemical functions. Relationship between the biochemical functions and the symptoms of deficiency. Essential inorganic elements of the food (metabolism, function, deficiency).

Seminar: Lecture topics of the previous week.

10th week:

Lecture: Biochemistry of nutrition 1 hour

Energy storage and heat production. Basal metabolic rate. Proteins as N and energy source. Protein malnutrition. Vegetarianism. Clinical aspects of protein nutrition. Carbohydrates and lipids.

Biochemistry of adipose tissue and obesity 2

hours	tenascin, etc).
Types of adipocytes, adipocyte differentiation,	Biochemistry of skin 1 hour
adipokines. Heat generation in brown/beige	Biochemical processes in the skin. The
adipocytes, batokines.	endocannabinoid system.
Obesity. The molecular background of the	Seminar: Lecture topics of the previous week.
regulation of appetite: orexigenic and	
anorexigenic signaling. Effects of incretins on	12th week:
appetite regulation. Human obesity genes,	Lecture: Dentist biochemistry 3 hours
genetic predisposition. Molecular background of	Molecular determinant of tooth development.
drug targets.	Cytodifferentiation during tooth development.
Metabolic syndrome 1 hour	Odontoblast and ameloblast differentiation. The
The effects of abdominal obesity. Role of	general interpretation of mesenchymal
macrophages in adipose tissue. The mechanism	cytodifferentiation for epithelial cells. Growth
of disease formation: type 2 diabetes and	factors and hormone-like molecules influence
vascular diseases.	dentin and enamel biomineralization.
Seminar: Lecture topics of the previous week.	Amelogenins and their functions. Functions of
	salivary proteins. Biochemical mechanism of
11th week:	plaque and salivary calculus formation
Lecture: Biochemistry of the extracellular	Composition of saliva: inorganic, organic and
matrix 3 hours	macromolecules. Saliva diagnostics and its
Function and components of ECM.	diagnostic uses.
Glycosaminoglycans and proteoglycans.	Seminar: Lecture topics of the previous week.
Collagens: structure, function and genetic origin.	Self Control Test
Synthesis of type I. collagen. Macromolecular	
organization of collagen monomers. Disorders in	13th week:
the synthesis of collagen. Collagenases. Structure	Lecture: Overview lectures 2 hours
and function of elastin. Elastase. Structure and	Seminar: Lecture topics of the previous week.
functional domains of fibronectins. Plasma and	
tissue fibronectins, genetic background:	14th week:
alternative splicing. Receptors of fibronectins:	Seminar: Lecture topics of the previous week.
integrins and other type of receptors. Role of	
fibronectins. Other adhesion proteins (laminin,	
entactin, thrombospondin, von Willebrand factor,	

Reading materials:

Lubert Stryer: Biochemistry. 10th edition. W.H. Freeman, 2023. ISBN: 978-1319498504. Thomas M. Devlin: Textbook of Biochemistry with Clinical Correlations. 7th edition. John Wiley & Sons, 2010. ISBN: 978-0-470-28173-4.

Requirements for signing the semester: attendance in the seminars.

Required knowledge from Biochemistry II.: topics of cell- and organ biochemistry presented at the lectures and topics discussed in the seminars. Lecture slides will be uploaded before the lectures to the https://elearning.med.unideb.hu website of the Department (Faculty of Medicine / Department of Biochemistry and Molecular Biology / 06_BMBI Biochemistry II. (II. GM, DENT), login with your university network ID).

Attendance on the lectures is recommended, but not compulsory. Note that getting points on the

seminars will be very difficult without proper understanding of the material, for which the attendance on the lectures is essential.

On the seminars the lectures of the previous week can be discussed. Participation in all seminars is compulsory and can be missed only with medical proofs. The Department will not collect and verify the medical papers up to three missing seminars. In case of more than three absences, the Department refuses the signature. In this case the student may ask the Dean for an override, for these requests students have to deliver the signed, stamped medical proofs (with unique medical document ID) about their all absences. Students can't make up a seminar with another group. On the seminars, students can earn 10 points by writing seminar tests (see more details in the "Information about seminars" file on the e-learning page of the Department). Seminar points are counted for the point collecting system of the semester, but will not be added to the points of the written part of the final exam.

Students can write two control tests during the semester from the material of the lectures and seminars. (Control tests have to be written personally, on-line test-writing is not possible.) Control tests are not obligatory.

In this semester, students can collect maximum 100+10 points: 100 points by writing two control tests based on the lecture material and 10 points by the seminar tests. Control tests consist of all together 80 single- and multiple choice test questions (each for 1.25 points), by the tests maximum 100 points can be collected. Semester points will be automatically erased of those students, who break the rules of test writings.

"Exam bonus points": those students who finally reach at least 65 points in this semester, will get 10 exam bonus points, those who reach 75 points will get 16 exam bonus points that will be added to the results of the written part of the final exam.

Those students, who reaches at least 140 points during the two semesters (Biochemistry I. and Biochemistry II.), will be exempted from the written part of the final exam (for this exemption at least 55 points must be collected separately in each semester).

Final exam. The final exam consists of a written and oral part. On the written exam 100 points can be collected, the test consists of 30 single- and multiple choice test questions (each for 3,33 points) from "Dentist Biochemisry" (5 questions), "Cell- and organ biochemistry" (25 questions). Oral exam can be taken only if the student collects at least 60% (60 points) in the written part. The successful result of the written part is valid for the "B" and "C" exams. In case of unsuccessful written "C" exam, students will get oral questions as well (in this case students can get maximum a passing grade).

The oral part of the examination starts with a question of "basic biochemistry" and a question about a "basic medical orientation problem" (which can be connected to "metabolism" as well and of which biochemical background has to be explained). The "starting" questions have to be answered immediately. After properly answering the "starting" questions, students will have two theoretical questions (one from cell biochemistry and one from organ biochemistry). Questions of the oral examination will be posted on the e-learning site of the department at the end of the semester.

Please follow the announcements of the department on the e-learning page of the department: https://elearning.med.unideb.hu (Faculty of Medicine / Department of Biochemistry and Molecular Biology / 06_BMBI Biochemistry II. (II. GM, DENT), login with your university network ID and

password. Specific rules for repeaters regarding the seminars and practices as well can be found on the elearning site of the Department.

Department of Foreign Languages Subject: HUNGARIAN LANGUAGE II/2. Year, Semester: 2nd year/2nd semester Number of teaching hours: Practical: 28 1st week: Practical: Emlékszel? 9th week: Practical: Utasítások 2nd week: **Practical:** Testrészek 10th week: Practical: Tessék mondani! I. 3rd week: **Practical:** Tünetek 11th week: **Practical:** Tessék mondani! II: 4th week: Practical: Gyógyszerek 12th week: Practical: Anamnézis, összefoglalás 5th week: Practical: Jó és rossz szokások I. 13th week: Practical: Összefoglalás, End-term test (written) 6th week: Self Control Test Practical: Jó és rossz szokások II. 14th week: 7th week: Practical: End-term test (oral) **Self Control Test Practical:** Mid-term test (written) **Self Control Test** 8th week: Practical: Klinikák és szakorvosok

Requirements

Requirements of the course: Attendance

Attending language classes is **compulsory**. If a student is late it is considered as an absence. Students can miss only 10 percent of the classes that is maximum *2 occasions*. In case of more than 2 absences, the signature may be refused. Making up a missed lesson with another group is not allowed.

The teacher evaluates active participation in each class. Students are not supposed to share coursebooks in the classes therefore if they fail to bring the coursebook to the class for the second time the attendance is refused.

Testing, evaluation

During the semester students must sit for **two written language tests**, and **an oral exam.** If a student is late for the test, he/she is not allowed to take it.

A further minimum requirement is the knowledge of 200 words per semester divided into 10 word quizzes. There are five word quizzes before and another five after the midterm test. If a student fails or misses any word quizzes he/she cannot take the written test. A word quiz can be postponed by a week and students can take it only with their own teacher. Students can get bonus points (5-5%) by taking two extra quizzes containing 20 sentences each, before the midterm and end term tests. The sentences are taken from the units of the coursebook. Missed word quizzes cannot be made up for on the day of the written test.

The oral exam consists of a role-play from a list of situations covered in the coursebook. If students fail the oral exam, they fail the whole course. The results of the written tests and the oral exam are combined and averaged.

Based on the final score the grades are given as follows.

Final score Grade

0-59%	fail (1)
60-69%	pass (2)
70-79%	satisfactory (3)
80-89%	good (4)
90-100%	excellent (5)

If the final score of the written tests is below 60%, the student can take a written remedial exam once covering the material of the failed part. The remedial test must be done befor the end of week 14. The oral test can only be taken if the written tests are successful.

Coursebook: Fodor, Marianna - Rozman, Katalin: Beszélek magyarul?! II. Assignments, audio files, oral exam topics and vocabulary minimum lists can be found on the elearning site of the Department of Foreign Languages (www.elearning.med.unideb.hu).

Department of Operative Dentistry and Endodontics

Subject: BASICS IN DENTAL PROPEDEUTICS

Year, Semester: 2nd year/2nd semester Number of teaching hours: Lecture: **1** Practical: **13**

1st week:

Lecture: Theoretical basis of the simulator: use, types of tasks, selection, execution, presentation of basic tools. Online Assessment/test

2nd week:

Practical: Use of the simulator in practice, knowledge of equipment, exercise 1. (K1) **3rd week:** Practical: Exercise 2. (K2)

4th week: Practical: Exercise 3. (K3)

5th week: Practical: Exercise 4. (K4)

6th week: Practical: Exercise 5. (K5) 7th week: Practical: Exercise 6. (K6) 8th week: Practical: Exercise 7. (P1)

9th week: Practical: Exercise 8. (P2)

10th week: Practical: Exercise 9. (P3)

11th week: Practical: Exercise 10. (P4) **12th week:** Practical: Exercise 11. (P5)

13th week: Practical: Exercise 12. (P6)

14th week: Practical: Consultation

Requirements

The aim of the course is to develop the students' manual skills using simulators, to help them develop the skills for the preparation methods used in future dental treatments.

Brief course description:

During the course, students get to know the simulator and learn how to use it during the lecture and the first practice using the educational material uploaded to the e-learning. This prepares them to use the simulator properly without supervision. The students are examined on the acquired knowledge in the form of an online assessment (test). After a successful (100%) online exam, they perform the assigned task on the simulator in the 2x6 hours period of the timetable. Tasks can include tooth morphology, knowledge of tools, perception of hard and soft tissues, perception of differences in tissue resistance, drill guidance, drilling and extension of simple and complex lines, forms, shapes, flat ridges from a direct and indirect approach. All these tasks, on the one hand, contribute to the development of the students' manual skills, and on the other hand prepare them for the preclinical exercises of the next semester.

Exam: 5-grade scale practical grade / AW 5 grade

Examination method: practical grade

Preparation: educational material in the e-learning / material for lectures and practices

The following topics will be covered during the semester:

Obtaining signature:

•Successful online test:

otest can be repeated several times during the given period **but must be fulfilled as a final** deadline till 12.00 Friday of the first week of the semester.

oonly 100% is accepted.

•Student can start performing the required exercises only if he passed the online test.

• The exercises (K1-6 and P1-6) must be completed in the given order, based on prior registration and assignment.

• The practices start and finish following the timetable. 50 minutes are available to complete the exercises. In the case of a delay, less time is left to complete the given task according to the appropriate time interval. It is considered a delay if the student does not log in to the system within

5 minutes of the beginning of the practice.

•In the event of a delay, the practical task can be completed, but the practice is considered similar to an absence and will not be evaluated. Each task assigned to that practice will be counted with 0% when the final grade will be formed. In case of more than three absences or latenesses, the index signature will be refused, and the subject must be repeated.

•The practical work will be evaluated with the grade achieved in percentage.

•The practice is considered to have been *successfully completed and accepted* if the student was present at the given practice, completed the practical tasks and has an evaluable result submitted for all tasks assigned to the given practice. We consider a practice to be accepted if the student has at least one submitted assignment for each task where he has removed at least 60% of the volume of the target (brown colour) (regardless of the leeway (green colour) has been hurt) and did not drill into a prohibited zone.

•In case of absence, the missed practices cannot be made up for. All tasks assigned to the given practice will be counted with 0% when the final grade is formed.

Conditions for obtaining signature:

- •passing the online test (100%)
- •70% of the practices completed successfully (8 practices from the 12).

Practical grade (in the term-time):

•according to the performance of the practical exercises

•Each week, the tasks defined and submitted for the given practice are evaluated by the Simodont system in a percentage value. In the tasks, a target area (target) must be removed from different shapes, forms or teeth so that the leeway surrounding should be damaged as little as possible without touching the forbidden zone outside of it. The volume of the drilled-out target area is measured by the system in percentage, from which the volume portion removed from the leeway is deducted. This value expressed as a percentage will be the result of the given task. If the operator hurts the neighbouring forbidden area, the system evaluates the task as 0%. Unsuccessful tasks can be repeated several times during the given practice.

•In all cases, the highest percentage value achieved for each task is considered the result achieved by the student. We calculate an average from the highest percentage values for all the exercises defined for the practices of the 12 weeks. When calculating the average, all practical tasks not completed or completed but not counted due to absence or lateness are considered 0%. These percentages are converted to grades as follows:

 0-39.9 %
 fail (1)

 40-54.9 %
 passed (2)

 55-69.9 %
 satisfactory (3)

 70-84.9 %
 good (4)

 85-100 %
 excellent (5)

•The grade is determined based on the performance provided throughout the semester - therefore, as determined by the faculty - the grade cannot be improved during the exam period. The failed practical grade (1) means the student must repeat the course.

Textbook:

James B. Summitt, J. William Robbins, Thomas J. Hilton, Richard S. Schwartz, Jose Dos Santos Jr.: Fundamentals of Operative Dentistry: A Contemporary Approach. Quintesences Publishing Co, Inc 2006., ISBN-10: 0-86715-452-7. (in Chapter 6: Nomenclature and Instrumentation. pages: 147-152)

Prerequisites of taking the subject: Introduction to Dentistry, Preventive Dentistry I. 196

Department of Physiology

Subject: **DENTAL PHYSIOLOGY II. LECTURE** Year, Semester: 2nd year/2nd semester Number of teaching hours: Lecture: 48 Seminar: 28

1st week: Lecture: Quantitative description of kidney functions Glomerular filtration Tubular transports Urinary concentration & dilution	Endocrine and paracrine regulation of gastrointestinal functions Secretion of saliva, chewing, swallowing 8th week: Lecture: Motor functions of the gastrointestinal tract
2nd week: Lecture: Water-balance, osmoregulation Control of body fluid volume Acid-base balance Acid-base disturbances,	Exocrine functions of stomach, pancreas, liver and intestines Absorption of nutrients Food intake and its regulation
3rd week: Lecture: Calcium homeostasis II; Physiology of bone Potassium balance, mycturition	9th week: Lecture: Energy balance Regulation of body temperature General functional features of neurons and glial cells
4th week: Lecture: General principles of endocrinology Hypothalamus-pituitary system, Growth hormone The thyroid gland	10th week: Lecture: Function of synapses, vesicle release. Basic neural interactions in the CNS. Self Control Test
Self Control Test	11th week: Lecture: Physiology of sensory functions and
5th week: Lecture: Calcium homeostasis Calcium Physiology of bone The hormones of adrenal cortex The hormones of adrenal medulla	skin sensation. Pain and temperature sensation. Physical basis of sensory functions I. (wave actions).
6th week: Lecture: The hormones of pancreatic islets Regulation of pancreatic islet function General principles in the regulation of gonadal functions 7th week:	12th week: Lecture: Physical basis of sensory functions II. (optics). Retinal mechanisms of vision. Eye-movements, optical reflexes, basic mechanisms of color vision. Taste and olfaction
Lecture: Female & Male gonadal functions Neural regulation of gastrointestinal functions	13th week: Lecture: Role of brainstem in motor
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CHAPTER 17

coordination.
Role of cerebellum, basal ganglia and cerebral cortex in motor coordination
Vegetative system: peripheral, spinal and brainstem vegetative mechanisms.
14th week:
Lecture: Hypothalamic functions.
Monoaminergic system, motivation, reward, addiction, regulation of behaviour.
Sleep, wakefulness, attention, mechanisms of circadian rhythm.
Learning, memory, speech.
Self Control Test

Requirements

1. Verification of the semester

Attendance of lectures and seminars is compulsory. The signature of the semester may be refused in case of more than three absences from the seminars. In cases of more than 2 lecture absences these special advantages are withdrawn (see below). Completion of a missed seminar with a different group is not possible.

Each student must attend on seminars with the group specified by the Education Office. For continuous updates on all education-related maters, please check the elearning.med.unideb.hu web site (Department of Physiology menu item).

The Dental Physiology II lectures are listed at the elearning.med.unideb.hu web site, too.

2. Evaluation during the semester

The knowledge of students will be tested 3 times during the 2nd semester in the form of a written test (multiple choice questions). Participation on mid-semester written tests is compulsory and the results of all mid-semester tests will be presented to the examiner during the final exam. During this semester there will be no remedial test. We do not provide any possibilities to improve or make-up for missed tests.

3. Examination

The second semester is closed by the final exam (FE), which is composed of a written test plus an oral section, covering the topics of all lectures, seminars and laboratory practices of the full academic year. The result of the exam is failed if the student fails either on the written part or on the oral part. The list of exam questions is available on the elearning.med.unideb.hu web site (Department of Physiology menu item).

- If one wishes to improve his/her former Physiology exam mark, it is possible to take improvement exam. Note that the mark of improvement exam depends on the actual actual performance, even if it is worse than the previous result!

Depending on the average result of the self-controls of 2024/2025 academic year, the following special advantages are granted:

The average score of the six mid term SCTs (three in the first term and three in the second semester) is calculated. (If one took the end-semester examination during the 2024/2025 academic year, the calculation of his/her average is detailed below.)

a). If the average score is 80% or higher, there is no need to take the written part of the final exam, and only the oral examination will be performed.

b). If the average score is between 70% and 80%, 10 bonus points will be added to the result of the written part of the final examination.

c). If the average score is between 60% and 70%, 5 bonus points will be awarded.

These special advantages are withdrawn -if the signature of the semester is refused; or -in cases of more than 3 lecture absences.

-If the result of the written examination together with the bonus points does not reach the 60% limit, the examination attempt will be regarded as a failed exam, without giving the chance to perform the oral part.

If one took the end-semester examination during the 2024/2025 academic year, the mark of the oral exam is converted into percentage scores in the following way (each 1st term self-control will be replaced with these percentage scores):

-If the examination was attempted because no score could be offered (i.e. one had to take the exam): 2: 65%; 3: 75%; 4: 85%; 5: 95%.

-If one had an offered grade and it was improved, then the conversion is: 2: 69%; 3: 79%; 4: 89%, and 5: 100%.

Subject: DENTAL PHYSIOLOGY II. PRACTICAL

Year, Semester: 2nd year/2nd semester Number of teaching hours: Practical: **12**

9th week:	
Practical: EXAMINATION OF THE CRANIAL	12th week:
NERVES	Practical: SIMULATION OF THE ACTION
	POTENTIAL IN THE SQUID AXON
10th week:	
Practical: EXAMINATION OF THE	13th week:
SOMATOSENSORY AND MOTORIC	Practical: Remedial Lab
SYSTEMS	
	14th week:
11th week:	Practical: Lab Exam
Practical: STUDYING THE FUNCTION OF	
PERIPHERAL NERVES AND THE	
INNERVATED MUSCLES	

Reading materials: Physiology Practice. A Laboratory Guide. revised edition.2000.

CHAPTER 18 ACADEMIC PROGRAM FOR THE 3RD YEAR

Department of Biomaterials and Prosthetic Dentistry

Subject: INTRODUCTION TO PROSTHODONTICS III.: PROPEDEUTICS OF TOTAL AND PARTIAL REMOVABLE DENTURES

Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: 14 Practical: 42

 8th week: Lecture: Clasp retention, casted clasps Practical: Try-in denture. 9th week: Lecture: Clinical phases of the RDP fabrication I
Practical: Impression taking for RPDs.
Lecture: Clinical phases of the RDP fabrication II Practical: Total renture's try-in. Total denture'S correction at the first control appointment.
11th week: Lecture: Combined dental prosthesis I Practical: Planning of an RPD on a cast. Factors of RPD's planning.
 12th week: Lecture: Combined dental prosthesis II Practical: Repeater practice. 13th week:
Lecture: Broken denture reparation Practical: Repeater practice.
Lecture: Consultation Practical: Repeater practice.

Requirements

The aim of acquiring the professional content of the subject: The aim of the course is to provide knowledge on removable dentures, and to enable students to perform the clinical phases of removable dentures on a basic level during their 4th year complex practices.

Brief course programme: During the course, students will learn to use impression materials in the fabrication of removable dentures, as well as learn about materials used in removable cases.

Students will learn the clinical phases of removable dentures including treatment planning, patient examination and clinical phases. They also receive training on how to deliver dentures, on patient instruction and on how to communicate with patients.

Competences: The student gains competence to treat simple totally and partially edentulous cases including treatment planning.

Requirements:

* Attendance of lectures is highly recommended, attendance of practices is compulsory. For information about time and place please see the timetable.

* The ratio of missed practices cannot exceed 20%. All the missed practices must be certified.

* There is no possibility to compensate for missed practices.

* Practical work will be evaluated at the end of each practice separately, as 'accepted' or 'notaccepted'. Certain practices will be evaluated with five grade marks, 'fail' (1) grade automatically means 'not-accepted' practice. The number of accepted practices must be above 50% of all practices.

* A missed practice is 'not-accepted'.

* Two written or oral self-control tests will be held during the semester in the 8th and 14th week. The result of a missed self-control is 'fail'(1). Missed self-control tests cannot be made up.

* The ESE grade will be offered - from 4.00 as good (4), from 4.51 as excellent (5) - based upon the result of the two self-controls and the grades received on the practices.

The offered grade will be calculated in the following form:

(average result of practical grades + grade of the 1st SCT + grade of the 2nd SCT)/3.

The average result of practical grades will be rounded from x.71, rounded down below x.71). * Students who have not achieved an offered grade, or achieved, but have not accepted it, will take an exam in the exam period. Students must indicate the acceptance or rejection of the offered grade in the Neptun system. Students who would like to improve their offered grade in the exam period

must reject the offered grade in the Neptun system before applying for an exam. During the semester the student's performance will be evaluated at least twice (in the 6th and 12th

week). If the student's performance does not reach the required level, the student will receive a documented notification of her/his poor performance. If the student's performance in the 12th week is still unsatisfactory, the subject's lecturer will notify the head of the department

Assessment: End of semester exam (ESE) covering the topics of lectures and practices. A topic list will not be issued. The exam starts with an online entrance test. Students must complete this test answering at least 60% of the questions correctly to continue to the oral exam. If the result of the entrance test is less than 60%, the final exam grade is "failed" (1).

CHAPTER 18

Subject: ODONTOTECHNOLOGY I. Year Semester: 3rd year/1st semester	
Number of teaching hours:	
Lecture: 10	
Practical: 42	
1st week:	7th week:
Lecture: Working phases, preliminary cast,	Lecture: Laboratory phases of partial removable
analysis, custom tray, border marking	denture I.
Practical: Introduction to the instruments, occupational safety. Custom tray fabrication.	Practical: Polishing / Cast fabrication
1 5 5	8th week:
2nd week:	Lecture: Laboratory phases of partial removable
Lecture: Functional cast and occlusal rim	denture II.
fabrication	Practical: Surveying / Pre-duplicating
Practical: Occlusal rims fabrication	
	9th week:
3rd week:	Lecture: Combined dental prosthesis
Lecture: Mounting by average values, tooth	Practical: Duplicating
Setup Prostical: Mounting into articulator	10th weeks
Fractical: Mounting into articulator	I un week: I acture: Broken denture reparation
4th week:	Practical: RPD's way nattern
Lecture: Denture processing	Tractical. IN D 5 wax pattern
Practical: Tooth setup	11th week:
F	Practical: Spruing / Investing
5th week:	
Lecture: Possibilities and problems in	12th week:
determining the centric relation	Practical: RPD metal framework processing
Practical: Denture processing	
	13th week:
6th week:	Practical: RPD metal framework finishing /
Lecture: Dentist-dental technician	Polishing
communication, problems of the total denture	144
working phases	14th week: Dreatical: Dreken denture fixing
racucal: Denuie processing	racucal: Dioken dentule fixing

Requirements

The aim of acquiring the professional content of the subject:

To introduce students to the technology of basic removable dentures. Students get acquainted with the technology of basic removable denture fabrication, as well as with materials, techniques and methods used in dental technology. They enrich their knowledge by gaining theoretical and practical experience.

Brief course programme:

In the frame of the course students will be familiarised with the technology of removable denture

fabrication. During the practices, students will learn and practice the steps of the removable denture fabrication.

Competences:

Students will be able to perform basic odontotechnological steps, processes and understand their theoretical background.

Requirements:

Attendance of lectures is highly recommended but not compulsory. Active participation in the practices is required. There is no possibility to compensate for missed practices. All absences must be certified. The amount of missed practices cannot exceed 3 practices.

Exam: AW5

Method of assessment: AW5 grade based on the result of the practical and theoretical tests. The practical and theoretical tests will be held according to the conditions announced in the first week of the semester. The signature will be refused, if the student's practical performance does not meet the requirements.

Department of Foreign Languages

Subject: MEDICAL HUNGARIAN I.

Year, Semester: 3rd year/1st semester Number of teaching hours: Practical: **28**

1st week:	szakterületek
Practical: Introduction, orientation	
	8th week:
2nd week:	Practical: Mid-term test
Practical: The tooth / A fog anatómiája	Self Control Test
3rd week:	9th week:
Practical: The oral cavity / A szájüreg anatómiája	Practical: Dental problems / Fogak betegségei, tünetek
4th week:	10th week:
Practical: Numbering / A fogak számozása	Practical: General history taking / Általános anamnézis
5th week:	
Practical: Dental materials / Fogászati anyagok	11th week:
	Practical: Dental history taking / Fogászati
6th week:	anamnézis
Practical: Dental tools / Fogászati eszközök	
	12th week:
7th week:	Practical: Instructions / Utasítások a betegnek
Practical: Dental specialists / Fogászati	

13th week: Practical: Complaints / Panaszok

Self Control Test

14th week: Practical: End-term test, evaluation

Requirements

Requirements Requirements of the course:

Attendance

Attending language classes is compulsory. If a student is late it is considered as an absence. Students can miss only 10 percent of the classes that is maximum 2 occasions. In case of more than 2 absences, the signature may be refused. Making up a missed lesson with another group is not allowed.

The teacher evaluates active participation in each class. Students are not supposed to share coursebooks in the classes therefore if they fail to bring the coursebook to the class for the second time the attendance is refused.

Testing, evaluation

During the semester students must sit for two tests. A further minimum requirement is the knowledge of 200 words per semester divided into 10 word quizzes. There are five word quizzes before and another five after the mid-term test. If a student fails or misses any word quizzes he / she cannot take the mid-term and the end-term tests. A word quiz can be postponed by a week and students can take it only with their own teacher.

The endterm test consists of a role-play from a list of situations covered in the coursebook. If students fail the endterm test, they fail the whole course.

Based on the final score the grades are given as follows.

Final score Grade

0-59% fail (1)

60-69% pass (2)

70-79% satisfactory (3)

80-89% good (4)

90-100% excellent (5)

Coursebook: Kovács, Judit: A fogászati szaknyelv alapjai 1.

Assignments, audio files, topics and vocabulary minimum lists can be found on the elearning site of the Department of Foreign Languages (www.elearning.med.unideb.hu).

Department of Immunology

Subject: IMMUNOLOGY

Year, Semester: 3rd year/1st semester Number of teaching hours: Seminar: **28**

1st week:

Seminar: Elements of the immune system. The structure of lymphoid tissues, primary and

secondary lymphoid organs.

2nd week: Seminar: Components and cells of the innate response. Characteristics and function of the	of immune tolerance. Self Control Test
innate immune response.	9th week: Seminar: Inflammation.
3rd week: Seminar: Adaptive immunity. Antigen recognition by B-cells, characteristics of antibodies. The structure and effector functions of antibodies.	10th week: Seminar: mmune response against extracellular pathogens. Immune response against intracellular pathogens.
4th week: Seminar: Antigen presentation, T cell types. The polymorphism of MHC molecules, structure and function of proteins encoded by the major	11th week: Seminar: Types and characteristics of hypersensitivity reactions. Allergic reactions.
histocompatibility (MHC) gene complex.	12th week: Seminar: Mechanisms involved in the
5th week: Seminar: Conditions for T cell activation, effector functions of T lymphocytes.	development of autoimmune diseases. Autoimmune diseases of the oral cavity.
6th week:	13th week: Seminar: Tumour immunology tumour antigens
Seminar: Genetic background of B and T cell receptor diversity. Development of B and T lymphocytes, central immune tolerance.	and anti-tumour immune response, Anticancer immunotherapies.
7th week: Seminar: Antigen-dependent differentiation of B lymphocytes. Germinal centre reaction, isotype switching.	14th week:Seminar: Immunological characteristics of bone tissue. Immune reactions against dental implants. Focal infections.Self Control Test
8th week: Seminar: Immunological memory. Mechanisms	

Requirements

Signing of the Lecture Book:

Participation in the Seminars is compulsory. The Department may refuse to sign the students' Lecture book if he/she is absent from more than three seminars during semester. However, students can make up for a missed seminar with another group; yet, only on the same week. Making up for a seminar should be communicated to both seminar teachers prior to the seminar.

Self control tests (SCTs), offered grades, end-term exam:

During the semester two self control tests (SCT) will be organised (weeks 8 and 14).

The first SCT contains the material of seminars on weeks 1-7. To ensure a solid basic knowledge of immunology, students must score 60 points or above to qualify for the 2nd SCT, hence for an offered grade.

The 2nd SCT contains the material of seminars on week 8-13.

If a student's score for the first SCT is 60 points or above and the score of the second SCT is 50 points or above, she/he will be offered a grade. Should student accept this offered grade, she/he will be exempted from the end-term exam.

The offered grades are calculated by the following algorithm, based on the cumulative percentage points of the two SCTs (i.e. 200 points maximum).

110 – 139: pass (2)

140 – 159: satisfactory (3)

160 – 179: good (4)

180 - 200: excellent (5)

Those students who have not qualified for an offered grade must take the end-term exam during the exam period. The end-term exam consists of a written and an oral part.

"A" exam: To qualify for the oral part of an "A" exam, students must score higher than 70% on the written (entry) exam. Students who score less than 70% on the written part will fail (thus, the oral exam will not take place).

"B" exam: "B" exams are identical to "A" exams except when the student failed the oral, but not the written, part of the "A" exam. With a score of higher than 70% on the written part of the "A" exam, the student is exempt from the written exam on the "B" exam.

"C" exam: "C" exams are oral exams only, without a written entry test.

Those students who would like to improve the grade of a successful ("A" or "B" exam) or do not accept the offered grade, are also exempted from the entry test.

The list of exam topics is available on the departmental website (www.elearning.med.unideb.hu). Lecture materials and other information concerning education can be found on our website at www.elearning.med.unideb.hu.

Reading materials:

Gogolák P., Koncz G.: Short textbook of Basic Peter Parham: The Immune System.

5th Edition. Garland Science, 2021. ISBN: 0-Immunology.

3935-3335-2.

Abbas, A. K., Lichtman, A. H., Pillai, S.: Basic Immunology.7th Edition. Saunders, 2023. ISBN: 0-4431-0519-7.

Department of Laboratory Medicine

Subject: CLINICAL BIOCHEMISTRY I.

Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: **8** Practical: **6**

1st week:

Lecture: 1. Introduction: pathobiochemistry, clinical chemistry, laboratory diagnostics 2. Different levels of laboratory diagnostics (reference values, requesting test, interpretation of results)

2nd week:

Lecture:

3. Laboratory aspects of investigating human disorders

4. Pathochemistry and laboratory signs of cell damage

8th week:

Practical: Hematology I. Bood collection, anticoagulants. Preparation of a blood smear, staining.

10th week:

Lecture: 5. ABO and Rh Blood Groups 6. Other blood group system (Kell, Kidd, Duffy, MN, Ss, I)

11th week: Lecture: 7. Compatibility testing. Transfusion reactions 8. Preparation of blood products

12th week:

Practical: Determination of AB0 and Rh blood groups.

13th week:

Practical: Detection of irregular antibodies, antibody screening, compatibility testing.

Requirements

Participation in practices is obligatory. In case of absences practices should be made up for by attending the practicals with another group on the same week, or a medical certificate needs to be presented. Please note that strictly only a maximum of 2 students are allowed to join another group to make up for an absence.

Requirements for signing the Lecture book: The Department may refuse to sign the Lecture book if the student is absent from practices. The materials of Clinical Biochemistry subject are uploaded on the e-learning website.

Assessment: At the end of the first and second semester there is a written examination (test) assessed by a five grade evaluation. Like the A chance, the B and C chances are written tests. If the written part of the C chance is failed but the student achieves at least 35%, the exam continues with an oral part.

Requirements for examinations: The examination is based on the lecture and practical material (Practicals in Laboratory Medicine, eds.: János Kappelmayer, 2023) as well as the relevant chapters from the textbook of William J. Marshall: Clinical Chemistry (9th Edition, 2021).

Department of Medical Microbiology

Subject: DENTAL MICROBIOLOGY

Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: **28** Practical: **28**

1st week:	6. Mechanisms of antibacterial resistance.
Lecture: 1. Prokaryotic cell structure.	Practical: Sterilization and disinfection.
2. Bacterial pathogenesis.	
Practical: Laboratory safety instructions. The	4th week:
mouth as a microbial habitat. Rules of collecting	Lecture: 7. Neisseria, Actinobacillus,
clinical specimens. Visualizing bacteria.	Actinomyces.
	8. Mycobacteria, Corynebacterium.
2nd week:	Practical: Gram positive cocci.
Lecture: 3. Host defences against bacteria.	
4. Active and passive immunization.	5th week:
Practical: Laboratory diagnosis of bacterial	Lecture: 9. Treponema.
infections. Determining the sensitivity of bacteria	10. Fusobacterium.
to antibiotics.	Practical: Anaerobic bacteria.
3rd week:	6th week:
Lecture: 5. Principles of antimicrobial	Lecture: 11. Oral microbiota.
chemotherapy	12. Dental plaque, caries.

CHAPTER 18

Practical: Bacterial respiratory tract diseases.	11th week:
	Lecture: 21. Human immunodeficiency virus.
7th week:	22. Adenoviruses. Enteric infections by viruses.
Lecture: 13. Bacteria in periodontal diseases. 14. Orofacial bacterial infections.	Practical: Hepatitis viruses.
Practical: Bacterial sexually transmitted	12th week:
diseases (STD).	Lecture: 23. Congenital infections I. 24.
	Congenital infections II.
8th week:	Practical: Agents of viral rash
Lecture: 15. General virology.	
16. The structure and classification of viruses.	13th week:
Practical: Mycology.	Lecture: 25. Human microbiome I.
	26. Human microbiome II.
9th week:	Practical: Infection control in dentistry.
Lecture: 17. Host defences against viruses.	
18. Virus vaccines, antiviral drugs.	
Practical: Diagnosis of viral infections.	14th week:
	Lecture: 27. Overview of infections relevant to
10th week:	dentistry I.
Lecture: 19. Herpesviruses.	28. Overview of infections relevant to dentistry
20. Human papillomaviruses. Picornaviruses.	II.
Practical: Respiratory viruses	Practical: Protozoal infections

Requirements

The students are required to attend at least 11 practices during the semester. The students' **attendance is registered** within ten minutes after the official start of the practice. On request, the students have to provide personal identification to the lab teacher or to the educational technicians. The name of students leaving the laboratory without the permission of the lab teacher will be deleted from the attendance register. The students have to attend the practices with their own study groups.

Three tests are written during the semester. Based on the cumulative results of the tests, students are offered an End-Semester-Examination (ESE) grade. Those who are not satisfied with the offered grade or are bellow the passing level, should sit for an end-semester-examination hold in the examination period (the first oral exam of a student is an A–chance exam). The ESE consists of a written test and an oral examination (there is no practical part).

Department of Operative Dentistry and Endodontics

Subject: ORAL BIOLOGY

Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: 14 Seminar: 14 Requirements for taking up the subject: Odontology, Dental Physiology II. Lecture

1st week:	8th week:
Lecture: Craniofacial development	Lecture: The salivary glands
Seminar: Film on craniofacial development	Seminar: Composition of saliva
2nd week:	9th week:
Lecture: Amelogenesis	Lecture: The gingival crevice. Gingival
Seminar: The mineral component of dental hard	crevicular fluid (GCF)
tissues	Seminar: Dental plaque and calculus
3rd week:	10th week:
Lecture: Dentinogenesis.	Lecture: Temporomandibular joint (TMJ)
Seminar: The fibres and extracellular matrix in calcified dental tissues	Seminar: Discussion of the TMJ
4th week: Lecture: Pain due to dentin sensitivity Seminar: Dentin permeability	Lecture: Mastication and deglutition Seminar: Speech
5th week:	12th week:
Lecture: Tooth displacement, jaw remodelling	Lecture: Oral mucosa. Oral sensation
Seminar: Cementogenesis	Seminar: Taste
6th week: Lecture: Eruption (phases, theories) Seminar: Shedding of primary teeth. Abnormal behaviour of primary teeth	13th week:Lecture: Nutrition in relation to Oral Biology.VitaminsSeminar: Metabolism of fluoride. Toxic effects of fluoride
7th week:	14th week:
Lecture: Development of the dental pulp. Pulp	Lecture: Theories of ageing. The ageing mouth
matrix	Seminar: Effects of ageing in relation to the
Seminar: Blood and nerve supply to the pulp	mouth (hard and soft tissues, oral functions)

Requirements

Requirements for taking up the subject: Odontology, Dental Physiology II. Lecture Course objectives

The aim of the course: 3rd year students need to know at the exam the anatomy, histology and physiology of the surrounding tissues and organs of oral cavity.

Short description of the course

Lectures and seminars deal with the surrounding organs and tissues of the human oral cavity. Important subjects: toxicity of fluorides, mastication, deglutition and taste function. Other important themes: tooth-sensitivity and alterations of the hard- and soft tissues of the mouth in aged people.

Requirements for signing the lecture book:

The seminars start and finish in accordance with the timetable, arriving late is not allowed.

Students are required to stay at the premises of the seminar from the beginning to the end of the class.

Missed classes cannot be more than 1 out of the total seminar classes.

A certification is required for any absences which has to be handed to the leader of the seminar course.

Missed seminar classes cannot be made up for.

Examination: at the end of the semester (ESE_oral exam).

Materials for exam preparation: official lecture book, lectures and materials of the seminars. Course exemption

Attendance at the course is not mandatory with valid signature obtained in a previous semester, therefore exemption from attending practices can be requested. The prerequisite for this is that the student needs to submit the request on the appropriate form via https://elearning.med.unideb.hu system at the corresponding course no later than the last working day of the first week of education.

Subject: **RESTORATIVE DENTISTRY PROPEDEUTICS I. (CARIOLOGY)** Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: **14** Practical: **56** Requirements for taking up the subject: Dental Physiology II. Lecture, Basics in Dental Propedeutics

1st week:	3rd week:
Lecture: Dental caries characteristics,	Lecture: The protective role of liners and bases.
hystopathology. Caries and cavity classification,	Amalgam restorations in cavity class I. cases.
nomenclature. Basic rules of cavity preparation	Finishing, polishing of amalgam restorations
Practical: Subject, aims and methods of	Practical: Preparation of cavity class I. for
propedeutics. Labour health regulations and rules	amalgam restoration with mirror using technique
of the Phantom lab. Handing out the instruments.	
Introduction of Fantom head. Practice in drilling.	4th week:
Positions	Lecture: Preparation of cavity class V., VI. for
	amalgam restoration. Lower and upper premolar
2nd week:	and molar cases. Amalgam restorations in cavity
Lecture: Class I. cavity preparation for amalgam	class V., VI. cases
restoration. Lower and upper premolars and	Practical: Placement of liners and bases.
molars	Amalgam restoration in cavity class I. case
Practical: Introduction of dental materials.	
Mixing, insertion and usage of the dental	5th week:
materials in practice	Lecture: Preparation of cavity class II. for
-	amalgam restoration. Lower and upper premolar
	and molar cases

Practical: Finishing, polishing of amalgam restorations. Preparation of cavity class V for	for composite restorations
amalgam restoration	10th week:
	Lecture: Composite restoration in cavity class
oth week:	III., IV. V cases
Lecture: Matrices, retainers, wedge placement.	Practical: Composite restoration in cavity class
separation of the teeth. Amalgam restorations in	111., v .
Practical: Written evem I	11th wook.
Pamoval of amalgam restarations. Propagation of	Lasture: Composite restoration in cavity class I
cavity class II for amalgam restorations with	U VI cases
mirror using technique Matrices and retainers	Practical: Written exam II
Placement of guttanercha based temporary	Composite restoration in cavity class I. II
restoration	composite restoration in eavity class 1., 11.
	12th week:
7th week:	Lecture: Preparation for composite restorations
Lecture: Composites. Adhesive technique.	Conventional, modified conventional, and
Adhesion on the enamel and dentin surface	minimal invasive preparation techniques
Practical: Removal of gutta-percha based	Practical: Composite restoration in cavity class
temporary restoration. Placement of amalgam in	IV.
cavity class V. and II. cases	
5	13th week:
8th week:	Lecture: Self control test
Lecture: Preparation of cavity class III., IV., V.	Practical: Insertion of temporary restorative
for composite restorations. Lower and upper	material. Cavity preparation in real tooth,
incisor, canine cases	removal of the caries. Introduction of Supermat
Practical: Preparation of cavity class III., IV., V.	matrix system
for composite restorations	
	14th week:
9th week:	Lecture: Registration of dental status. Making a
Lecture: Preparation of cavity class I., II., VI.	problem orientated treatment plan. Consultation
for composite restorations. Lower and upper premolar molar cases	Practical: Practical exam
Practical: Preparation of cavity class I., II., IV.	

Requirements

Course objectives

The aim of the course: fundamental principles of cavity preparations and direct restorations are the topics of lectures and practices.

Short description of the course

In lectures and practices at the end of course the students will be familiar with dental instruments and equipments, the different types of cavity preparations and materials for the direct restorative concepts. The practices interventions will be performed on plastic teeth which assissested into Manekins' head simulating real clinical situations.

Examination: Five grade (AW5) practical grade evaluation

Materials for exam preparation: official lecture book, lectures and materials of the practicals. Requirements for signing the lecture book:

• During the semester one written test will be held in lecture time in accordance with the

requirements of the curriculum. The missed test can be made up for in a given time designated by the Department after officially proof of absence. In addition, two pre-announced written tests will take place in practical time. Furthermore, several tests may be held without prior announcement. The results of any missed pre-announced test conclude to failure (1). The result cannot be improved.

• The practices start and finish in accordance with the timetable, arriving late is not allowed.

• Students are required to stay at the premises of the practical from the beginning to the end of the class and participate actively in the practical work.

• Missed classes cannot be more than 20% of the total practice classes.

• A certification is required for any absences which has to be handed to the leader of the practice course.

• Missed classes cannot be made up for.

• The practical exercises performed during the cariology propedeutics course are evaluated with a grade.

• The cariology propedeutics course is successfully performed and may be accepted if the student is present at the practices, completes all the practical exercises, and none of the grades received for the practical exercises is a failed grade (grade 1).

• Those students who get fail for cavity preparation, have the possibility to practice the certain task on dental simulator in the following two weeks. The work on the simulator is independent of the course, it does not modify the final mark.

• For signing the index it is required to have at least 71% successfully completed and accepted practices.

• Any missed practices result in a failed grade.

• On the 14th week student is required to take a practical exam.

Grade formation:

• The average of obtained grades for all practical assignments and unannounced tests completed in 13 weeks, +

• The average of the result pre-announced written tests during the practices (2), and the written test taken during a lecture (1), +

• The result of the practical exam, (an average of the grades)

the mean of these grades gives the final AW5 grade.

Department of Pathology

Subject: GENERAL PATHOLOGY

Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: **28** Seminar: **14** Practical: **28**

1st week:

Lecture: -Introduction to anatomical patology. Macropsy, autopsy-Surgical pathology: Methods and reporting **Practical:** Introduction

2nd week:

Lecture: -Adaptation on cellular level-Morphology of the reversible cell injury and cell death (swelling, fatty change and necrosis) **Practical:** 1. Acute myocardial infarction (coagulation necrosis) 2. Gangrene in the lower leg 3. Fat necrosis in the pancreas 4. Caseous

necrosis (lymphadenitis tuberculosa)	salpingitis 25. Foreign body granul
3rd week:	8th week:
Lecture: -Abnormal glycogen and protein	Lecture: -Prognostic and predictiv
accumulation. Storage diseases. Amyloidosis.	markersMechanisms of local and
PigmentsOedema. Hyperemia. Congestio.	spread. Angiogenesis.
Shock.	Practical: 26. Keratoachantoma 27
Practical: 5. Fatty change in the liver 6. Fatty	28. Bowen's disease 29. Invasive c
change in the liver (lipid staining) 7.	
Atheromatous plaque 8. Cholesterolosis in the	9th week:
gallbladder9. Atrophia brunea cordis	Lecture: -The biology of tumor gro
	Heredity in cancerOpportunistic
4th week:	Systemic effects of neoplasia.
Lecture: -Haemorrhage. Thrombosis. Embolism.	Practical: 30. Signet ring cell carc
DICMorphological patterns of acute	stomach (PAS) 31. Krukenberg typ
inflammatory response.	metastasis (PAS) 32. Liver metasta
Practical: 10. Simple endometrial hyperplasia	Teratoma adultum (cysticum) ovar
11. Atrophia endometrii et myometrii 12.	Leiomyoma
Nodular hyperplasia in the prostate 13. Bile	
stasis in the liver due to extrahepatic bile duct	10th week:
obstruction	Lecture: -Mono-, and polyclonal d
	Immunodeficiencies. Tuberculosis.
5th week:	Practical: 35. Allergic vasculitis 3
Lecture: -The role of macrophages in	nodosa 37. End stage lesion in Bur
inflammation. Granulomatous inflammation.	38. Gouty tophus
AmyloidosisTissue regeneration. Reparation	
and wound healing. Calcification.	11th week:
Practical: 14. Amyloidosis (Kongó staining) 15.	Lecture: -Humoral and cellular
Arterias thrombus 16. Necrosis of the small	immunopathological mechanisms.
bowel due to incarceration 17. Hemorrhagic	pathology of transplantation. Autoi
infarct in the lung	Practical: 39. Polymiositis 40. SLI
	lymphadenopathy 41. Chronic sync
6th week:	(Rheumatoid arthritis) 42. Rheuma
Lecture: -Dysplasia, preneoplastic conditions	(Rheumatoid arthritis)
Characteristic of benign and malignant tumors.	
Differentation and anaplasia.	12th week:
Practical: 18. Pulmonary edema 19. Nutmeg	Lecture: -Systemic autoimmune di
liver 20. Appendicitis acuta suppurativa 21.	Sjogren, KA, SS) Vasculitis.
Meningius purulenta	Practical: 45. Gaucher's disease 44
7th marks	(CLL) 46 Eallioular branch and (E
/III week: Lasture: Characteristics of tumor call	(CLL) 40. Follicular lymphoma (F)
nonulations (alonality, hotorogenity and	13th wook:
progression) Tymor dignity Proliferation	I opturo. Dathology of the lymphe
Grading and staging	Malignant lymphomag, lymphoid 1
Oraunig and stagnig.	wanghant rymphomas, rymphold l

Practical: 22. Bronchopneumonia with lung abscess 23. Septic abscesses in the myocrdiumban due to systemic fungal infection (PAS staining) 24. Chronic non-specific

loma

e tumor distant tumor 7. Condyloma ervical cancer

owth. infections. inoma in the e ovarian sis 33. ii 34.

lisorders. -6. Polyarteritis ger's disease

-The immunity. E ovitis toid nodule

iseases (SLE, 4. Toxoplasma tic leukemia L)

tic system. eukaemias. Practical: 47. Diffuse large B-cell lymphoma (DLBCL) 48. Gastric lymphoma (MALT type) 49. Hodgkin's disease (HL) 50. Myelofibrosis

CHAPTER 18

14th week: Lecture: -AML. Chronic myeloproliferative disorders. -Myelodysplasia. Anaemias. Pigments.

Practical: Repeating practice

Requirements

Pathology I-II.

Textbook: Robbins' Basic Pathology, 10th Edition (Elsevier) Lectures: PPT slides of all lectures (uploaded for the actual week) Practicals (weekly packages): -histopath slides -macro preps -topic-wise supporting content Test bank: continously available from the e-learning site Downloadable material: Department of Pathology

Validation of Semester:

-Histopathology and macro pathology (autopsy) classes are compulsory.

-Participation will be verified by the lecturer right before the class.

-Missing of two practical classes (histo and macro pathology together) is tolerable.

-Intracurricular replacement of histo and/or macro pathology classes is possible on the same week.

Examination:

1st semester (Pathology 1): **End of Semester Examination** (ESE) 2nd semester (Oral and Organ Pathology 2): **Final exam** (FE). **The Exam consists of:** online test, practical exam and oral test.

Written and practical exams (proposed timing):

Pathology theory test (week 13):

-The test bank of the written pathology test can be found on the departmental E-learning website -85% is to be reached for pass.

-In the 2nd semester the questions comes from the 1st and the 2nd semester

Histopathology exam (computerized - week 14):

-The computerized histopathology exam consisted of 6 microscopic slides with related questions.

-Digital slides and learning material public on the E-learning andsite.

-85% correct answers are required for pass.

-In the 2nd semester exam slides come from the 1st and 2nd semester.

Macro practical exam (autopsy room - week 14):

-This practical exam takes place in the autopsy room.

-Oral presentation and interpretation of macro preparations is expected.

-1-5 grades. Grade 2 (pass) is required for the succesful exam.

Pass of all 3 exams are required for entry to the ESE and FE. Any failed test is to be repeated on the exam day before starting the oral part

Oral exam:

Oral presentation and discussion of topics choosen from the topic list. ESE: Two randomly choosen 1st semester topics to be presented.

FE: Three randomly choosen topics (one from the 1st semester, and two from the 2nd semester).

The knowledge of students is judged on the five-grade evaluation scale (1-5 grades).

During the oral exam fail on any (possible) substation (written, practical, oral) means termination of the chance. The exam must be repeted from the part that failed.

During improvement exam only the oral exam topics must be repeated (the student can get worse grade than the previous one or possibly can fail).

Department of Periodontology

Subject: PERIODONTOLOGY PROPEDEUTICS I.

Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: 2 Practical 8

6th week

6th week:	instrumentation strokes)
Lecture: Anatomy and physiology of	
periodontium, tooth surface deposits, bacterial	10th week:
biofilm	Practical:
Practical: Fundamentals of periodontal	Fundamentals of periodontal instrumentation III.
instrumentation I. (math principles, positioning,	(probe: basic, explorers, debridement concepts,
instrument grasp, anterior rests, mandibular posterior rests)	sickle scalers, periodontal files)
- /	11th week:
7th week:	Practical:
Lecture: Periodontal examination, oral hygiene motivation, disclosing agents, plaque and gingival indices	Fundamentals of periodontal instrumentation III. (probe: basic, explorers, debridement concepts, sickle scalers, periodontal files)
Practical: Fundamentals of periodontal	
instrumentation I. (math principles, positioning,	12th week:
instrument grasp, anterior rests, mandibular	Practical: Fundamentals of periodontal
posterior rests)	instrumentation IV. (universal curets, area-
	specific curets, instrumentation strategies and
8th week:	patient cases)
Practical: Fundamentals of periodontal	
instrumentation II. (maxillary posterior rests,	13th week:
design, adaptation-angulations, activation,	Practical: Fundamentals of periodontal
instrumentation strokes)	instrumentation IV. (universal curets, area-
	specific curets, instrumentation strategies and
9th week:	patient cases)
Practical: Fundamentals of periodontal	
instrumentation II. (maxillary posterior rests,	
design, adaptation-angulations, activation,	

Requirements

Prerequisites of taking the subject: Odontology, Dental Physiology II

The aims and objectives of this course:

-learning the basic anatomy and physiology of periodontium
-have knowledge and understanding of the etiology of periodontal diseases
-fundamental characteristics of plaque-induced gingivitis and chronic periodontitis
-achieve basic knowledge about periodontal hand scaling instruments

Short description of the course:

-practice a root surface debridement on phantom head prior to seeing their first patient on the clinical sessions

Requirements:

Student attendance is mandatory and a record is taken at each practice. The Department may refuse to sign the students' index if they are absent from more than 20% of all practical lessons in a semester.

Lectures: As given in the timetable (time & place) Practices: In the building of Faculty of Dentistry (Phantom lab.)

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested.

Conditions of signing the index:

-active participation in practices -no more absence than 20%

Assessment: AW5

Calculation of the practical grade:

AW5 grade consists of proper practical work and successful test. In case of failing, exam 'B' and 'C' can be taken during the exam period.

Compulsory reading:

Carranza's Clinical Periodontology 12th Ed., Elsevier ISBN:9780323227995 -lectures and practices materials (handouts are available)

Recommended reading:

J. S. Nield-Gehring: Fundamentals of Periodontal Instrumentation 6th Edition, 2008 Lippincott Williams & Wilkins. ISBN 978-0-7817-6992-1
Department of Biomaterials and Prosthetic Dentistry

Subject: INTRODUCTION TO PROSTHODONTICS IV.: PROPEDEUTICS OF FIXED PROSTHODONTICS

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 14 Practical: 42

1st week:	
Lecture: Tooth preparation for bridges. Insertion	8th week:
direction. Evaluation of abutment teeth.	Lecture: Post and core restorations I.
Prosthetic value of abutment teeth.	Practical: Preparation for bridge.
Practical: Preparation for bridge (molar and	
premolar). Alginate impression of antagonist	9th week:
arch.	Lecture: Post and core restorations II
	Practical: Preparation for bridge. Impression
2nd week:	making of preparation arch.
Lecture: Impression making for fixed prosthesis	
I.	10th week:
Practical: Preparation for bridge. Alginate	Lecture: Indirect inlay, onlay, overlay
impression.	restorations I.
	Practical: Post and core restorations made with
3rd week:	direct and indirect techniques.
Lecture: Impression making for fixed prosthesis	
II.	11th week:
Practical: Preparation for bridge.	Lecture: Indirect inlay, onlay, overlay
	restorations II.
4th week:	Practical: Preparation for inlay restoration in
Lecture: Provisional restorations I.	molar tooth.
Practical: Preparation for bridge. Impression	
making of preparation arch.	12th week:
	Lecture: Treatment planning of combined
5th week:	prosthesis I. Clasp holder crowns.
Lecture: Provisional restorations II.	Practical: Preparation for bridge and crown.
Practical: Preparation for bridge and crown	
	13th week:
6th week:	Lecture: Treatment planning of combined
Lecture: Framework try in and biscuit probe of	prosthesis II. Precision attachments.
fixed prosthesis.	Practical: Preparation for bridge and crown.
Practical: Making of provisional crown.	
	14th week:
7th week:	Lecture: Consultation
Lecture: Cementation. Removal of fixed	Practical: Preparation for bridge and crown.
prosthesis.	
Practical: Preparation for bridge and crown	

Requirements

The aim of acquiring the professional content of the subject:

CHAPTER 18

The aims of the subject are to practise the clinical steps of basic fixed prosthesis in preclinical (phantom head) circumstances. Students are introduced in the use of different materials, techniques and methods in preparation of the basic fixed prosthesis. Students will acquire the steps of fabrication of basic fixed prosthesis which is necessary to the clinical work.

Brief course programme:

In the course students learn the fabrication process of basic fixed prosthesis, the indications and contraindications of fixed prosthesis. Students will practise the clinical steps of basic fixed prosthesis in phantom head to prepare for the clinical work.

Competences:

The student will be able to do fixed prosthesis including crowns, bridges and dowel core restorations.

Requirements:

Lectures and practices according to the timetable of the subject. It is not allowed to late from practices. Active attendance during practices is required.

The amount of absences cannot exceed two practices.

Each practice between week 6-14 will be evaluated as accepted or non-accepted. If the number of non-accepted practices exceeds 4, the signature will be rejected. In this case the subject cannot be completed during the semester.

Assessment: FE (involving possibility of failure), with electronic tablet test as entrance test. Final exam covering the topics of Introduction to Prosthodontics I-IV and Odontotechnology I-II. Condition of taking the final exam: successfully completed Odontotechnology II. The exam starts with an online (tablet) entrance test. Students must complete the entrance test answering at least 60% of the questions correctly to continue to the oral exam. If the result of the

answering at least 60% of the questions correctly to continue to the oral exam. If the result of the entrance test is less than 60% the final exam grade is "fail" (1). In case of a 'C' chance exam the final (oral)exam will be held in the presence of an exam committee, even if the student failed the entrance test.

Subject: ODONTOTECHNOLOGY II. Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 10 Practical: 42	
1st week:	Practical: Mounting into articulator
Lecture: Working cast and dies	
Practical: Working cast and dies	4th week:
C	Lecture: Wax lost technique
2nd week:	Practical: Making wax pattern
Lecture: Articulators	
Practical: Working cast and dies	5th week:
C	Lecture: Processing of the metal framework
3rd week·	Practical Making wax nattern
Lecture: Making wax pattern	The full that the start puttern
	1

ACADEMIC PROGRAM FOR THE 3RD YEAR

6th week: Lecture: SCT Practical: Sprue placement, Investing, Burnout,	impression) 10th week:
casting	Lecture: SCT
7th week:	Practical: lechnology of provisional restoration
Lecture: Technology of aesthetic covering of	11th week:
Practical: Cleaning the casting sandblasting	Practical: Ceramic covering (opake layer)
Tractical. Cleaning the custing, sundolasting	12th week:
8th week: Lecture: Technology of casted post and core	Practical: Ceramic covering (finishing)
restoration	13th week:
Practical: Processing of the metal framework	Practical: Precision attachments
9th week:	14th week:
Lecture: Technology of the Precision attachments	Practical: Consultation
Practical: Cast fabrication (from own	

Requirements

The aim of acquiring the professional content of the subject:

To introduce students to the technology of basic fixed dentures. Students get acquainted with the technology of basic fixed denture fabrication, as well as with materials, techniques and methods used in dental technology. They enrich their knowledge by gaining theoretical and practical experience.

Brief course programme:

In the frame of the course students will be familiarised with the technology of fixed denture fabrication. During the practices, students will learn and practice the steps of the fixed denture fabrication.

Competences:

Students will be able to perform basic odontotechnological steps, processes and understand their theoretical background.

Requirements:

Attendance of lectures is highly recommended but not compulsory. Active participation in the practices is required. There is no possibility to compensate for missed practices. All absences must be certified. The amount of missed practices cannot exceed 3 practices.

Exam: AW5

Method of assessment:

AW5 grade based on the result of the practical and theoretical tests.

The practical and theoretical tests will be held according to the conditions announced in the first week of the semester. The signature will be refused, if the student's practical performance does not meet the requirements.

Department of Behavioural Sciences

Subject: **BIOETHICS**

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 6 Seminar: 9

1st week:	5th week:
Lecture: General Ethics Introduction –	Seminar: Fundamental Ethical Questions of
philosophical and conceptual overview	Human Trials and Research Integrity
2nd week:	6th week:
Lecture: Modern Medical Ethics – its evolution, character-traits and relation to its predecessors.	Seminar: Casuistry as a Means of Analysis – 1st case analysis
3rd week: Lecture: Patient Rights – their history, importance and challenges in the modern healthcare systems	7th week: Seminar: Questions of Patient Rights and Justice – 2nd case analysis
4th week:	8th week:
Seminar: End of Life Decisions – withholding	Seminar: Wrap-up: Overviewing and
and –drawing treatments, futility, triage	systematizing the semester material

Requirements

Requirements: Grade: Colloquium Requirement of the signature: taking part in the seminars, one absence allowed Compulsory readings: Gregory E. Pence - Medical Ethics -Accounts of Ground-Breaking Cases McGraw-Hill Education, 2016 Guidry-Grimes, Laura, Veatch, Robert - The Basics of Bioethics – Routledge, 2019

About the course:

The course outlines and explores the basics of modern bioethics. It helps students orienting in the diverse questions of contemporary bioethics – ranging from its ethical foundations, theories and argumentation, through patient rights and the questions of autonomy, to the end of life decisions and research ethics issues.

On top of laying down the theoretical and conceptual grounds of the subject matter, the course aims to map the national and international legal frameworks and policy environment. Besides, the course's purpose is to train those competences which enables the students to interpret and critically reflect upon the actual laws through general and professional ethical norms, by means of developing their rhetorical, logical and philosophical skills.

Subject: MEDICAL PSYCHOLOGY

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 10 Practical: 10

1st week: Lecture: Health and medical psychology: definition, models, the bio-psycho-social model. Seminar: The role of psychology in medical practice.	 5th week: Lecture: Pain - psychological and sociocultural factors. Seminar: Stress management, time management, relaxation.
2nd week: Lecture: Seeking professional help (firstr, encounter, medical history, diagnostic procedure). Doctor-patient interaction, compliance, the "difficult patient".	6th week: Lecture: Chronic diseases, psychological preparation for surgery, intensive care unit, hospitalization.
Seminar: Special problems of medical students and doctors.	7th week: Lecture: Stress and coping (vulnerabiliy, protective factors). Basics of psychology.
3rd week:	
Lecture: Health beliefs, models of health, health behaviours, illness cognitions. Models of illness. Health risk behaviours.	8th week: Lecture: Crisis, presuicidal syndrome, burnout.
Seminar: Phases of doctor-patient consultation.	9th week: Lecture: Somatic symptom and related disorders
4th week:	104h maalu
adult health (ACE). Seminar: Breaking bad news.	Lecture: Placebos and the interrelationship among beliefs, behaviour and health.

Requirements

Evaluation: third year students should pass "End of Semester Examination" (ESE) at the end of the first semester. The Department of Behavioural Sciences will adhere to the requirements of the General Academic Regulations and Rules of Examinations. The student must be present and the examination at the designated time. (He/she must explain the reason for any absence from the examination to the Departmental Adviser within 1 days of the day of examination.) The final mark is the average of the seminar and the lecture results. Both should be better than fail to pass the ESE.

Department of Dentoalveolar Surgery

Subject: ORAL SURGERY PROPEDEUTICS

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 14 Practical: 28

1st week:	8th week:
Lecture: Anatomy of the maxillofacial region	Lecture:
Practical: Introduction of Oral Surgery	Complications of dental extraction
Department	Practical: Practice at dentoalveolar outpatient
-	dept.
2nd week:	
Lecture: Patient examination in the	9th week:
maxillofacial region	Lecture: Consultation
Practical: Complementary examination	Practical: Practice at dentoalveolar outpatient
methods, oral surgery instruments	dept.
3rd week:	10th week:
Lecture: Asepsis, antisepsis, sterility,	Lecture: TEST 2
sterilization in oral surgery	Practical: Practice at dentoalveolar outpatient
Practical: X-ray and other imaging techniques in	dept.
oral surgery	
4th week:	11th week:
Lecture: Local anaesthetics, pharmacology	Lecture: Basic techniques in oral surgery I- II.
Practical: Introduction of the local anesthetic	Practical: Practice at dentoalveolar outpatient
methods	dept.
5th week:	12th week:
Lecture: Complications of local anaesthesia	Lecture: Importance of systemic diseases,
Practical: Practice at dentoalveolar outpatient	medical emergencies and first aid in the
department	dental office
	Practical: Practice at dentoalveolar outpatient
oin week:	dept.
Destingly Desting at dentsolves lar systemation	124h weely
dent	I Software TEST 2
depi.	Dreatical: Dreatica at dentaalyzalar outpatient
7th woole	dent
Lecture. Test I	
Practical. Practice at dentoalveolar outnationt	14th week:
dent	Lecture: Final consultation
uopt.	Practical:
	Practice at dentoalveolar outpatient dept
	ruence at demourveolar outpatient dept.

Requirements

Course objectives: Theory and practice of patient examination (creates the groundwork of dental and oral surgical care), infection control, acquisition of anesthetic methods, tooth extraction techniques applicable in the maxillofacial region.

Brief course description: To learn the fundaments of Dentoalveolar Surgery within the framework of lectures and practices with the help of phantom heads. (patient examination, anesthesia, extractions, and complications of the latter).

Compulsory reading:

Szabó Gy.: Oral and Maxillofacial Surgery Semmelweiss Publishing House, Budapest, 2004., ISBN: 963-9214-15-9

Recommended Book:

James R. Hupp: Contemporary oral and maxillofacial surgery, Mosby, 2014, ISBN: 978-0-323-09177-0

Stanley F. Malamed: Handbook of Local Anesthesia, 6th Edition, Mosby, 2013, ISBN:978-0-323-07413-1

Exam: ESE (end semester exam)

End semester exam has three parts: 1. an e-test, 2. practical part, 3. theoretical part. The end semester exam starts with an e-test that is considered successful if the result exceeds 70%. If this test is not successful, the student may not continue the exam. The e-test has to be repeated in the B chance exam if the student failed the practical part of the exam in the A chance exam. The practical exam consists of the following parts: recognition of instruments, patient examination, demonstration of techniques of local anaesthesia and tooth extraction. The practical exam starts with the task to recognize five (5) instruments, and all five (5) instruments must be recognized, mistakes are not accepted. If any part of the practical exam is unsuccessful, the exam is automatically failed. The practical exam has to be repeated if the previous practical exam part was unsuccessful. If the the first two parts of the exam that are e-test and practice part are successful but the theoretical part is unsuccessful, only the latter has to to be repeated in the next exam. The results of the written tests may be taken into consideration when deciding on the end semester grade.

Assessment:

There are three e-tests during the semester. Missed tests are automatically assessed as fail. If two of three tests are assessed as "Fail", the signature is refused. Those students whose average result of the three tests exceeds 3,51 do not have to do the e-test during the end semester exam.

Course requirements:

Students are required to attend the practices.

Lectures: As given in the timetable (time and place)

Practices: In the building of the Faculty of Dentistry

Active participation in the mandatory lectures and in special practices is mandatory. Arriving late for the lectures and practices is not accepted. There is no possibility to compensate for missed practices. Every student has to participate in the practices in their preassigned groups. There is no possibility to switch between the practical groups. Students may miss practices provided that they can certify their absences in a credible way. The ratio of missed practices may not exceed 20% of all practices even if certified. Wearing of white coat is compulsoryon practices at dentoalveolar outpatient dept. ((from 5th week).

Prerequisites: Oral Anatomy, Histology and Embryology II., Odontology, Biochemistry II. Mandatory lectures:

-Local anaesthetics, pharmacology

-Asepsis, antisepsis, sterility, sterilization in oral surgery

-Complications of local anaesthesia

-Indications and techniques of dental extraction

-Complications of extraction

-Importance of systemic diseases, medical emergencies and first aid in the dental office **Course exemption:** Students who have obtained signature in a previous semester must participate in the lectures and practices. There is no exemption from attending the designated lectures and special practices.

Conditions for obtaining signature: only one of the mandatory lectures may be missed. If more than one of the mandatory lectures is missed, the semester will not be accepted. There are three tests written during the semester. If the result of two of those tests is "fail", the semester will not be accepted. Absence from mandatory lectures and practices must be certified in a credible waywithin three (3) working days.

Assessing grades according to test scores:

Result (%)	Grade
0-60%	1
61-70%	2
71-80%	3
81-90%	4
91-100%	5

Department of Foreign Languages

Subject: MEDICAL HUNGARIAN II.

Year, Semester: 3rd year/2nd semester Number of teaching hours: Practical: **28**

1st week:	6th week:
Practical: Introduction, orientation	Practical: Bleeding gum, calculus / Vérző íny, fogkő
2nd week:	
Practical: Pediatric dentistry / Gyermekfogászat	7th week:
	Practical: Revision / Ismétlés
3rd week:	
Practical: Pediatric orthodontics / Gyermekkori	8th week:
fogszabályozás	Practical: Mid-term test
	Self Control Test
4th week:	
Practical: Before treatment / Kezelés előtt	9th week:
	Practical: Crown, bridge /Korona, hid
5th week:	
Practical: Filling / Tömés	10th week:
C	Practical: Extraction / Foghúzás

11th week:	13th week:
Practical: Root canal treatment / Gyökérkezelés	Practical: Prosthesis / Protézis, műfogsor
12th week: Practical: Dental check-up / Fogászati ellenőrzés	14th week: Practical: Revision / Ismétlés

Requirements

Requirements of the course:

Attendance

Attending language classes is compulsory. If a student is late it is considered as an absence. Students can miss only 10 percent of the classes that is maximum 2 occasions. In case of more than 2 absences, the signature may be refused. Making up a missed lesson with another group is not allowed.

The teacher evaluates active participation in each class. Students are not supposed to share coursebooks in the classes therefore if they fail to bring the coursebook to the class for the second time the attendance is refused.

Testing, evaluation

Students have to take a mid-term test during the semester and a comprehensive exam in the exam period. The successful completion of the midterm test is the prerequisite for obtaining the signature at the end of the semester. A further minimum requirement is the knowledge of 200 words per semester divided into 10 word quizzes.

There are five word quizzes before and another five after the mid-term test. If a student fails or misses any word quizzes he / she cannot take the mid-term test and cannot obtain the signature at the end of the semester. A word quiz can be postponed by a week and students can take it only with their own teacher.

The comprehensive exam consists of a role-play from a list of situations covered in the coursebook. The final grade is the result of the comprehensive exam taken in the exam period.

Coursebook: Kovács, Judit: A fogászati szaknyelv alapjai 2.

Assignments, audio files, topics and vocabulary minimum lists can be found on the elearning site of the Department of Foreign Languages (www.elearning.med.unideb.hu).

Department of Laboratory Medicine

Subject: CLINICAL BIOCHEMISTRY II.

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: **11** Practical: **6**

1st week:

Lecture: 1. Coagulopathies, (general introduction), haemophilias. 2. von Willebrand disease 3. Platelet function disorders.

2nd week:

Lecture: 4. Inherited thrombophilias 5. Acquired thrombophilias 6. Prethrombotic state, thromboembolias, consumption coagulopathies **Practical:** Laboratory diagnostics of coagulopathias

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3rd week: Practical: Laboratory diagnostics of platelet function disorders. Laboratory monitoring of anti platelet therapy	8. Pathobiochemistry and clinical biochemistry of the acute complications of diabetes mellitus9. Laboratory diagnostics of diabetes mellitus
	8th week:
4th week:	Lecture:
Practical: Laboratory diagnostic of	10. Laboratory diagnostics of acute coronary
Thrombophilia. Laboratory monitoring of	syndrome I.
anticoagulant therapy.	11. Laboratory diagnostics of acute coronary
	syndrome II.
6th week:	
Lecture:	
7. Pathogenesis and pathomechanism of diabetes	
mellitus	

Requirements

Participation in practices is obligatory. In case of absences practices should be made up for by attending the practicals with another group on the same week, or a medical certificate needs to be presented. Please note that strictly only a maximum of 2 students are allowed to join another group to make up for an absence.

Requirements for signing the Lecture book: The Department may refuse to sign the Lecture book if the student is absent from practices. The materials of Clinical Biochemistry subject are uploaded on the e-learning website.

Assessment: At the end of the first and second semester there is a written examination (test) assessed by a five grade evaluation. Like the A chance, the B and C chances are written tests. If the written part of the C chance is failed but the student achieves at least 35%, the exam continues with an oral part. The materials of both semesters are required for the exam at the end of the second semester.

Requirements for examinations: The examination is based on the lecture and practical material (Practicals in Laboratory Medicine, eds.: János Kappelmayer, 2023) as well as the relevant chapters from the textbook of Marshall: Clinical Chemistry (9th edition, 2021).

Department of Operative Dentistry and Endodontics Subject: **RESTORATIVE DENTISTRY PROPEDEUTICS II. (ENDODONTICS)**

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 14 Practical: 56

1st week:

Lecture: Morphology of the upper and lower teeth: numbers, localizations and shapes of the roots and root canals, accessory root canals, apical delta and apical foramens. Shapes and localizations of the access cavities **Practical:** Root canal morphology of the upper and lower teeth

2nd week:Lecture: Preservation of the pulp vitality (direct and indirect pulp capping)Practical: Direct and indirect pulp capping methods in the practice

3rd week:	compaction root canal obturation techniques
Lecture: The basic principles of the root canal	
therapy: purpose, indications, contraindications	9th week:
and the steps of it	Lecture: Retreatment: removal of root canal
Practical: Access cavity preparation. Absolute	obturation materials
isolation	Practical: Access cavity preparation and
	working length determination (human extracted
4th week:	tooth with one canal). Retreatment: removal of
Lecture: Pre-endodontic build-up. Endodontic	the root canal obturation material (eucalyptus
hand instruments	essential oil), irrigation, drying, obturation
Practical: Pre-endodontic build up (badly	
destructed teeth). Endodontic hand instruments	10th week:
and uses	Lecture: Restauration of endodontically treated
	teeth (considerations)
5th week:	Practical: Digital dental radiography system:
Lecture: Radiographic considerations in	evaluation of working length in a human
endodontics	extracted tooth. Chemo-mechanical preparation,
Practical: Determination of the working length.	irrigation, drying cold lateral compaction
Traditional root canal preparation technique, root	
canal irrigation and medication, temporary	11th week:
coronal filling	Lecture: Endodontic related traditional surgery
	Practical: Written exam II.
6th week:	Endodontic surgery: root resection and
Lecture: The role, purpose and general	retrograde root canal obturation
principles of the chemo-mechanical preparation	
in the root canal system. Manual root canal	12th week:
preparation techniques: traditional and step back	Lecture: Medical history, patient examination,
preparation	and treatment plan in endodontics.
Practical: Step-back preparation technique, root	Documentation
canal irrigation and medication, temporary	Practical: Medical history, patient examination,
coronal filling	and treatment plan in endodontics.
7th weaks	Documentation
/III week: Lasture: Poot canal irrigants and modicaments	13th wook:
Root canal obturation materials	Locture: WRITTEN EXAM
Practical: Written exam I	Practical: Root canal treatment (molar teeth)
Restorative practice	
	14th week:
8th week:	Lecture: Case presentations
Lecture: Root canal obturation: single cone and	Practical: Case discussion: different pulp
lateral compaction	diagnoses and differential diagnoses
Practical: Photographic evaluation of the	
guttapercha cone fit. Single cone and cold lateral	

Requirements

Course objectives

The aim of the course: students need to learn and know the basic endodontic knowledge and use

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that in practise.

Short description of the course

During the course, students learn about the theoretical and practical basics of endodontology: access cavity preparation, manual methodes of root canal preparations, cold obturation techniques, and pulp-vitality preserving methodes.

Examination: ESE (oral exam) (involving possibility of failure)

Materials for exam preparation: official lecture book, lectures and materials of the practicals.

Requirements for signing the lecture book:

• During the semester one written test will be held in lecture time in accordance with the requirements of the curriculum. The test result cannot be improved. The results of any missed test conclude to failure (1). The missed test can be made up for in a given time designated by the Department after officially proof of absence.

• The practices start and finish in accordance with the timetable, arriving late is not allowed.

• A certification is required for any absences which has to be handed to the leader of the practice course. Missed classes cannot be made up for. Any missed practices result in a fail grade (1) that day.

• Furthermore, several tests can be held without prior announcement during the practices, the results of which will be included in the evaluation of the performance that day.

• Students are required to stay at the premises of the practical from the beginning to the end of the class and participate actively in the practical work.

• The practical work is evaluated with a grade in each practice which is the average of the all practical grade (subtasks) of the day.

• If one exercise of the practice is graded with failed (1), then the whole practice is evaluated as fail (1)!

• For signing the lecture book it is required to have at least 71% of passed (2) grades (10 pieces for 14 weeks).

Grade formation

- If the average of:
- 1st grade: the mark of the semester (14) +
- 2nd grade: the result of test (1) during a lecture +
- 3rd grade: the average of the 2 pre-announced written tests during the practices.

reach the minimum 3,51 and above to 4,5, the achieved grade is good. The average 4,51 or above conclude to an excellent grade. The achieved grade is offered to the student as an examination grade.

The students are not obliged to take the offered grade and can ask to take the examination

Requirements for taking up the subject: Oral biology, Restorative Dentistry Propedeutics I. (Cariology)

Department of Operative Techniques and Surgical Research

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 5 Seminar: 7 Practical: 6

1st week

1st week:	of surgical hemostasis. Vein preparation and
Lecture: The role of operative professions in	cannulation. Injection techniques and blood
medicine. Surgical deontology. Surgical	sampling.
armamentarium.	Seminar: Bioplasts and tissue adhesives. (1
Seminar: Classification and handling of the	hour)
surgical instruments. Tools' order on the	Practical: Ligatures on gauze model.
instrumental tables. (2 hours)	Demonstration and practising of vein
	preparation/cannulation, preparation of infusion
2nd week:	set, blood sampling and injection techniques
Lecture: Surgical sutures, suture materials.	(i.m., i.v.) on phantom models. (2 hours)
Seminar: Conventional hand suturing and	
knotting (manual and instrumental) techniques.	5th week:
Suture materials in practice. (2 hours)	Lecture: Surgical incisions. Conicotomy,
	tracheostomy.
3rd week:	Seminar: Video-demonstration of
Lecture: Asepsis, antisepsis. Preparation for	median/paramedian laparotomy, conicotomy and
operation personnel: scrubbing, gowning,	tracheostomy. (1 hour)
gloving. Isolation. Operating room environment.	Practical: Conicotomy on phantom model.
Seminar: Preparation for operation personnel.	Repeat: Wound closure with different suture
Isolation of the operative field. (1 hour)	techniques on surgical training models. Vein
Practical: Scrubbing. Wound closure with	preparation/cannulation, preparation of infusion
different suture techniques on biomodels. (2	set, blood sampling and injection techniques
hours)	(i.m., i.v.) on phantom models. (2 hours)
	Self Control Test
4th week:	

Lecture: Types of bleeding. Different methods

Requirements

Prerequisite: Oral anatomy, histology and embryology, Dental Physiology II. Requirements: The lectures and seminars/practices are built on each other. Consequently, it is difficult to make up the missed classes. Attending the 2nd and 3rd lecture is compulsory. Though according to the Rules and Regulations only 30% of the lectures can be made compulsory, attending the 4th lecture is also strongly recommended. The make-up of the first 3 practices is obligatory. Compensation for the missed seminars should be paid according to the Rules and Regulations of the University of Debrecen. If the student is absent from 2 seminars/practices in a semester (without any acceptable reason), the Department may refuse the signature. Performance is assessed on a fivegrade scale (AW5) and is based on the performance over the curriculum and the result of the final

test written at the end of the course.

Exam: AW5 (written final test)

Compulsory Readings: Lecture slides in pdf and supplementary materials (e-Learning folder of the course)

Mikó I., Furka I.: Basic Surgical Techniques, Faculty of Medicine, 4th (enlarged) edition, University of Debrecen, 2019.

Recommended Reading:

McLatchie G.R., Leaper D.J.: Oxford Handbook of Operative Surgery, Oxford University Press, 1996.

Myint F.: Kirk's Basic Surgical Techniques, 7th edition, Elsevier Heath Sciences, 2018.

Subject: HISTORY OF MEDICINE

Year, Semester: 1st year/1st semester, 1st year/2nd semester, 2nd year/1st semester, 2nd year/2nd semester, 3rd year/2nd semester, 4th year/1st semester, 4th year/2nd semester, 5th year/1st semester, 5th year/2nd semester Number of teaching hours: Lecture: **26**

1st week: Lecture: Introduction Sources and methods of	7th week: Lecture: Pandemics in history
history of medicine. Paleomedicine, prehistoric medicine.	8th week:
2nd week:	Lecture: Scholastic medicine. The Renaissance. Leonardo da Vinci, Vesalius, Paracelsus.
Lecture: Medicine of the ancient river valley civilizations: China, India, Mesopotamia.	9th week:
3rd week: Lecture: Medicine in the ancient Egypt.	Lecture: Significant discoveries of the 17th - 20th centuries. Selections from the history of various medical disciplines I.
4th week:	10th week:
Lecture: Ancient Greek medicine. Asclepions. Hippocrates. Concept and doctrines. Corpus Hippocraticum. The Oath.	Lecture: Significant discoveries of the 17th - 20th centuries. Selections from the history of various medical disciplines II.
5th week:	11th week:
Lecture: Medicine in the Roman Empire. Aesculapius. Encyclopedians: Terentius Varro, Plinius, Celsus. Soranos, Dioscorides. Galenus. Hygiene and public health. Valetudinaria.	Lecture: Overviewing the history of medicine of the Middle East (since medieval ages), the American continent, Sub-Saharan Africa, South Asia (since 1500), the Far East and Australia.
6th week:	12th week:
Lecture: Medieval medicine. Monastery medicine. Byzantine healers. The great compilators. Arabian medicine. Rhases	Lecture: Brief overview of the history of dentistry, pharmacy and public health.
Avicenna, Abulcasis.	13th week:
	Lecture: History of the Hungarian Medical Education. History of the University of Debrecen

and the Faculty of Medicine. Consultation.

Self Control Test

Requirements

Aim of the course: History of medicine is more than just history of a branch of science. Development of medicine in various cultures and ages had been accompanied and/or led to a number of changes in attitudes and relationships of human and nature, religions and society, with numerous turning points, paradigm shifts, major discoveries and technological development. The aim of the course is to briefly present the history of the medicine, the development of medical thinking, decision-making, attitude and healing practice. Deepening in science history can also contribute to the appreciation of the value of the medical approach used in the everyday preventive, diagnostic and therapeutic practice of different medical disciplines. The lessons from paradigm changes may also enforce the open-mindedness, which is certainly still needed for a long time. **Exam:** AW5 (written final test)

Compulsory reading: Lecture slides in pdf and supplementary materials (e-Learning folder of the course)

Recommended Readings:

Porter R.: The Cambridge Illustrated History of Medicine. Cambridge University Press, 1996. Magner L.N., Kim O.J.: A History of Medicine. 3rd edition, CRC press, 2017. Jackson M.: A Global History of Medicine. Oxford University Press, 2018.

Department of Pathology

Subject: ORGAN AND ORAL PATHOLOGY

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: **50** Seminar: **14** Practical: **14**

1st week:

Lecture: ARTERIOSCLEROSIS. HYPERTENSION AND HYPERTENSIVE VASCULAR DISEASE ACUTE MYOCARDIAL INFARCTION MYOCARDITIS. CARDIOMYOPATHIES Practical: IRDS Astmatic bronchitis Boeck sarcoidosis Squamosus cancer of the lung

2nd week: Lecture: DISEASES OF THE ENDOCARDIUM AND CARDIAC VALVES CONGENITAI HEART DISEASES. VENOUS AND LYMPHATIC VESSELS DISORDERS ARDS. PNEUMONIA. PULMONARY EMBOLISMS **Practical:** Intrabronchial carcinoid tumor Small cell carcinoma of the lung Lipoma Embryonal rhabdomyosarcoma

3rd week: Lecture: CHRONIC OBSTRUCTIVE PULMONARY DISEASES INTERSTITIAI LUNG DISEASE TUMORS OF THE LUNG AND PLEURA **Practical:** Osteomyelitis acuta Chondroma Osteosarcoma Barrett metaplasia

4th week:

Lecture: SOFT TISSUE TUMORS NON-NEOPLASTIC LESIONS OF THE BONES. PATHOLOGY OF JOINTS BONE TUMORS Practical: Gastric peptic ulcer Crohn disease Colitis ulcerosa Hepatocellular carcinoma and liver cirrhosis

5th week:

Lecture: DIABETES MELLITUS BENIGN PRENEOPLASTIC AND NEOPLASTIC LESIONS IN ORAL CAVITY. DISEASES OF SALIVARY GLANDS ESOPHAGEAL DISEASES. GASTRITIS. GASTRODUODENAL ULCERS Practical: HG adenoma in the colon Colon carcinoma arise from a polyp Mucinous adenocarcinoma Nephropathia diabetica

6th week:

Lecture: MALDEVELOMENT OF INTESTINE. MEGACOLON. INTESTINAL ENTERITIS, ENTEROCOLITIS. MALABSORPTION. INFLAMMATORY BOWEL DISESES (IBD) COLORECTAL CANCER **Practical:** Diffuse proliferative glomerulonephrosis Pyelonephritis acuta Clear cell carcinoma of the kidney Transitional cell carcinoma of the urinary bladder

7th week:

Lecture: INTRA- AND EXTRAHEPATIC BILIARY TRACT DISEASES VIRAL HEPA ITIS. DRUG INDUCED LIVER DISEASES. ACUTE AND CHRONIC HEPATIC FAILURE LIVER CIRRHOSIS Diseases of the oral mucosa **Practical:** Cysta focllicularis Cysta keratoides Cysta thyreoglossalis Cysta brachiogenes Mucocele

8th week:

Lecture: TUMORS AND CIRCULATORY DISORDERS OF THE LIVER. INHERITED METABOLIC LIVER DISEASES THE PATHOLOGY OF THE PANCREAS. THE PATHOLOGY OF THE APPENDIX GLOMERULAR DISEASES Oral cancer **Practical:** Attritio et plaque dentalis. Dentin caries. Parodontithis chronica Caries fissuralis et cervicalis, Odontholith subgingivalis Cysta radicularis Osteomyelitis chronica mandibulae Gingivitis hyperplastica

9th week:

Lecture: DISEASES AFFECTING TUBULI AND INTERSTITIUM. KIDNEY STONES. HYDRONEPHROSIS CYSTIC DISEASES AND TUMORS OF THE KIDNEY PATHOLOGY OF THE URINARY TRACT Salivary gland diseases **Practical:** Ulcus traumaticum Granuloma pyogenicum Epulis gigantocellularis Stomatitis ulceronecrotica leukaemica Lichen planus

10th week:

Lecture: HYPERPLASIA AND CARCINOMA OF THE PROSTATE TESTICULAR TUMORS NON-NEOPLASTIC AND PRENEOPLASTIC CONDITIONS OF THE BREAST Disease of the teeth **Practical:** Lupus erythematosus Pemphigus vulgaris LEukoparakeratosis labii inferioris oris Papilloma Squamosus carcinoma

11th week: Lecture: BREAST CANCER UTERINE TUMORS TUMORS OF THE OVARIUM Disease of the supporting structures of the teeth Practical: Carcinoma basocellulare

Scwannoma buccae	Adenoid cystic carcinoma
Osteoma mandibulae	
Fibroma cementificans gingivae	13th week:
Ameloblastoma mandibulae	Lecture: PATHOLOGY OF THE ADRENALS
	OPHTALMIC PATHOLOGY.
12th week:	CEREBROVASCULAR DISEASES
Lecture: PATHOLOGY OF THE PREGNANCY.	STROKE
PATHOMORPHOLOGICAL ASPECTS 0F	Skin diseases affecting the oro-facial region,
MOST REQUENT OF DISEASES OF THE	neck lumps
NEWBORN	Practical: Repeating practice
MELANOCYTIC AND EPITHELIAL SKIN	
TUMORS	14th week:
PATHOLOGY OF THE THYROID AND	Lecture: NEURODEGENERATIVE DISEASES
PARATHYROID	DEMENTIAS
Jaw cyst and odontogenic tumors, disorder of	INFECTIVE DISEASES OF THE CNS
bone	TUMORS OF THE CNS
Practical: Sialolithiasis and sialoadenitis	Oral manitestations of systemic diseases
chronica	Practical: Repeating practice
Sjögren syndrome	
Warthin tumor	
Pleomorphic adenoma	

Requirements

Pathology I-II.

Textbook: Robbins' Basic Pathology, 10th Edition (Elsevier) Lectures: PPT slides of all lectures (uploaded for the actual week) Practicals (weekly packages): -histopath slides -macro preps -topic-wise supporting content Test bank: continously available from the e-learning site Downloadable material: Department of Pathology

Validation of Semester:

-Histopathology and macro pathology (autopsy) classes are compulsory.

-Participation will be verified by the lecturer ight before the class.

-Missing of two practical classes (histo and macro pathology together) is tolerable.

-Intracurricular replacement of histo and/or macro pathology classes is possible on the same week.

Examination:

1st semester (Pathology 1): End of Semester Examination (ESE)
2nd semester (Organ and Oral Pathology): Final exam (FE).
The Exam consists of: digital minimal test, digital histology test, practical exam and oral test.

Written and practical exams (proposed timing):

Pathology theory test (week 13):

-The test bank of the written pathology test can be found on the departmental E-learning website -85% is to be reached for pass.

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-In the 2nd semester the questions comes from the 1st and the 2nd semester

Histopathology exam (computerized - week 14):

-The computerized histopathology exam consisted of 6 microscopic slides with related questions.

-Digital slides and learning material public on the E-learning andsite.

-85% correct answers are required for pass.

-In the 2nd semester exam slides come from the 1st and 2nd semester.

Macro practical exam (autopsy room - week 14):

-This practical exam takes place in the autopsy room.

-Oral presentation and interpretation of macro preparations is expected.

-1-5 grades. Grade 2 (pass) is required for the succesful exam.

Pass of all 3 exams are required for entry to the ESE and FE. Any failed test is to be repeated on the exam day before starting the oral part

Oral exam:

Oral presentation and discussion of topics choosen from the topic list. ESE: Two randomly choosen 1st semester topics to be presented.

FE: Three randomly choosen topics (one from the 1st semester, one from a 2nd semester and one from dental topics).

The knowledge of students is judged on the five-grade evaluation scale (1-5 grades).

During the oral exam fail on any (possible) substation (written, practical, oral) means termination of the chance. The exam must be repeted from the part that failed.

During improvement exam only the oral exam topics must be repeated (the student can get worse grade than the previous one or possibly can fail).

Department of Periodontology

Subject: INTRODUCTION TO DENTAL RADIOLOGY

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: **18** Seminar: **23**

1st week:	Seminar: Anatomical introduction: projectional
Lecture: Head and neck radiology X-ray,	anatomy with facial bones' X-ray imaging.
ultrasound (General Radiology)	Sectional anatomy: CT, US, MRI of head and
Seminar: Introduction to imaging modalities.	neck region.
Demonstration of radiological equipment.	
	3rd week:
2nd week:	Lecture: Musculoskeletal system (General
Lecture: Head and neck CT, CBCT, MRI given	Radiology)
opportunities (General Radiology)	Seminar: Imaging of bone and joint diseases

4th week:	9th week:
Lecture: Emergency radiology (General	Lecture: Radiology in Restorative Dentistry
Radiology)	(Dental radiology)
Seminar: Emergency radiology	Seminar: Radiological anatomy of periodontal
54h alar	formulas (Dental radiology)
Sth week:	10th mode
Dente, Alveeler radiology (Dentel radiology)	Lasture: Padialogy in Pastorativa Dantistry
Seminar: Neuroradiology	(Dental radiology)
Semmar. Neuroradiology	(Dental radiology) Seminar: Different manning methods of
6th week:	neriodontal diseases (Dental radiology)
Lecture: Chest (General radiology)	periodonial discuses (Denial radiology)
Maxillofacial radiology (Dental radiology)	11th week:
Seminar: Radiology of chest	Lecture: Radiology in Prosthetic Dentistry
	(Dental radiology)
7th week:	Seminar: Radiology in Restorative Dentistry
Lecture: Examination of the GIT system	(Dental radiology)
(General radiology)	
Periodontal formula of radiological imaging	12th week:
methods (Dental radiology)	Lecture: Radiology in Prosthetic Dentistry
Seminar: GIT system (General radiology)	(Dental radiology)
Imaging diagnosis in Dento-Alveolar Surgery	Seminar: Dental Radiology: Radiology in
(Dental radiology)	Prostnetic Dentistry (Dental radiology)
8th week:	13th week:
Lecture: Kidney-bladder system. Screening tests	Lecture: Radiology in Pediatric Dentistry
for breast examination, prostate, low dose CT.	(Dental radiology)
Cardio CT, radiation protection. (General	Seminar: Radiology in Pediatric and
radiology)	Orthodontic Dentistry (Dental radiology)
Radiography of periodontal lesions (Dental	
radiology)	14th week:
Seminar:	Lecture: Radiology in Orthodontic Dentistry
Urinary tract (General radiology)	(Dental radiology)
Imaging diagnosis in Mavillafaaial Surgery	Seminar: lest (offered grade)
(Dental radiology)	
(Dental Taulology)	

Reading materials:

S.C.White, M.J.Pharoah: Oral Radiology Principles and Interpretation. Mosby, 2000. ISBN: 0-8151-9491-9. Mason R. Bourne S.: A Guide to Dental Radiography. **Oxford University Press, 1988.**

Requirements

Course objectives

The aim of the course is to familiarize with traditional and modern imaging techniques used in general medicine and dental practice.

Short description of the course

During the course students will get acquainted with traditional general and dental X-ray equipment and techniques (X-ray, UH, CT, MRI), new digital radiography and dental applications, dosage concepts and radiation protection regulations.

Exam Type: ESE

Written examination in the form of an electronic test / tablet.

Subject: PERIODONTOLOGY PROPEDEUTICS II.

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: 2 Practical: 15

3rd week: Lecture: Sonic and ultrasonic scalers in periodontal treatment.	11th week: Practical: The role of antiseptic therapy in the management of periodontal diseases.
4th week:	12th week:
Lecture: Decision Making During Treatment	Practical:
Planning for Patients with Periodontal Disease.	Introduction to periodontal maintenance.
9th week:	13th week:
Practical: Clinical periodontal assessment and radiographic analysis of the periodontium.	Practical: Comprehensive Patient Cases.
	14th week:
10th week:	Practical: Comprehensive Patient Cases.
Practical: Patient's role in nonsurgical periodontal therapy.	not the provide the second sec

Requirements

Prerequisites of taking the subject: Periodontology propedeutics I.

The aims and objectives of this course:

-to be able to communicate effectively the impact of local factors on their periodontal health and disease management to the patients

-to be capable of examining, diagnosing, performing risk prediction, treatment planning and managing, in their broadest sense

-to achieve knowledge about periodontal hand scaling instruments in clinical practice

Short description of the course:

-to treat and maintain the patient with periodontal disease in a holistic manner

Requirements:

Student attendance on clinic is mandatory and a record of clinical attendance is taken at each practice. The Department may refuse to sign the students' Lecture book if they are absent from more than 20% of all practical lessons in a semester.

Lectures: As given in the timetable (time & place) Practices: In the building of Faculty of Dentistry

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested.

Conditions of signing the index:

-active participation in practices -not more absence than 20%

Assessment: AW5

Calculation of the practical grade:

AW5 grade consists of proper practical work.

Compulsory reading:

Carranza's Clinical Periodontology 12th Ed., Elsevier ISBN: 9780323227995 -lectures and practices materials (handouts are available)

Recommended reading:

1. J. S. Nield-Gehring: Fundamentals of Periodontal Instrumentation 6th Edition, 2008 Lippincott Williams & Wilkins. ISBN 978-0-7817-6992-1

2. Foundations of Periodontics for the Dental Hygienist 3th Edition, 2011 Lippincott Williams & Wilkins. ISBN 978-1-60547-573-8

Division of Nuclear Medicine and Translational Imaging

Subject: DOSIMETRY, RADIATION HEALTH EFFECTS

Year, Semester: 3rd year/2nd semester Number of teaching hours: Seminar: **24**

1st week:	
Seminar: Types and origin of ionizing radiation	4th week:
Interactions of charged particles with matter	Seminar: Consultation: physics of ionizing radiation
2nd week:	How to use dosimeters (practice)
Seminar: Interactions of electromagnetic	
radiation with matter	5th week:
Detection of X-ray, gamma and beta radiation by	Seminar: Biological effects of radiation
inducing light	Forms of radiation injury
3rd week:	6th week:
Seminar: Gas ionization detectors	Seminar: Constituents of population dose
Dose concepts and dosimeters	Radiation protection rules, dose limits

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7th week:	Seminar: Operations in case of
Seminar: How to work with unsealed	nuclear/radiological incidents bookkeeping
radioactive preparations?	Supervision by the authorities
Protection against external radiation	
<u> </u>	11th week:
8th week:	Seminar: Radiation protection in a CT lab
Seminar: Classification and equipment of workplaces applying ionizing radiation	Demonstration of the radiation protection system
How to work with X-ray devices?	12th week:
5	Seminar: Requirements for staffing
9th week:	Consultation, exam
Seminar: Radiation protection of patients	Self Control Test
Consultation: radiation biology and protection	

10th week:

Requirements

Attendance of at least 75% of the seminars. Usable understanding of the basic physical phenomena, the concepts of radiation effects and protection, as well as the regulations and practical solutions is required.

Chance "A" is a computer-based exam. Chance "B" and "C" are oral.

Electronic materials: https://elearning.med.unideb.hu/course/view.php?id=274

Division of Radiology and Imaging Science

Subject requirements:

The attendance on lectures is not obligatory, but recommended.

Participation in seminars is compulsory. It is not possible to make up the absences. Absences shall be verified, the rate of absences shall not exceed 20%.

Conditions for signing the lecture book

If the absence from seminars exceeds 20% (3 seminar days - but, the maximum of each two-two occasions for general and dental radiology) the signature of the lecture book shall be refused.

Final grade

An offered grade will be given by writing an electronic test in the last week at the time appointed by the Department (lecture, seminar or predetermined time). The material asked on the test consists of the lectures, seminars and official textbook.

The electronic test is evaluated as follows:

0-60%	failed (1)
61-70%	passed (2)
71-80%	satisfactory (3)
81-90%	good (4)
91-100%	excellent (5)

If the offered grade is failed (1) the student must take an end-semester (electronic) exam as an ,A',B' chance. If the ,B' chance exam is failed (1) the student must take an oral exam as a ,C'

chance.

Faculty of Dentistry

Subject: **3RD YEAR SUMMER PRACTICE FOR DENTISTRY STUDENTS**

Year, Semester: 3rd year/2nd semester Number of teaching hours: Practical: **60**

CHAPTER 19 ACADEMIC PROGRAM FOR THE 4TH YEAR

Department of Biomaterials and Prosthetic Dentistry

Subject: COMPLEX DENTISTRY I.

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: **5** Practical: **105**

1st week:	surgery
Practical: 1-15 week: Complex dental treatment:	
restorative, periodontial and extraction	4th week:
procedures according to patients' needs. The	Lecture: Nursery procedures during prosthetic
minimum requirements declared by the	treatment
departments to be fulfilled. General nursering	
procedures during treatments.	5th week:
	Lecture: Extraction related nursery procedures
2nd week:	
Lecture: Nursery procedures during restorative	6th week:
treatment	Lecture: Nursery procedures during periodontal
	treatment
3rd week:	

Lecture: General nursery procedure in the dental

Requirements

Assessment:

AW5. Continuous monitoring of the knowledge during practices. The grade is given on the basis of the student's term-time practical performance and this is considered as the final grade of the end semester exam.

The grade cannot be improved during the exam period

Signature conditions:

-Completion of the required minimums.

Active participation on the practices (there is no possibility to compensate the missed practices).
The practices begin/end according to the timetable, delay is not permitted. Attendance can only be accepted if the student is present at the venue from the beginning until the end of the practice.
With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 2 patient treatment and 1 assistance practice altogether. All missed practices need to be certified.

-All procedures amongst the practical work will be evaluated with grades. The final grade is calculated on basis of the grade-averages received from all special fields. (The calculations follow the general rule for rounding, from x.51.)

-The student's performance provided on general practices will be evaluated twice, in the 6th and in the 13th week, during the semester and the student will be notified in written form by non-acceptable performance.

-Grades given on the practices, will be the end semester grades, which cannot be improved during the exam period.

-In addition, the supervisor takes the professional attitude and responsibility of the student into account, and his / her effort to earn or maintain professional development, the proper behavior towards the clinical staff, the patients and their relatives. The correct fulfillment of the administrative responsibilities and the appropriate behavior towards of the administrative personnel. -In case the performance is non-acceptable, the student will be warned in written form. From students with two warnings the signature will be denied. In case of not fulfilling the requirements, the student will be warned with the PROFESSIONALISM EVALUATION REPORT FORM (F118 // 1ST). The student who had to be warned twice during the semester because of inadequate performance due to professional reasons or inadequate professional attitudes his / her the signature will be rejected

The Faculty of Dentistry provides students with 1 white medical coat, 1 suit sluice (trousers and top) and 1 locker key for the duration of the Complex practice. The students undertake to return these items at the end of the practice.

Prerequisites of taking the subject: Oral Surgery Propedeutics, Restorative Dentistry Propedeutics II. (Endodontics), Introduction to Prosthodontics, Periodontology Propedeutics.

Subject: **PROSTHETIC DENTISTRY I.**

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: 14 Practical: 10

1st week:	6th week:
Lecture: History taking and clinical examination.	Lecture: Restoration of the endodontically
Diagnostic casts and related procedures.	treated tooth.
Treatment Planning.	
C C	7th week:
2nd week:	Lecture: Implant-supported fixed prostheses.
Lecture: Principles of occlusion.	
I	8th week:
3rd week:	Lecture: Tissue management and impression
Lecture: Periodontal considerations. Mouth preparation.	making.
1 1	9th week:
4th week:	Lecture: Interim fixed restorations.
Lecture: Principles of tooth preparation. The	
complete cast crown preparation. The metal-	10th week:
ceramic crown preparation.	Lecture: Laboratory procedures. Pontic design.
r i r i r i r i r i r i r i r i r i r i	Investing and casting
5th week:	
Lecture: The partial veneer crown, inlay, and	11th week:
onlay preparations. Tooth preparation for all-	Lecture: Retainers for partial removable dental
ceramic restorations	prostheses
	r

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12th week:

Lecture: Description of color, color-replication process, and esthetics. Metal-ceramic restorations. All-ceramic restorations. Resinbonded fixed dental prostheses.

13th week:

Lecture: Luting agents and cementation

procedures.

14th week: Lecture: Postoperative care.

Requirements

The aim of acquiring the professional content of the subject:

The aim of the subject is to expand students' knowledge on the field of prosthetic dentistry and to give detailed information on the field of fixed prosthodontics and dental technology. Beside lectures, special practices provide expanded academic education and training of practical skills. The content of the subject is based on already acquired skills and experience.

Brief course program:

The course involves academic knowledge of formulating appropriate treatment plan for prosthodontics with an emphasis on fixed prosthodontics. It provides details of clinical procedures such as mouth preparation, tooth preparation, impression making, framework trial, fixed prosthodontic device (FPD) trial, or cementation procedures. Based on the skills and experience acquired on propedeutics more detailed information is given on laboratory procedures. Special practices start with an up-to date theoretical summary of the given topics, followed by small-group hands-on courses.

Competences:

At the end of the course the student is able to formulate appropriate treatment plans for complicated clinical cases, as well as to create correct prosthetic plans.

Requirements:

Attendance on the lectures is highly recommended but not compulsory. Active participation in the practices is required. Missed practices can be compensated for only with the permission of the Department of Biomaterials and Prosthetic Dentistry. The presence in practices will be recorded. If a student is late or leave early, it is considered as an absence.

Assessment:

End of semester examination.

Method of assessment:

One written (electronic) self-control test will be held during the semester. The date of the test will be indicated during the first week of the semester. The self-control test covers the topics of lectures and practices of the semester, and includes relevant material from official textbooks. The result of this self-control test will be offered as the grade of the end of semester exam, according to the following table: 60.01-70% pass (2) 70.01-80% satisfactory (3) 80.01-90% good (4) 90.01-100% excellent (5) Students are not obliged to accept the grade offered, they may opt for taking an oral examination during the examination period.

Department of Orthodontics

Subject: ORTHODONTICS I.

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: **15** Practical: **15**

1st week:	movement
Lecture: Subject and role of orthodontics. Terminology. 2. Relationship between function	9th week: Lecture: Orthodontic biomechanics
2nd week:	
Lecture: Relationship between function and malocclusion	10th week: Lecture: Removable appliances 1. (active and passive plates)
3rd week:	
Lecture: The sequence of tooth eruption, treatment timing.	11th week: Lecture: Removable appliances 2. (functional appliances)
4th week:	
Lecture: Orthodontic diagnostics 1.	12th week: Lecture: Removable appliances 3.
5th week: Lecture: Orthodontic diagnostics 2.	(thermoplastic appliance, combined appliances)
C	13th week:
6th week: Lecture: Orthodontic diagnostics 3.	Lecture: Facial development and growth (intrauterin and postnatal)
7th week:	14th week: Consultation
Lecture: Self-control test	15th week: Self-Control test
8th week: Lecture: Biological background of tooth	

Requirements

Prerequisites of taking the subject

Restorative Dentistry Propedeutics II. (Endodontics) Introduction to Prosthodontics IV.: Propedeutics of Fixed Prosthodontics

The aims and objectives of this course:

To provide an insight for dentistry students into the orthodontist thinking and to present the basic correlations which a dentists ought to know.

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Short description of the course:

During the course, the students learn about the causes and treatments of ever-evolving and changing orthodontic and jaw orthopaedic disorders, and the limits of the profession. The first semester aims to give an introduction into the basics, and into the theoretical background.

Requirements:

Lectures: As given in the timetable (time & place)

Practices: In the building of Faculty of Dentistry

Students attendance at the lectures is not mandatory but recommended.

Active participation in the practices (there is no possibility to compensate the missed practices).

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week.

Conditions of signing the index:

The Department may refuse to sign the students' index if they are absent from more than 1 of the practical lessons in a semester.

The final AW5 marks are decided according to the marks given during the semester. 2 tests will be held during the semester (electronic or written).

Assessment:

AW 5 grade

Calculation of the grade:

The average mark of the 2 written tests will give the final mark. Both tests must be at least 'pass' and the grade must be improved during the examination period, as a ,B' or ,C' chance.

Results of the written tests:

0 - 59%	fail (1)
60 - 69%	pass (2)
70 - 79%	satisfactory (3)
80 - 89%	good (4)
90% ≤	excellent (5)

Compulsory reading:

S.J. Littlewood, L. Mitchell: An introduction to Orthodontics, 5th Ed., Oxford 2019., ISBN:9780198808664

Recommended books:

Proffit W., Fields H., Sarver D.: Contemporary Orthodontics 5th ed., Elsevier 2013

Department of Dermatology

Subject: DERMATOLOGY Year, Semester: 4th year/1st semester Number of teaching hours:	
Lecture: 14	
1st week:	Dermatomycoses.
Lecture: Dermatology in oral medicine.	
Structure of skin.	9th week:
	Lecture: Bacterial skin diseases (tuberculosis,
2nd week:	leprosy, pyoderma)
Lecture: Papulosquamous dermatoses	
1 1	10th week:
3rd week:	Lecture: Role of infectious foci, alopecias
Lecture: Drug eruption	
	11th week:
4th week:	Lecture: Dermatological surgery
Lecture: Primary and secondary lesions	
	12th week:
5th week:	Lecture: STD
Lecture: Skin tumors	
	13th week:
6th week:	Lecture: Seborrhoic diseases. Local therapy.
Lecture: Vasculitis. Postthrombotic syndrome	
	14th week:
7th week:	Lecture: Viral dermatoses, epizoonozes
Lecture: Autoimmune and allergic skin diseases	
8th week:	
Lecture: Photodermatoses. Mycology.	

Requirements

-Presence of the students will be recorded (in the form of a presence sheet).

-It is compulsory to attend the lectures (no possibility for compensation).

-Only those missed lectures will be accepted where written notes (medical, legal, etc.) are presented.

-The lecture book will not be signed in case of more than 2 missed lectures.

-During the lectures medical knowledge will be provided wich may not be available elsewhere. These topics will be asked during the exams.

-The final exam is an oral exam about theoretical issues.

Department of Internal Medicine

Subject: INTERNAL MEDICINE I.

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: 14 Practical: 14

1st week:Lecture: Stomatology and internal medicine.Diagnostic procedures in cardiology.Practical: History taking, physical examination (Department of Internal Medicine building B).	8th week: Lecture: Hypertension. Practical: Patients with cardiac, venous and arterial disorders (Department of Internal Medicine)
2nd week: Lecture: Acquired valvular and congenital heart diseases. Practical: History taking, physical examination (Department of Internal Medicine building B)	9th week: Lecture: Venous thromboembolic disorders. Practical: Patients with cardiac, venous and arterial disorders (Department of Internal Medicine)
 3rd week: Lecture: Infective endocarditis. Practical: History taking, physical examination (Department of Internal Medicine building B) 4th medua 	10th week: Lecture: Arterial thromboses. Practical: Patients with cardiac, venous and arterial disorders (Department of Internal Medicine building B)
Lecture: Angina pectoris. Practical: Examination of cardiac patients (Dept. Cardiology) 5th week: Lecture: Musecondial information	11th week: Lecture: Pneumonias, tuberculosis, lung cancer. Practical: Patients with cardiac, venous and arterial disorders (Department of Internal Medicine building B)
Practical: Examination of cardiac patients (Dept. Cardiology) 6th week:	12th week: Lecture: COPD, respiratory failure. Practical: Patients with pulmonary disorders (Dept. Pulmonology)
Lecture: Arrhythmias, pacemaker treatment. Practical: Patients with cardiac, venous and arterial disorders (Department of Internal Medicine building B)	13th week: Lecture: Glomerulonephritis, pyelonephritis. Practical: Patients with pulmonary disorders (Dept. Pulmonology)
7th week: Lecture: Cardiac failure, antithrombotic treatment in cardiology. Practical: Patients with cardiac, venous and arterial disorders (Department of Internal Medicine building B)	 14th week: Lecture: Renal failure. Practical: Patients with renal disorders (Department of Internal Medicine building A)

Department of Operative Dentistry and Endodontics

Subject: RESTORATIVE DENTISTRY I. (CARIOLOGY)

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: 14 Practical: 10 Requirements for taking up the subject: Restorative Dentistry Propedeutics II. (Endodontics), Introduction to Prosthodontics IV.: Propedeutics of Fixed Prosthodontics

1st week:	7th week:
Lecture: Modern possibilities in dental caries diagnostics	Lecture: Adhesive technique I.
5	8th week:
2nd week:	Lecture: Adhesive technique II.
Lecture: Isolation of operative field. Absolute	
and relative isolation. Rubber dam placement	9th week:
	Lecture: Layering techniques, light curing
3rd week:	possibilities to reduce polimerization shrinkage
Lecture: Morfology of the teeth. The physiology of occlusion with special focus on restorative	and improve marginal seal. Rebonding
dentistry	10th week:
5	Lecture: Up to date matrice systems
4th week:	1 5
Lecture: Dental tractments of patients with	11th week:
chronic underlying diseases. Endocarditis	Lecture: Treatment of cervical lesions. Sandvich
prophylaxis. Antibiotics in dental practice	technique
5th week:	12th week:
Lecture: Special types of cavity preparations: tunnel, box only. Complex preparation for	Lecture: Written test
composites in case of a complex caries lesion.	13th week:
Parapulpal pins	Lecture: Direct composite inlay, onlay, overlay.
	Preparation. Adhesive luting
6th week:	
Lecture: Complex preparation for amalgam	14th week:
restorations. Pins and occlusal coverage with	Lecture: Dental treatments in elderly. Caries of
amalgam. Bonded amalgam restorations	the roots, treatment options
-	

Requirements

Course objectives

The aim of the course is to provide to the students fundamental knowledge for the performation of conservative dental procedures.

Short description of the course

During the course, the subject of restorative dentistry will be taught in theoretical lectures and special practises.

Examination: exam at the end of the mid semester (ESE_oral exam).

Materials for exam preparation: official lecture book, lectures and materials of the special practicals.

Requirements for signing the lecture book

•During the semester, in accordance with the course requirements there is one written test that takes place during a lecture. The self-control tests cannot be repeated only with an adequate proof in a given time. The result of any missed test conclude to failure (1). The result cannot be improved.

• Special practicals:

- The practices start and finish in accordance with the timetable, arriving late is not allowed.
- Students are required to stay at the premises of the practical from the beginning to the end of the class and participate actively in the practical work.
- Absences, in theory, are not allowed.
- In reasoned cases, for certified absences the department ensure make up classes on a previously agreed date during the semester.
- A certification is required for any absences which has to be handed to the leader of the practice course.
- The student's theoretical preparedness, practical work and manual skills are evaluated by the teach during the exercises.
- Missing the special practice or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

Special practices (4th 1st semester): (10) 2 x 5 lessons

Course exemption (reason)

Attendance at the course is not mandatory with valid signature obtained in a previous semester, therefore exemption from attending practices can be requested. The prerequisite for this is that the student needs to submit the request on the appropriate form via https://elearning.med.unideb.hu system at the corresponding course no later than the last working day of the first week of education. Students exempted from attending special practices must also write the test.

Grade formation

The result of the test can impact on the grade of the oral exam.

!!! ATTENTION

ENDODONTIC CASE PRESENTATION (5th year from 2024/25 academic year)

During the case presentation, the student describes the case(s) of his/her own patient(s) treated in rubber dam isolation, which can be:

- 3 single-rooted teeth with one root canal or,
- 1 tooth with two root canals and 1 tooth with one root canal or,
- 1 molar with three or four root canals.

Presentation requirements:

- Filled signed endodontic form without any missing detail, approved, signed and stamped by the supervisor (a separate endodontic form must be filled out for each tooth)
- Photo of the final coronal restoration(s)
- Evaluable radiological documentation
- 248

• Logically built up PowerPoint computer presentation

The mandatory endodontics case study is planned according to previously agreed date and is presented in sequence order.

!!! Missing the presentation of case study or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

Department of Oral and Maxillofacial Surgery

Subject: ORAL SURGERY I.

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: 14 Practical: 10

1st week: Lecture: Tooth-eruption disorders and their treatment	8th week: Lecture: Osteomyelitis of the jaws
2nd week:	9th week:
Lecture: Surgical tooth removal	Lecture: Pathology of head and neck cysts
3rd week:	10th week:
Lecture: Oral surgical treatment of patients with hemostatic disorder	Lecture: Therapy of head and neck cysts
	11th week:
4th week:	Lecture: Diseases of the maxillary sinus and
Lecture: Endodontic surgery I.	their treatment
5th week:	12th week:
Lecture: Endodontic surgery II.	Lecture: Diseases of the salivary glands and their treatment
6th week:	
Lecture: Odontogenic and non-odontogenic	13th week:
inflammations of the head and neck region and their treatment I.	Lecture: Antibiotics in oral surgery
	14th week:
7th week:	Lecture: Consultation
Lecture: Odontogenic and non-odontogenic inflammations of the head and neck region and their treatment II.	

Requirements

Aim of the course:

The aim of the course is to learn about the surgical procedures relating to the pathological conditions of the teeth that are supplementary to dental treatments. To present those dental and maxillofacial diseases for which preoperative preparation and/or postoperative treatment is the dentist' task. During the semester, students will learn about pathological conditions causing

symptoms in the adjacent regions of the teeth or on the jaws and their knowledge is essential for the safe practicing of the dental profession.

Course exemption:

Students who have obtained signature in a previous semester must participate in the compulsory lectures and practices. There is no exemption from attending the compulsory lectures and special practices.

Course requirements and conditions for obtaining signature:

Active participation in the designated lectures is mandatory. Arriving late for the lectures is not accepted. Late students are not allowed to join the lectures. Students must participate in the lectures and practices from the beginning to the end thereof. Only one of the compulsory lectures may be missed. The absence must be certified in a credible way within three working days. Students who have more than one uncertified absence from the lectures will not get signature. Active participation in the special practices is mandatory. Arriving late for the practices is not accepted. Late students are not allowed to join the practices. Students must participate in the practices from the beginning to the end thereof. Any absence from the special practice must be certified in a credible way **within three working days**. Certification must be showed in the Educational Office in person. The missed practice must be made up. Making up for the missed practice is subject to a credible certification and the prior permission of the head of department exclusively during the study term and with a group of the same program and same year. It is necessary to discuss the date of the make-up practice with the officer of the Educational Office. Students should join to the group of the smallest number of students with the permission of the practice leader of the chosen group.

Mandatory lectures:

Tooth-eruption disorders and their treatment Surgical tooth removal Oral surgical treatment of patients with hemostatic disorders Endodontic surgery

Conditions for obtaining signature:

Only one of the designated lectures may be missed. The absence must be certified in a credible way within three working days. Absence from the practice must be certified in a credible way within three working days. Missed practices must be made up according the rules. Students who fail to make up the missed practice or have more than one uncertified absence from the compulsory lectures will not get signature.

Exam:

Oral end semester exam The exam covers the presentation and compulsory readings of the semester, and questions from Oral Surgery Propedeutics can be expected too. Not knowing the parts of the handouts provided by the Department that are emphasised by exclamation mark results in a failed exam.

Compulsory readings:

J. R. Hupp, M. R. Tucker: Contemporary oral and maxillofacial surgery ISBN-13: 978-0323552219, Elsevier, 2018 R.A. Cawson: Essentials of Oral Pathology and Oral Medicine Churchill Livingstone 1998., ISBN: 0443053480

Recommended Books:

P.W. Booth, S.A. Schendel, J.E. Hausamen: Maxillofacial Surgery Churchill Livingstone 1999., ISBN: 0443058539 Szabó Gy.: Oral and Maxillofacial Surgery Semmelweiss Publishing House Budapest, 2004., ISBN: 963-9214-15-9 **Prerequisites**: Pathology II, Oral Surgery Propedeutics

Department of Otorhinolaryngology and Head and Neck Surgery

Subject: OTOLARYNGOLOGY

Year, Semester: 4th year/1st semester Number of teaching hours: Seminar: 14

1st week:	8th week:
Seminar: Anatomy and examination of the	Seminar: Trauma of the nose and paranasal
external ear.	sinuses (skull base fracture, maxilla fracture)
Symptomes of ear diseases.	Epistaxis and its management
Inflammatory diseases of the external ear.	
	9th week:
2nd week:	Seminar: Tumors of the nose and paranasal
Seminar: Anatomy and examination of the middle ear.	sinuses and its management
Acute supparative otitis media.	10th week:
Acute serous otitis media.	Seminar: The pharynx (inflammatory disorders, neonlasm)
3rd week:	
Seminar: Chronic otitis media and its complications.	11th week: Seminar: The larynx (inflammatory disorders)
4th week:	12th week:
Seminar: Main surgical procedures of middle ear disorders.	Seminar: Malignant disorders of the larynx and hypopharynx. Differential diagnosis of neck masses.
5th week:	
Seminar: The cochlea and the sound perception	13th week:
	Seminar: Upper airway stenoses.
6th week:	
Seminar: Audiological examination	14th week:
Rehabilitation of the hearing loss	Seminar: The salivatory glands. The facial
	nerve.
7th week:	
Seminar: Anatomy and physiology of the vestibular system	

Requirements

Education: The form of education is seminar. The attendance of the 14 seminars is compulsory, and there is no possibility for make up or any compensation. In case of missed lectures a written certification (medical, legal, etc.) should be presented (no more than two). Then the lecture book will be signed by the leader of the institute. Examination: oral examination, two topics have to be worked out and presented. Mandatory literature: Hans Behrbohm, Oliver Kaschke, Tadeus Nawka, Andrew Swift: Ear, Nose and Throat Diseases with Head and Neck Surgery ISBN: 978-3-13-671203-0.

Department of Pediatric and Preventive Dentistry

Subject: PREVENTIVE DENTISTRY II.

Year, Semester: 4th year/1st semester Number of teaching hours: Seminar: 14

1st week:	8th week:
Seminar: Oral status and indices.	Seminar: Oral cancer prevention.
2nd week:	9th week:
Seminar: Caries risk assessment.	Seminar: Modification of biofim pathogenicity.
3rd week:	10th week:
Seminar: How to plan preventive programs? How to educate patients?	Seminar: The effect of diet on oral health.
•	11th week:
4th week:	Seminar: Fissure sealing 2.
Seminar: Preventive programs in practice.	
Fissure sealing.	12th week:
c	Seminar: Preventive care in conservative
5th week:	dentistry and prosthodontics.
Seminar: Fluoride therapy, remineralization	5 1
techniques.	13th week:
······································	Seminar: Up-to-date preventive methods.
6th week:	
Seminar: Dental prevention during pregnancy	14th week:
and infancy.	Seminar: Self-control test.
7th week:	
Seminar: Mid-semester test.	
Requirements

The aims and objectives of the course

The goal of the course is to provide the students with both an introductory knowledge of the complexities of assessing and addressing disease and prevention at the individual and population level and an understanding of the role of the dental profession in promoting and maintaining oral health.

Short description of the course

Provides an introduction to dental disease, the causes and methods for prevention. An intense focus on dental caries and preliminary information on periodontal disease. Students learn to utilize patient assessment techniques and provide oral health information. The main topics discussed are:

-Application of the basic sciences in maintaining healthy oral tissues

-The principles and control of dental diseases

-The etiology, epidemiology and prevention of dental caries

-Oral hygiene, nutrition and dietary measures, and dental health education as a preventive dental service

-Instruction of the oral hygiene methods

-The metabolic and dental aspects of fluorides in the control of dental caries

-Preventive aspects of prosthodontics and conservative dentistry

-Oral cancer prevention

Compulsory reading

Harris N.O., García-Godoy F: Primary preventive dentistry 6th ed. Appleton & Lange 2004

Recommended reading

Limeback H: Comprehensive Preventive Dentistry. Wiley-Blackwell 2012

Assessment

AW 5 grade

Requirements

Active participation in the seminars is obligatory.

With acceptable written (medical, legal, etc.) certificate students may miss 2 seminars. The

certificates must be sent to the Educational Secretariat of the Faculty of Dentistry

(fokot@dental.unideb.hu) within 3 working days. There is no possibility to compensate the missed seminars.

Two written self-control tests will be held during the semester, the SCTs are obligatory to take. The missed SCT cannot be repeated. The result of the missed SCT is 0% (failed).

Course exemption

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week of the semester.

Conditions of signing the index

-Participation in all seminars (a maximum of 2 certified absences are allowed) -Mid-semester and final tests are obligatory to take

Calculation of the AW5 grade

The mark of the course will be calculated according to the average of the result of the mid-semester test and the result of the final test.

If the average of the final test is under 60%, the result of the course is going to be a fail (regardless the grade of the mid-semester test) and the student must take an end-semester (oral) exam as a ,B' chance.

60-69.9%	pass (2)
70-79.9%	satisfactory (3)
80-89.9%	good (4)
from 90%	excellent (5)

Department of Periodontology

Subject: **PERIODONTOLOGY I.**

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: 14 Practical: 10

1st week: Lecture: Anatomy of the periodontium.	8th week: Lecture: Self-control test.
2nd week: Lecture: Dental calculus, bacterial plaque and other deposits. Microbiology of periodontal disease.	 9th week: Lecture: Classification of periodontal disease. Advanced diagnostic methods in periodontology. 10th week: Lecture: Gingivitic: Clinical features and
Lecture: The role of bacterial plaque and other local factors in the etiology of periodontal diseases.	diagnosis. 11th week: Lecture: Periodontitis: Clinical features and
4th week: Lecture: Etiology of periodontal disease: the role of systemic factors.	diagnosis. 12th week: Lecture: Emergencies and acute conditions in
5th week:Lecture: Pathogenesis of periodontal disease I.6th week:	13th week:Lecture: Trauma from occlusion.
Lecture: Pathogenesis of periodontal disease II. 7th week: Lecture: Clinical diagnosis and treatment plan	14th week: Lecture: Advanced diagnostic methods in periodontology.
or periodomai disease ili generai.	

Requirements

The aims and objectives of this course

- 1. Examination of periodontium
- 1.1 Physical examination
- 2. Treatment of periodontal disorders in dental practice
- 2.1 Instruction and motivation of patients
- 2.2 Causative treatment of periodontal disorders: Scaling and root planning, curettage
- 2.3 Periodontal surgery
- 2.4 Indications and contraindications of periodontal surgery, post surgical treatments
- 3. Medicaments in periodontal therapy
- 4. Periodontal aspects of implantology

Short description of the course

-Taking previous medical history-the patients complaint(s)

-Inspection-healthy periodontium-distinction from the diseased

-Clinical examination of periodontium-periodontal probing; probing depth, pocket depth, defiition of loss of attachment and their relationship

-Periodontal charting and recording-definition and periodonatl indices

-Disclosing agents and their application in practice

-Demonstration of different tooth brushing methods on model

-Instruments and their usage (hand, rotational and ultra sound scalers; instruments for polishing,

ploishing pastes, maintenance of instruments)

-Therapy assessment: results, failures, follow up

-Chemical plaque control

-Antibiotics in periodontics

-Subgingival irrigation

-Periodontal dressings, tissue adhesives in practice

-Treatment of root hypersensitivity

-Special oral hygiene aids, instruments

Assessment:

End of Semester Exam

Requirements

Lectures: As given in the timetable (time and place)

Practices: In the building of Faculty of Dentistry (Dept. of Periodontology)

-With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 20% even if it is certificated.

-The number of accepted practices must be above 80% of practices.

-Missed practice is not-accepted.

-Students have to fulfil the minimum practical requirements of the subject.

-The minimum practical requirements of the subject will be handed out in the first week of the semester.

Course exemption

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week

Conditions of signing the lecture book

-Active participation in the practices (there is no possibility to compensate the missed practices). -The practical work will be evaluated at the end of each practice separately, as 'accepted' or 'not-accepted'. -The test written during the semester should be passed. The result of the failed test could be repeated once during the semester.

Calculation of the grade

The result of the written test and the result of the ESE will give the final mark.

Department of Pharmacology and Pharmacotherapy

Subject: DENTAL PHARMACOLOGY I.

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: **30** Seminar: **14**

1st week:

Lecture: Lecture 1: Drug receptors and pharmacodymamics 1. Lecture 2: Drug receptors and pharmacodymamics 2. Seminar: Prescription writing.

2nd week: Lecture: Lecture 3: Pharmacokinetics 1. Lecture 4: Pharmacokinetics 2. Seminar: Prescription writing.

3rd week:

Lecture: Lecture 5: Pharmacology of adrenoceptors 1. Lecture 6: Pharmacology of adrenoceptors 2. Seminar: Prescription writing.

4th week:

Lecture: Lecture 7: Pharmacology of adrenoceptors 3. Lecture 8: Cholinergic drugs 1. Seminar: Prescription writing.

5th week: Lecture: Lecture 9: Cholinergic drugs 2. Lecture 10: Antihypertensive agents 1. **Seminar:** Prescription writing.

6th week: Lecture: Lecture 11: Antihypertensive agents 2. Lecture 12: ACE inhibitors. **Seminar:** WRITTEN EXAMINATION. 7th week:

Lecture: Lecture 13: Antianginal drugs. Lecture 14: Agents used in hyperlipidemia. Seminar: Prescription writing.

8th week:

Lecture: Lecture 15: Drugs used in congestive heart failure Lecture 16: Antiarrhythmic agents Seminar: Prescription writing.

9th week: Lecture: Lecture 17: General anesthetics Lecture 18: Local anesthetics 1. Seminar: Prescription writing.

10th week: Lecture: Lecture 19: Local anesthetics 2. Lectire 20: Local anesthetics 3. Seminar: Prescription writing.

11th week: Lecture: Lecture 21: Opioid analgesics. Lecture 22: Non-opioid analgesics and antipyretics 1. Seminar: WRITTEN EXAMINATION.

12th week:Lecture: Lecture 23: Non-opioid analgesics and antipyretics 2.Lecture 24: Non-steroidal anti-inflammatory drugs 1.Seminar: Prescription writing.

13th week:

Lecture: Lecture 25: Antiasthmatic drugs Lecture 26: Drugs used in disorders of coagulation, Antianemic agents Seminar: Prescription writing 14th week: Lecture: Lecture 27: Diuretics Lecture 28: Drugs acting on the gastrointestinal tract Seminar: WRITTEN EXAMINATION.

Requirements

Attendance at seminars is compulsory. The Department may refuse to accept the semester if they are absent from more than 2 seminars. The current knowledge of the students will be tested in every month in each semester using a written test. Participation is compulsory, the results of the tests are recorded and will be presented to the examiner during the End of Semester Examination and the Final Examination. At the end of the 1st semester the students are required to take the End of Semester Examination (written and oral), based on the material taught in the semester. At the end of the 2nd semester the students are required to take the written and oral Final Examination, based on the material taught in Pharmacology in both semesters.

Department of Public Health and Epidemiology

1

Subject: PREVENTIVE MEDICINE AND PUBLIC HEALTH

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: **28** Seminar: **24** Practical: **4**

1st week:

Lecture: 1. The history, scope and methods of public health and preventive medicine, major public health issues in developing and developed countries 2. Introduction to human ecology Seminar: 1-2. Demographical methods to study the health status of thepopulation	 4th week: Lecture: 7. Malnutrition, Nutritional deficiency diseases 8.Foodborne diseases, Diet related chronic diseases, Obesity Seminar: 7-8. Financing dental services I.
2nd week: Lecture: 3. Air pollution and health 4. Water pollution and health Seminar: 3-4. Principles of prevention	5th week: Lecture: 9. Health effect of noise and vibration 10. Heavy metals in the human environment Seminar: 9-10. Financing dental services II.
3rd week: Lecture: 5. Health hazards of ionising radiation and radioactive substances 6. Toxicology of organic solvents and pesticides Seminar: 5-6. Occupational health and safety in dentist practice	6th week: Lecture: 11.Global climate change and human health 12. Public health consequences of substance abuse Seminar: 11-12. Cadmium toxicity, case study

7th week: Lecture: 13. Socioeconomic determinants of health, inequality and health 14. The effects of personal factors on health Seminar: 13-14. Health promotion, Health education	epidemiology of communicable diseases 22. Epidemiology of communicable diseases transmitted through the skin and sexually transmitted diseases Seminar: 21-22. Reporting and control of communicable diseases, vaccination
 8th week: Lecture: 15. Introduction into the general epidemiology of non-communicable diseases 16. Epidemiology of mental diseases Seminar: 15-16. Midterm test 9th week: Lecture: 17. Epidemiology of neoplastic diseases 18. Epidemiology of cardiovascular diseases Seminar: 17-18. Epidemiological measures and studies 	 12th week: Lecture: 23. Epidemiology of nosocomial infections 24. Epidemiology of respiratory infectious diseases Practical: 23-24. Global Burden of Diseases database 13th week: Lecture: 25. Epidemiology of viral hepatitis 26. Health policy principles Seminar: 25-26. Sterilization and disinfection
 10th week: Lecture: 19. Epidemiology of skeletal and dental diseases 20. Epidemiology of chronic respiratory diseases Seminar: 19-20. Preventive strategies 11th week: 	 14th week: Lecture: 27. Health care systems of developed countries 28. Needs, demands and use of health services Practical: 27-28. Hospital infection control

Lecture: 21. Introduction into the general

Requirements

Requirements for signing the lecture book:

Attendance of lectures is highly recommended. Attendance of the seminars is obligatory. The academic adviser refuse to sign the lecture book if a student is absent more than two times from the seminars even if he/she has an acceptable excuse. Students should also perform a midterm test on the 8th week of the semester. The midterm test covers the topics of all lectures and seminars held in the first 7 weeks of the semester. There is no possibility to repeat this test during the semester and examination period. The mark of the midterm test will be included in the calculation of the final average mark of the subject.

Requirements for the final exam:

The final exam involves written and oral sections covering the topics of all lectures and seminars of the subject. The oral exam covers the topics of all seminars of the semester. The written exam consists of multiple choice test questions related to Environmental Health, Epidemiology and Health Policy. Each section is evaluated separately. The final exam is assessed on the basis of the average of five marks including the result of midterm test, and the results of Environmental Health, Epidemiology, Health Policy tests, and mark of the oral exam. It is failed if either the oral or any part (Environmental Health, Epidemiology, Health Policy) of the written exam is graded unsatisfactory. Students should repeat only that/those section/sections of the final exam that

has/have been previously unsuccessful. In this case the final exam is graded according to the average of the passing marks obtained on the first and repeated exams.

Type of exam:

final exam after one semester (ESE)

Prerequisites: completion of dental microbiology, organ and oral pathology subjects

Course description

The course covers the main areas of public health: environmental health including the health consequences of air and water pollution, occupational and nutritional health; the principles of epidemiology, the epidemiology and control of communicable and non-communicable diseases. Special attention is given on the main topics underlying nutritional disorders and deficiencies, health hazards of pharmacist' practice and preventive strategies.

Requirements

To acquire knowledge about the principles and the most important issues of environmental health, communicable and non-communicable diseases and health policy.

Methods of education

The education of the subject is based on lectures and seminars. The practical adaptation of the topics of lectures are highly promoted by seminars. Students will learn about the major public health issues in developing and developed countries and organisation of public health services.During the epidemiology seminars students will learn how to calculate the most important indicators for the measurement of morbidity and mortality. In addition, the epidemiology of communicable and non-communicable diseases will be discussed in detail.

Department of Surgery

Subject: SURGERY

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: **14**

1st week:	pathophysiology of bleeding.
Lecture: History of surgery. Wounds, wound	
healing. Asepsis, antisepsis.	5th week:
	Lecture:
2nd week:	Basics of gynecology (Dental inflammation and
Lecture:	dental anesthesia in pregnancy.)
Burns and other thermic injuries. Reconstruction	
after burns.	6th week:
	Lecture: Bone fractures and their healing.
3rd week:	Conservative and operative treatment.
Lecture: Indications and contraindications of	
surgery, legal considerations. Surgical infections,	7th week:
antibiotic treatment	Lecture: Diseases of the kidneys and urinary
	tract
4th week:	
Lecture:	8th week:
Basics of anesthesiology. Blood transfusion,	Lecture: Surgical gastroenterology (Stomach,

intestines, liver, biliary duct and pancreas).	
Hernia surgery.	12th week:
	Lecture: Acute abdomen, types of bowel
9th week:	obstruction
Lecture: Trauma of the upper and lower	
extremities; trauma of soft tissue, bones and	13th week:
joints	Lecture: Surgical oncology. Endocrine and
	breast surgery.
10th week:	
Lecture: Diagnostics and treatment of	14th week:
polytraumatized patients. Head, chest and	Lecture: End Semester Exam
abdominal injuries	
11th week:	Self Control Test
Lecture: First-aid, basics of life support,	
physiology of shock.	

Reading materials:

Doherty: Current Surgical Diagnosis and Treatment. 13th edition. McGraw-Hill-Companies, 2009. ISBN: 0-0716-3515-7. Clive R. G. Quick: Essential Surgery: Problems, Diagnosis and Management. 5th Edition. Churchill Livingstone, 2013. ISBN: 978-0702046742.

Requirements

Aim of the Course

Increasing the general medical awareness of dentistry students. This includes the familiarizing them with some of the most important surgical disciplines and the border areas of surgical disciplines. Emphasis will be given to discuss the surgical issues related to dental practice, reviewing symptoms, exploring some pathophysiological relations, and to be aware of the available therapeutic options. Through this, students as future practitioners of this manual profession will be prepared to acquire surgical approach.

Short description of the course

Students attend weekly one lecture for 13 weeks followed by an examination (in form of a written test) on week 14.

Compulsory literature

Anil Agarwal, Neil Borley, Greg McLatchie (szerk.): Oxford Handbook of Operative Surgery Kiadó: Oxford University Press,

Kiadás éve: 2017 (3. kiadás)

ISBN: 978-0-19-960891-1

Recommended literature

Anil Agarwal, Neil Borley, Greg McLatchie: Oxford Handbook of Operative Surgery (Oxford University Press, 2017)

Type of exam

Written examination, based on test questions, which incorporate the discussed surgical diseases **Description of course requirements**

Knowledge of what has been said at the lecture is of key importance among the course requirements. A sketch is available from all of the presentations listed in the curriculum and

available on the Faculty's website and they can be downloaded from there. It is suggested that the student prepares the literature on the basis of the presentations from the recommended and compulsory literature.

Disclaimers / information for repeaters

Identical to the rules applied to other non-professional subjects in the education of the FD.

Signature Conditions

Participation on the selected lectures.

Rules for grade calculation

Successful completion of the end-term multiple-choice test, where the grade is better, as more correct answers are given. Who reach 80% or above will be rated with 5 (excellent), fewer than 20% of the answers (0-19%) will fail (1).

Faculty of Dentistry

Subject: THESIS CONSULTATION I.

Year, Semester: 4th year/1st semester Number of teaching hours: Seminar: **75**

Department of Biomaterials and Prosthetic Dentistry

Subject: COMPLEX DENTISTRY II.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: 5 Practical: 105

1st week:	3rd week:
Lecture: Epidemiology, dental indices and their	Lecture: Diagnostics of pulp diseases,
importance	sensitivity and specificities
Practical: 1-15 week: Complex dental treatment:	
restorative, periodontial and extraction	4th week:
procedures according to patients' needs. The	Lecture: Methods of periodontal diagnostics,
minimum requirements declared by the	sensitivity and specificities
departments to be fulfilled. General nursering	
procedures during treatments.	5th week:
	Lecture: Diagnostical methods of oral mucosa
2nd week:	diseases
Lecture: Methods of caries diagnostics,	
sensitivity and specificities	

Requirements

Assessment:

AW5. Continuous monitoring of the knowledge during practices. The grade is given on the basis of the student's term-time practical performance and this is considered as the final grade of the end

semester exam.

The grade cannot be improved during the exam period

Signature conditions:

-Completion of the required minimums.

-Active participation on the practices (there is no possibility to compensate the missed practices). -The practices begin/end according to the timetable, delay is not permitted. Attendance can only be accepted if the student is present at the venue from the beginning until the end of the practice. -With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 2 patient treatment and 1 assistance practice altogether. All missed practices need to be certified.

-All procedures amongst the practical work will be evaluated with grades. The final grade is calculated on basis of the grade-averages received from all special fields. (The calculations follow the general rule for rounding, from x.51.)

-The student's performance provided on general practices will be evaluated twice, in the 6th and in the 13th week, during the semester and the student will be notified in written form by non-acceptable performance.

-Grades given on the practices, will be the end semester grades, which cannot be improved during the exam period.

-In addition, the supervisor takes the professional attitude and responsibility of the student into account, and his / her effort to earn or maintain professional development, the proper behavior towards the clinical staff, the patients and their relatives. The correct fulfillment of the administrative responsibilities and the appropriate behavior towards of the administrative personnel. -In case the performance is non-acceptable, the student will be warned in written form. From students with two warnings the signature will be denied. In case of not fulfilling the requirements, the student will be warned with the PROFESSIONALISM EVALUATION REPORT FORM (F118 // 1ST). The student who had to be warned twice during the semester because of inadequate performance due to professional reasons or inadequate professional attitudes his / her the signature will be rejected.

The Faculty of Dentistry provides students with 1 white medical coat, 1 suit sluice (trousers and top) and 1 locker key for the duration of the Complex practice. The students undertake to return these items at the end of the practice.

Prerequisites: Complex Dentistry I., Dosimetry, Radiation Health Effects

Subject: **DIGITAL DENTISTRY**

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: 14 Practical: 14

2nd week:
Lecture: Fundamentals of basic 3D scannings I.
Practical: Open source demonstrating
applications

 3rd week: Lecture: Fundamentals of basic 3D scannings II. Practical: Open source demonstrating applications 4th week: 	9th week: Lecture: Custom-made implant design and fabrication based on 3D printing Practical: Custom-made implant design and fabrication based on 3D printing
 Lecture: Efficient 3D point cloud processing Practical: Software-based processing of 3D point clouds 5th week: Lecture: Mesh optimization methodsand their geometrical principles Practical: Mesh optimization in practice 	 10th week: Lecture: Digital dentistry in fixed prosthodontics Practical: Plan of the temporary crown using digital techniques 11th week: Lecture: Removable partial dentures using
6th week: Lecture: Introduction to Computer Aided manufacturing (CAx). Practical: Application of CAD szoftware (FreeCAD as example).	digital technologies Practical: Plan of the temporary crown using digital techniques 12th week: Lecture: Total upper and lower dentures using digital technologies Practical: Plan of the technologies
Th week: Lecture: Introduction to mesh and solid models: coordinate geometry and file formats. Practical: Mesh and solid modelling with CAD (Computer aided Design/Drawing) application.	 Practical: Plan of the temporary crown using digital techniques 13th week: Lecture: Implant supported prosthesis using digital technologies
8th week: Lecture: Introduction to cutting (material removal processes): machines, tools and materials; cutting forces, CNC machining. Introduction to additive technologies. Practical: Machining design with CAM (Computer Aided Manufacturing) applications. Rapid Prototyping with 3D printing.	Practical: Plan of the temporary crown using digital techniques14th week: Lecture: Test Practical: Practical test

Requirements

Conditions of signature to the lecture book:

Active participation in the practices (there is no possibility to compensate for missed practices). The practices begin/end according to the timetable, lateness is not permitted. The signature in the lecture book will be refused in cases of absences from more than 2 practices.

All absences must be certified.

Final five grade practical (AW5) evaluation:

The evaluation covers the topics of lectures and practices and consists of a written and a practical part. If the student fails, or does not attend the evaluation, the AW5 grade is "fail", which can be improved as a "B" or "C" chance during the exam period.

Subject: PROSTHETIC DENTISTRY II.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: 14 Practical: 10	
1st week:	Insertion, counselling, complaints and
examination of soft and hard tissues, diagnosis,	adjustments, relitting. Procedures and repairs.
treatment plan.	8th week:
2nd week:	Lecture: Temporomandibular disorders and their treatments I.
Lecture: Impression techniques, determination	
of the centric relation position, usage of the facebow.	9th week: Lecture: Temporomandibular disorders and their treatments II.
3rd week:	
Lecture: Statical and esthetic considerations of arranging artificial teeth.	Lecture: Precision attachments for partial dentures (compulsory lecture)
4th week:	
Lecture: Denture delivering and oral hygiene for total denture patients.	11th week: Lecture: Mechanical principles of the partial denture design. (compulsory lecture)
5th week:	
Lecture: Definition of removable partial prosthodontics, types of partial dentures, parts of partial dentures. Support and anchorage of the	12th week: Lecture: Biomechanical aspects of wearing a removable partial denture. (compulsory lecture)
denture.	13th week:
6th week: Lecture: Components of a removable denture. Casted clasp systems	Lecture: Principles of planning a removable partial denture. (compulsory lecture)
Custed clusp systems.	14th week:
7th week: Lecture: Clinical procedures of constructing a removable partial denture step by step. Reaction of oral mucosa to bearing the base of a denture.	Lecture: Dental laboratory relations. Consultation.

Requirements

The aim of acquiring the professional content of the subject:

The aim of the course is to expand knowledge about treatment of totally and partially edentulous cases, including combined restoration, by using the information of "Prosthetic Dentistry I". Course includes detailed information on clinical and technical phases of treatment. Special practices focus on certain topics in theory and practice.

Brief course programme: Students gain knowledge on the anatomical, clinical anatomical and

physiological aspects of treatment of totally and partially edentulous situations. Course includes expanded knowledge on treatment planning, including necessary fixed components. Detailed information on clinical and technical phases is also part of the course.

Competences:

The student gains competence in creating a treatment plan for total and partial edentulous situations, and to clinically treat such cases.

Requirements:

Students are required to attend the lectures indicated in the syllabus. Participation in the practices is also compulsory. Missed practices can be compensated for only with the permission of the Department of Biomaterials and Prosthetic Dentistry. The presence in practices and compulsory lectures will be recorded. If a student is late or leave early, it is considered as an absence.

Assessment:

End of semester examination. The exam starts with treatment planning for removable partial denture on gypsum model as an entrance exam. If the treatment planning is failed, the exam grade is "failed"(1) without choosing topics.

Department of Orthodontics

Subject: ORTHODONTICS II.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: **15** Seminar: **1** Practical: **15**

1st week:	
Lecture: Orthodontic materials	6th week:
	Lecture: Fixed appliances 3-Phases of
2nd week:	Multiband Treatment
Lecture: Treatment of Class I. anomalies- Angle	
Ι	7th week:
	Lecture: Treatment of Class III anomalies-Angle
3rd week:	III
Lecture: Treatment of Class II anomalies-Angle	
II	8th week:
	Lecture: Interdisciplinary orthodontics 1-
4th week:	Combined orthodontic and surgical treatment
Lecture: Fixed appliances 1-Lingual arch,	
Goshgarian, Hyrax, Temporary Anchorage	9th week:
Device	Lecture: Interdisciplinary orthodontics 2-
	Complex Treatment of Patient with Cleft Lip and
5th week:	Cleft Palate
Lecture: Fixed appliances 2-Multiband	10th week:
appliance	Lecture: Interdisciplinary orthodontics 3- Adult
	* *

orthodontic treatment 1	13th week:
11th week:	Lecture: Retention, Relapse
Lecture: <i>Interdisciplinary orthodontics 3-</i> Adult	
orthodontic treatment 2	14th week:
	Lecture: Consultation
12th week:	
Lecture: Prevention of malocclusion	15th week:
	Lecture: Consultation

Reading materials:

W.R. Proffit: Contemporary Orthodontics.Mosby Year Book, 2000. ISBN: 1-556-64553-8.S.J. Littlewood, L. Mitchell: An introduction to Orthodontics.5th Ed.. Oxford, 2019. ISBN: 9780198808664.

Requirements

Prerequisites of taking the subject: Orthodontics I

The aims and objectives of this course

To provide an insight for dentistry students into the orthodontist thinking and to present the basic knowledge and correlations.

Short description of the course

During the course, the students learn about the causes and treatments of ever-evolving and changing orthodontic and jaw orthopaedic disorders, and the limits of the profession. The second semester aims to introduce the relevant orthodontic treatments.

Requirements

Lectures: As given in the timetable (time & place)

Practices: In the building of Faculty of Dentistry

Students attendance at the lectures is not mandatory but recommended.

Active participation in the practices (there is no possibility to compensate the missed practices).

Absences must be certified within two weeks and these may not exceed 1 practice of the practical lessons.

Course exemption

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week.

Conditions of signing the index

The Department may refuse to sign the students' Index if they are absent from more than 1 practice of all practical lessons in a semester.

Assessment

Final exam.

Calculation of the grade

Before the final exam it is compulsory to complete the minimum questions (70%).

The students have to choose from the exam topics.

Department of Emergency Medicine

Subject: EMERGENCY MEDICINE

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: 22 Practical: 22

1st week:

Lecture: General approach for emergency care, urgency levels, transportation trauma, etc. Rescue techniques in catastrophe situations Practical: Initial assessment and treatment with the airway, breathing, circulation, disability, exposure, approach in emergency medicine.Practical approach for emergency medicine. Prehospital Managament. Airway management. Symptoms of airway obstruction.	 6th week: Lecture: Pediatric emergencies cardiac arrest in childhood, acute circulatory and respiratory failure, seizures, etc. Practical: Pediatric CPR. 7th week: Lecture: Poisoning psychiatric emergencies. Practical: Complex rapid trauma survey.
2nd week: Lecture: Cardiac arrest, levels of cardiopulmonary resuscitation, basic life support, professional basic life support, advanced life support, post resuscitation care. Practical: BLS.	8th week: Lecture: Abdominal pain. Gastrointestinal bleeding. Vomiting and diarrhea. Obstetric and gynecologic emergencies. Practical: Complex treatment of critical patients.
3rd week: Lecture: Cardiac rhythm disturbances. Hypertensive emergencies. Syncope, endocrine, metabolic and acid-base emergencies. Practical: Safe defibrillation. AEDs, manual defibrillators.	 9th week: Lecture: Stroke, headache, subarachnoid hemorrhage, convulsions, altered mental status, coma. Practical: Complex case situation. 10th week:
4th week: Lecture: Chest pain, acute coronary syndromes, pulmonary embolism, aortic dissection. Practical: Indications and limitations of maintaining peripheral veins. Vein puncture. Intraosseous access. Central vein catheterization.	 Lecture: Abdominal pain. Gastrointestinal tracct bleeding. Vomiting and diarrhea. Obstetric and gynecologic emergencies. Practical: Complex case situations. 11th week: Lecture: Disaster medicine. Conception of the
Gastric lavage, delivery in the field. 5th week: Lecture: Shock. Acute severe allergic reactions, anaphylaxis. Respiratory failure. Practical: CPR practice/ALS.	mass accident disaster. Organisation of rescue in the field. Practical: Consultation.

Requirements

Requirements for signing the lecture book:

For obtaining the signature at the end of the semester you are required to attend all practicals. In

case of absence you have to do the practical at a chosen time, written excuse is not accepted. Concerning the supplementary practical you have to contact your physician responsible for the practical. Facilities for maximum 2 (two) complementary practicals are available at the Simulation Center in Debrecen. If somebody will have more than 2 missed practices will get no signature. Evaluation: students write a test every week reading previous week lectures topic. The final examination consists of an oral and a practical part. Students can go for the oral exam only if they pass the practical exam. You can register for the exam before the beginning of the examination period. In case you fail to register for the exam we consider it as a failed one. "A" and "B" exam chances are assured.

The subject Emergency medicine (AOOXY03T9) includes course material quivalent to 0.5 credits according to the electronic, Moodle-based teaching program entitled "Basic Life Support module (BLS)" and course

material equivalent to 2.0 credits according to the electronic, Moodle-based teaching program entitled "Advanced Life Support module (ALS)"

Department of Internal Medicine

Subject: INTERNAL MEDICINE II.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: **28** Practical: **28**

1st week: Lecture: Disorders of oesophagus, stomach and bowels.	Practical: Patients with hematological disorders and bleedings (Department of Internal Medicine building B)
Practical: Patients with gastrointestinal and	
Medicine building B)	5th week: Lecture: Disorders of the platelets: ITP, TTP, HUS, DIC
2nd week:	Practical: Patients with hematological disorders
Lecture: Acute and chronic liver diseases. Liver cirrhosis.	and bleedings (Department of Internal Medicine building B)
Practical: Patients with gastrointestinal and	
hepatological disorders (Department of Internal Medicine building B)	6th week: Lecture: Anaemias. Acute leukaemias. Practical: Patients with hematological disorders
3rd week:	or thrombosis (Department of Internal Medicine
Lecture: Disorders of the gall bladder and pancreas.	building B)
Practical: Patients with gastrointestinal and	7th week:
hepatological disorders (Department of Internal Medicine building B)	Lecture: Chronic leukaemias. Chronic myeloproliferative disorders.
	Practical: Patients with hematological and
4th week:	bleeding disorders (Department of Internal
Lecture: Coagulopathies, von Willebrand1s disease. Drug induced bleedings.	Medicine building B)

disorders and diabetes mellitus (Department of 8th week: Lecture: Lymphomas (Hodgkin and non-Internal Medicine building A) Hodgkin). Myelodysplasia. Patients with immunological disorders (3rd Dept. Practical: Patients with hematological and Medicine). bleeding disorders (Department of Internal Medicine building B) 12th week: Lecture: Immune deficiency, vasculitis. 9th week: Practical: Patients with immunological disorders Lecture: Disorders of the pituitary gland, (Institute of Internal Medicine Building C) adrenal gland and thyroid gland. 13th week: 10th week: Lecture: Rheumatologic disorders. Peripheral circulatory deficiency. Lecture: Disorders of the parathyroid gland. Practical: Patients with immunological disorders Diabetes mellitus. Practical: Patients with endocrinological (Institute of Internal Medicine Building C) disorders and diabetes mellitus (Department of Internal Medicine building A) 14th week: Lecture: Disorders of the orbita. Uveitis. 11th week: Practical: Institute of Internal Medicine, Lecture: Systemic autoimmune disorders: SLE, Division of Rheumatology Sjögren, systemic sclerosis, polymyositis. Practical: Patients with endocrinological

Requirements

Participation in the lectures is recommended, the practicals are obligatory. Following the first semester an end of semester exam (ESE) is necessary. Final Exam (FE) is compulsory at the end of the 2nd semester. Signature of the lecture book is denied after two missing practicals. The student is expected to be able to communicate with the patient in Hungarian, including history taking. 1st part is written (minimum test, \geq 85%), 2nd part is practical exam; 3rd part is oral exam (two topics). Students attending more than 80% of the lectures, +20% will be calculated at the minimum test.

Department of Operative Dentistry and Endodontics

Subject: RESTORATIVE DENTISTRY II. (ENDODONTICS)

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: 14 Practical: 10

1st week:	3rd week:
Lecture: The pulp and periapical area: anatomy	Lecture: The biology of dental pulp: pathology,
and histology. The dentin-pulp complex. The	symptoms and therapy
principles of endodontology	
	4th week:
2nd week:	Lecture: Endodontics in health related problems
Lecture: Vital pulp therapy	

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5th week:	
Lecture: Guidelines in endodontics	10th week:
	Lecture: Restoration of endodontically treated
6th week:	teeth
Lecture: Modern concepts and methods in the	
course of shaping the root canal (rotary	11th week:
instruments)	Lecture: Endodontic revision (surgical and non-
741	surgical retreatment).
/tn week:	
Lecture: Different materials in endodontics:	12th week:
irrigation materials, intracanal medicaments and	Lecture: Tooth discoloration (causes). Bleaching
root filling materials	of non vital teeth
8th week•	13th week•
Lecture: Obturation techniques I : cold-warm	Lecture: Traditional and microsurgical
tachniques Evaluation of the root agent filling	techniques in endedentie surgery
techniques. Evaluation of the foot canal ming	teeninques in endodontie surgery
9th week:	14th week:
Lecture: Root canal treatment: problems.	Lecture: Written exam
failures and complications Flare-ups in	
endodontics	
	1

Requirements

Course objectives

The aim of the course is to provide to the students fundamental knowledge for the performation of conservative dental procedures.

Short description of the course

During the course, the subject of restorative dentistry will be taught in theoretical lectures and special practises.

Examination: exam at the end of the mid semester (ESE_oral exam).

Materials for exam preparation: official lecture book, lectures and materials of the special practicals.

Requirements for signing the lecture book

•During the semester, in accordance with the course requirements there is one written test that takes place during a lecture. The self-control tests cannot be repeated only with an adequate proof in a given time. The result of any missed test conclude to failure (1). The result cannot be improved.

• Special practicals:

- The practices start and finish in accordance with the timetable, arriving late is not allowed.
- Students are required to stay at the premises of the practical from the beginning to the end of the class and participate actively in the practical work.
- Absences, in theory, are not allowed.
- In reasoned cases, for certified absences the department ensure make up classes on a previously agreed date during the semester.
- A certification is required for any absences which has to be handed to the leader of the

practice course.

- The student's theoretical preparedness, practical work and manual skills are evaluated by the teach during the exercises.
- Missing the special practice or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

Special practices (4th 2nd semester): (10) 2 x 5 lessons

Course exemption (reason)

Attendance at the course is not mandatory with valid signature obtained in a previous semester, therefore exemption from attending practices can be requested. The prerequisite for this is that the student needs to submit the request on the appropriate form via https://elearning.med.unideb.hu system at the corresponding course no later than the last working day of the first week of education. Students exempted from attending special practices must also write the test.

Grade formation

The result of the test can impact on the grade of the oral exam.

!!! ATTENTION

ENDODONTIC CASE PRESENTATION (5th year from 2024/25 academic year)

During the case presentation, the student describes the case(s) of his/her own patient(s) treated in rubber dam isolation, which can be:

- 3 single-rooted teeth with one root canal or,
- 1 tooth with two root canals and 1 tooth with one root canal or,
- 1 molar with three or four root canals.

Presentation requirements:

• Filled signed endodontic form without any missing detail, approved, signed and stamped by the supervisor (a separate endodontic form must be filled out for each tooth)

- Photo of the final coronal restoration(s)
- Evaluable radiological documentation
- Logically built up PowerPoint computer presentation

The mandatory endodontics case study is planned according to previously agreed date and is presented in sequence order.

!!! Missing the presentation of case study or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

Requirements for taking up the subject: Restorative Dentistry I. (Cariology)

Department of Oral and Maxillofacial Surgery

Subject: ORAL SURGERY II.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: 14 Practical: 10

1st week:

Lecture: Maxillofacial traumatology, soft tissue

and tooth injuries, pathology of fractures

2nd week: Lecture: Diagnosis and treatment of mandibular fractures I.	8th week: Lecture: Neurological diseases of the face 9th week:
3rd week: Lecture: Diagnosis and treatment of mandibular fractures II.	Lecture: Developmental anomalies of maxillofacial region, clefts
4th week: Lecture: Central and lateral midface fractures	10th week: Lecture: Craniofacial surgery
and their treatment	11th week: Lecture: Orthognatic surgery
5th week: Lecture: Central and lateral midface fractures and their treatment II.	12th week: Lecture: Benign tumours
6th week: Lecture: First aid and temporary fixation in oral	13th week: Lecture: Bone tumours
7th week:	14th week: Lecture: Odontogenic tumours
Lecture: 1 WIJ diseases	

Requirements

Course objectives:

The aim of the course is to learn about traumas, developmental disorders of the stomatognath system, treatment options of benign tumor of the oral cavity and their symptoms and appearance, and to demonstrate the role of the dentist in treating these disorders.

Course exemption:

Students who have obtained signature in a previous semester must participate in the compulsory lectures and practices. There is no exemption from attending the compulsory lectures and special practices.

Course requirements and conditions for obtaining signature:

Active participation in the designated lectures is mandatory. Arriving late for the lectures is not accepted. Late students are not allowed to join the lectures. Students must participate in the lectures and practices from the beginning to the end thereof. Only one of the compulsory lectures may be missed. Any absence from the lectures and the special practice must be certified in a credible way **within three working days.** Certification must be showed in the Educational Office in person. Students who have more than one uncertified absence from the lectures will not get signature. The missed practice must be made up. Making up for the missed practice is subject to a credible certification and the prior permission of the head of department exclusively during the study term and with a group of the same program and same year. It is necessary to discuss the date of the make-up practice with the officer of the Educational Office. Students should join to the group of the smallest number of students with the permission of the practice leader of the chosen group.

Mandatory lectures:

Maxillofacial traumatology, soft tissue and tooth injuries, pathology of fractures-Dr. Boda R./Dr. Szabó A.

TMJ diseases-Dr. Horváth D./Dr. Szabó A.

Developmental anomalies of maxillofacial region, clefts-Dr. Boda R./Dr. Szabó A.

Orthognatic surgery-Dr. Boda R./Dr. Czompa L.

Odontogenic tumors-Dr. Szabó A.

Conditions for obtaining signature:

Only one of the designated lectures may be missed. The absence must be certified in a credible way within three working days. Absence from the practice must be certified in a credible way **within three working days**. Missed practices must be made up according the rules. Students who fail to make up the missed practice or have more than one uncertified absence from the compulsory lectures will not get signature.

Exam:

Oral end semester exam The exam covers the presentation and compulsory readings of the first and second semesters, and questions from Oral Surgery Propedeutics can be expected too. Not knowing the parts of the handouts provided by the Department that are emphasized by exclamation mark results in a failed exam.

Compulsory reading:

James Hupp, Myron Tucker, Edward Ellis: Contemporary Oral and Maxillofacial Surgery Mosby, 7th Edition, ISBN-13: 978-0323552219

Recommended books:

R. A. Cawson: Essentials of Oral Pathology and Oral Medicine, Churchill Livingstone, 1998, ISBN: 0443053480

Ellis, Hopp, Tucker: Contemporary Oral and Maxillofacial Surgery, Mosby, 2003, ISBN: 0-323-01 887-4

Szabó Gy.: Oral and Maxillofacial Surgery, Semmelweis Publishing House, Budapest, 2001., ISBN: 963-9214-15-9

Prerequisites: Oral Surgery I.

Department of Pediatric and Preventive Dentistry

Subject: PEDIATRIC DENTISTRY PROPEDEUTICS

Year, Semester: 4th year/2nd semester Number of teaching hours: Seminar: 5 Practical: 10

1st week:	4th week:
Seminar: Introduction to pediatric dentistry. The child patient.	Seminar: Comparison of the primary and permanent dentitions (anatomy, physiology).
2nd week:	5th week:
Seminar: Examination methods in pediatric dentistry. Patient chart and role of dental screening.	Seminar: Prevention in the pediatric dental practice.
3rd week:	6th week:
Seminar: Dental development and eruption.	Practical: Accurate oral status assessment in
Teething and eruption problems.	case of primary, mixed and permanent dentitions.

7th week:	11th week:
Practical: Fissure sealing.	Practical: Crown build up preparation for SS crown.
8th week:	12th week:
Practical: Class I preparation in primary molars.	Practical: Apexification.
9th week:	13th week:
Practical: Class II cavity preparation in primary teeth, matrix placement and wedging.	Practical: Splinting of traumatized teeth.
10th week:	14th week:
Practical: Pulpotomy in primary tooth.	Practical: Fluoride modalities.

Requirements

Prerequisites of taking the subject:

Preventive Dentistry II. Orthodontics I.

The aims and objectives of the course:

The goal of the course is to provide the students with an introductory knowledge and manual skills to treat child patients during the 5th year Pediatric Dentistry practicals.

Short description of the course:

Topics of the practices:

- -Accurate oral status assessment in case of primary, mixed and permanent dentitions
- -Fissure sealing
- -Class I preparation in primary molars
- -Class II cavity preparation in primary teeth, matrix placement and wedging
- -Pulpotomy in primary tooth
- -Crown build up and preparation for SS crowns
- -Apexification
- -Splinting of traumatized teeth
- -Fluoride modalities

Requirements:

Active participation on the seminars.

Participation in practices is obligatory.

With acceptable written certificate students may miss 1 seminar.

In case of missed practice, it should be made up for by attending the practical with another group. The missed seminar/practice must be certified within 3 working days to the Educational Office by e-mail (fokot@dental.unideb.hu)

Two written self-control tests will be held during the semester. All of the SCTs are obligatory to take and cannot be repeated. The result of the missed SCT is 0%.

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week.

Conditions of signing the index:

- students must attend all the seminars and practices
- students must sit for two self-control tests

Assessment:

AW 5 grade

Calculation of the grade:

5 grade (AW5) practical mark will be calculated according to the average of the practical grades (1/4) and the average of the 2 SCTs (3/4).

If the average of the SCTs is under 60%, the result of the course is fail (1) and the student must take an end-semester (oral) exam as a ,B' chance.

60-69,9%	pass (2)
70-79,9%	satisfactory (3)
80-89,9%	good (4)
from 90%	excellent (5)

Compulsory reading:

Handouts provided by the Pediatric and Preventive Dentistry Department (download from the elearning.med.unideb.hu website)

Department of Periodontology

Subject: PERIODONTOLOGY II.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: 14 Practical: 10

1st week:	5th week:
Lecture: Treatment of periodontal diseases:	Lecture: Surgical phase of periodontal therapy:
goals, steps.	Gingivectomy.
2nd week:	6th week:
Lecture: Cause-related therapy: Oral hygiene.	Lecture: Written exam.
3rd week: Lecture: Cause-related therapy: Root surface debridement.	7th week: Lecture: Surgical phase of periodontal therapy: Flap procedures.
4th week: Lecture: Chemical plaque-control. Drugs in periodontology.	8th week: Lecture: Surgical phase of periodontal therapy: Mucogingival surgery.

9th week:	12th week:
Lecture: Guided tissue regeneration. Growth factors and biochemical means.	Lecture: Written exam.
	13th week:
10th week: Lecture: Treatment of furcation-involved teeth.	Lecture: Connection between periodontology and other subdisciplines.
11th week: Lecture: Effectiveness of periodontal therapy. Maintenance phase.	14th week: Lecture: The epidemology of peridontal diseases.

Requirements

Prerequisites of taking the subject: Periodontology I

The aims and objectives of this course:

- 1. Examination of periodontium
- 1.1 Physical examination
- 2. Treatment of periodontal disorders in dental practice
- 2.1 Instruction and motivation of patients
- 2.2 Causative treatment of periodontal disorders: Scaling and root planning, curettage
- 2.3 Periodontal surgery
- 2.4 Indications and of contraindications of periodontal surgery, post surgical treatments
- 3. Medicaments in periodontal therapy
- 4. Periodontal aspects of implantology

Short description of the course:

-Taking previous medical history – the patients complaint(s)

-Inspection – healthy periodontium – distinction from the diseased

-Clinical examination of periodontium - periodontal probing; probing depth, pocket depth,

definition f loss of attachment and their relationship

-Periodontal charting and recording - definition and periodontal indices

-Disclosing agents and their application in practice

-Demonstration of different tooth brushing methods on model

-Instruments and their usage (hand, rotational and ultra sound scalers; instruments for polishing, polishing pastes, maintenance of instruments)

- -Therapy assessment: results, failures, follow up
- -Chemical plaque control
- -Antibiotics in periodontics
- -Subgingival irrigation
- -Periodontal dressings, tissue adhesives in practice

-Treatment of root hypersensitivity

-Special oral hygiene aids, instruments

Requirements:

Lectures: As given in the timetable (time & place) Practices: In the building of Faculty of Dentistry -With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 20%, even if it is certificated.

-The number of accepted practices must be above 80% of practices.

-Missed practice is not-accepted.

-Students have to fulfill the minimum practical requirements of the subject.

-The minimum practical requirements of the subject will be handed out in the first week of the semester

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested.

Conditions of signing the index:

-Active participation in the practices (there is no possibility to compensate the missed practices). -The practical work will be evaluated at the end of each practice separately, as 'accepted' or 'not-accepted'.

-The test written during the semester should be passed. The result of the failed test could be repeated once during the semester.

Assessment: ESE

Calculation of the grade:

At least 2 written self-control tests will be held during the semester. If one of the written tests is failed, there is no possibility to receive offered grade. In the exam period the student must take an oral exam as an ,A' ,B' or ,C'chance.

Compulsory reading:

Carranza's Clinical Periodontology 12th Ed., Elsevier ISBN:9780323227995 T. G. Wilson, K.S. Kornman: Fundamentals of Periodontics, 2nd Ed. Quintessence Books 2003., ISBN: 0-86715-405-5

Recommended Books:

Lindhe-Karring-Lang: Clinical Periodontology and Implant Dentistry (2 volumes) Wiley-Blackwell 2008. 5th Ed. ISBN: 978-1-4051-6099-5 Rateitschak, K. H. ed.: Periodontology, 2nd Ed., Thieme, Stuttgart, 1989.

Department of Pharmacology and Pharmacotherapy

Subject: DENTAL PHARMACOLOGY II.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: **30** Seminar: **14**

1st week: Lecture: Lecture 1: Introduction to central nervous system Lecture 2: Antipsychotics. Seminar: Prescription writing.

2nd week: Lecture: Lecture 3: Antidepressant agents Lecture 4: Pharmacological management of parkinsonism Seminar: Prescription writing.

3rd week: Lecture: Lecture 5: Sedative-hypnotic drugs 1 Lecture 6: Sedative-hypnotic drugs 2. **Seminar:** Prescription writing.

4th week: Lecture: Lecture 7: Antiepileptic drugs Lecture 8: The alcohols. **Seminar:** Prescription writing.

5th week: Lecture: Lecture 9: Principles and mechanisms of antibiotic therapy Lecture 10: Penicillins 1. **Seminar:** WRITTEN EXAMINATION.

6th week: Lecture: Lecture 11: Penicillins 2. Lecture 12: Cephalosporins **Seminar:** Prescription writing

7th week: Lecture: Lecture 13: Macrolides Lecture 14: Clindamycin Seminar: Prescription writing.

8th week: Lecture: Lecture 15: Tetracyclines and chloamphenicol Lecture 16: Aminoglycosides **Seminar:** Prescription writing.

9th week: Lecture: Lecture 17: Sulfonamides Lecture 18: Quinolones and fluoroquinolones Seminar: Prescription writing.

10th week: Lecture: Lecture 19: Antiviral agents Lecture 20: Antifungal agents. Seminar: Prescription writing.

11th week: Lecture: Lecture 21: Immunotherapy Lecture 22: Antineoplastic drugs. Seminar: WRITTEN EXAMINATION.

12th week: Lecture: Lecture 23: Anticaries agents Lecture 24: Antiplaque and antigingivitis drugs Seminar: Prescription writing

13th week: Lecture: Lecture 25: Antiseptics and disinfectants Lecture 26: Drugs for medical emergencies Seminar: Consultation

14th week: Lecture: Lecture 27: Drugs for medical emergencies Lecture 28: Toxicological aspects of dental practice Seminar: WRITTEN EXAMINATION

Requirements

Attendance at seminars is compulsory. The Department may refuse to accept the semester if they are absent from more than 2 seminars. The current knowledge of the students will be tested in every month in each semester using a written test. Participation is compulsory, the results of the tests are recorded and will be presented to the examiner during the End of Semester Examination and the Final Examination. At the end of the 1st semester the students are required to take the End of Semester Examination (written and oral), based on the material taught in the semester. At the end of the 2nd semester the students are required to take the written and oral Final Examination, based on

the material taught in Pharmacology in both semesters.

Faculty of Dentistry

Subject: COMPLEX SUMMER PRACTICE FOR DENTAL STUDENT

Year, Semester: 4th year/2nd semester Number of teaching hours: Practical: **120**

Subject: **THESIS CONSULTATION II.** Year, Semester: 4th year/2nd semester Number of teaching hours: Seminar: **75**

CHAPTER 20 ACADEMIC PROGRAM FOR THE 5TH YEAR

Department of Biomaterials and Prosthetic Dentistry

Subject: COMPLEX DENTISTRY III.

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: **5** Practical: **280**

1st week:	3rd week:
Lecture: Cardiovascular, hematologic and	Lecture: Preterm delivery, low birth weight and
respiratory diseases, including malignant ones	gynaecological diseases, including malignant
Practical: 1-15 week: Complex dental treatment:	ones
restorative, periodontial and extraction	
procedures according to patients' needs. The	4th week:
minimum requirements declared by the	Lecture: Autoimmune diseases
departments to be fulfilled. General nursering	
procedures during treatments	5th week:
	Lecture: Neurological diseases
2nd week:	
Lecture: Gastrointestinal diseases, including malignant ones	

Requirements

Assessment:

AW5. Continuous monitoring of the knowledge during practices. The grade is given on the basis of the student's term-time practical performance and this is considered as the final grade of the end semester exam.

The grade cannot be improved during the exam period.

Signature conditions:

-Completion of the required minimums.

Active participation on the practices (there is no possibility to compensate the missed practices).
The practices begin/end according to the timetable, delay is not permitted. Attendance can only be accepted if the student is present at the venue from the beginning until the end of the practice.
With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 2 patient treatment and 2 assistance practice altogether. All missed practices need to be certified.

-All procedures amongst the practical work will be evaluated with grades. The final grade is calculated on basis of the grade-averages received from all special fields. (The calculations follow the general rule for rounding, from x.51.)

-The student's performance provided on general practices will be evaluated twice, in the 4th and in the 10th week, during the semester and the student will be notified in written form by non-acceptable performance.

-Grades given on the practices, will be the end semester grades, which cannot be improved during the exam period.

-In addition, the supervisor takes the professional attitude and responsibility of the student into account, and his / her effort to earn or maintain professional development, the proper behavior towards the clinical staff, the patients and their relatives. The correct fulfillment of the administrative responsibilities and the appropriate behavior towards of the administrative personnel. -In case the performance is non-acceptable, the student will be warned in written form. From students with two warnings the signature will be denied. In case of not fulfilling the requirements, the student will be warned with the PROFESSIONALISM EVALUATION REPORT FORM (F118 // 1ST). The student who had to be warned twice during the semester because of inadequate performance due to professional reasons or inadequate professional attitudes his / her the signature will be rejected.

The Faculty of Dentistry provides students with 1 white medical coat, 1 suit sluice (trousers and top) and 1 locker key for the duration of the Complex practice. The students undertake to return these items at the end of the practice.

Prerequisites: Complex Dentistry II.

Subject: **PROSTHETIC DENTISTRY III.** Year, Semester: 5th year/1st semester Number of teaching hours:

Lecture: **14** Practical: **10**

1st week: Lecture: Rigid and elastic impression materials, advanced impression materials.	8th week: Lecture: CAD / CAM systems in dentistry.
ľ	9th week:
2nd week: Locture: Working cast and dies	Lecture: TMI disorders.
Lecture. working cast and dies.	10th week:
3rd week:	Lecture: Removing post and core restorations.
Lecture: Polymers in dentistry. Techniques for	44.1
producing dentures made of polymers.	Lecture: Making a final prosthetic plan.
4th week:	
Lecture: Adhesive materials in dentistry.	12th week:
5th week: Lecture: Dental ceramics	Lecture: Design and fabrication of fixed-and- partial dentures combinations.
	13th week:
6th week: Lecture: Biocompatibility and corrosion.	Lecture: Complex and multidisciplinary prosthodontic treatment.
7th week: Lecture: Metal alloys in dentistry.	14th week: Lecture: Advanced technologies and materials

used in prosthetic dentistry.

Requirements

The aim of acquiring the professional content of the subject: Students will learn the practical aspects of prosthetic dentistry.

Brief course programme:

Students will learn the practical aspects of prosthetic dentistry.

Competences:

The student will be able to make a prosthetic treatment plan in more complex cases. Requirements:

Attendance on the lectures is highly recommended but not compulsory. Active participation in the practices is required. Missed practices can be compensated for only with the permission of the Department of Biomaterials and Prosthetic Dentistry. The presence in practices will be recorded. If a student is late or leave early, it is considered as an absence.

Assessment:

End of semester examination.

One self-control test will be held during the semester based upon the topics of lectures, practices and reading materials, at a date announced later. The result of the self-control test will be offered as the grade of the end of semester exam.

The grade of the test will be calculated as the following:

60.01-70%pass (2)70.01-80%satisfactory (3)80.01-90%good (4)90,01-100%excellent (5)

Students who have not achieved an offered grade (less than 60%), or achieved, but have not accepted it, will take an exam in the exam period from the material of the titles attached. Students must indicate the acceptance or rejection of the offered grade in the Neptun system. Students who would like to improve their offered grade in the exam period must reject the offered grade in the Neptun system before applying for an exam.

The exam starts with electronic/tablet entrance test. Students must complete this test answering at least 60% of the questions correctly to continue to the oral exam. If the result of the entrance test is less than 60%, the final exam grade is "fail" (1).

Department of Forensic Medicine

Subject: FORENSIC MEDICINE

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: 14 Practical: 14

ACADEMIC PROGRAM FOR THE 5TH YEAR

1st week:	Practical: Every week's practical topic is the
Lecture: Signs of death	same as the lecture's topic.
Practical: Every week's practical topic is the	
same as the lecture's topic.	10th week:
	Lecture: Suffocation
2nd week:	Practical: Every week's practical topic is the
Lecture: Types of the injuries I.	same as the lecture's topic.
Practical: Every week's practical topic is the	
same as the lecture's topic.	11th week:
1	Lecture: Forensic genetics
3rd week:	Practical: Every week's practical topic is the
Lecture: Practical approach of the signs of	same as the lecture's topic.
death. Block lecture and practice (3-6 week's	The second se
topic on one week) by a forensic dentist	12th week:
Practical: Every week's practical topic is the	Lecture: Forensic toxikology
same as the lecture's tonic	Practical: Every week's practical tonic is the
sume us me recture s topre.	same as the lecture's tonic
7th week:	sume us me recture s topic.
Lecture: Types of the injuries II	13th week.
Practical: Every weak's practical topic is the	Locture: Medical law health insurance
some as the lecture's tonic	componention disability
same as the fecture's topic.	Practical: Every weak's practical topic is the
9th weak	arma as the lecture's topic
olli week:	same as the lecture's topic.
Lecture: Types of the injuries III.	1441 1
Practical: Every week's practical topic is the	14th week:
same as the lecture's topic.	Lecture: Written exam
0/1 1	Self Control Test

9th week: Lecture: Traffic accident

Requirements

Attendance on 80% of the practices. Successful written exam on the last practice.

Department of Neurology

Subject: NEUROLOGY

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: 10 Practical: 10

1st week:

Lecture: Meningeal signs. Examination of cerebrospinal fluid, meningitis, causes of increased cell number and protien content, interpretation of bloody CSF. Infectious diseases of central nervous system.

2nd week:

Lecture: Anatomy and examination of cranial nerves I-XII, I: temporal epilepsy; II: visual field defects, papillaoedema; III-IV-VI: gaze disturbances, diplopia, anisocoria, pathway of pupilla reflex, hemianopic pupillary reaction, cortical blindness.

3rd week:	Tumors of the nervous system.	
Lecture: Anatomy and examination of cranial		
nerves I-XII, V: everything; VII: central and	7th week:	
peripheral facial palsy, ageusia, innervation of	Lecture: Reflexes, -physiological reflexes,	
salivatory glands, herpes zoster geniculi; VIII:	-pathological reflexes, -pyramidal signs	
peripheral and central type of dizziness, tinnitus,	-primitive reflexes. Autoimmune dieases of	
Bell's palsy.	nervous system.	
4th week:	8th week:	
Lecture: Anatomy and examination of cranial	Lecture: Coordination. Trauma of central	
nerves I-XII, IX-X: glossopharyngeus neuralgia,	nervous system.	
dysphagia, dysarthria; XI: torticollis; XII: central		
and peripheral hypoglossus lesion. Bulbar and	9th week:	
pseudobulbar signs. Torticollis.	Lecture: Aphasias (sensory, motor), Gnostic	
	functions, apraxias (anosognosia, dressing	
5th week:	apraxia). Stroke	
Lecture: Motor system, -power -muscle tone		
-involuntory movements. Epilepsy.	10th week:	
	Lecture: Headache, facial pain.	
6th week:		
Lecture: Sensory system, -disturbance of deep sensation -disturbance of superficial sensation.		
Requirements		

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Educational advisor: Dr. Árokszállási Tamás Teaching materials can be reached at neurologia.unideb.hu and elearning.med.unideb.hu.

1. There is one lecture and one practical every week in the first ten weeks of the 1st semester. 2. In the exam period an oral exam has to be taken, which is evaluated by a 5-grade mark. Places for exams are opened every week during the exam period. Students have to register in Neptun for the exam. Without registration the exam cannot be taken. The first exam is the 'A' chance, the second exam is the 'B' chance, both are oral exams. If somebody failed 'A' and 'B' chances, the third possibility is the 'C' chance, which is in front of an exam committee. In this case the student has to fix an appointment with the educational advisor. Teaching materials presented at lectures and seminars are asked at the exams.

If the student wishes to improve the grade, it is possible once in the exam period after registration in the Neptun for a free exam place.

Department of Operative Dentistry and Endodontics

Subject: RESTORATIVE DENTISTRY III. (CARIOLOGY AND ENDODONTICS)

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: 14 Practical: 10

1st week: Lecture: Up-to date preparation techniques: Laser, oscillating instruments, chemical- mechanical caries removal, air abrasion in restorative dentistry	7th week: Lecture: Outcome estimation in endodontics 8th week: Lecture: Written exam
2nd week:	9th week:
Lecture: Dentin-hypersensitivity and treatment options. Erosion. Causes, manifestations in oral	Lecture: Case presentation
cavity, diagnosis making and its therapy	10th week:
	Lecture: Case presentation
3rd week:	
Lecture: Activation methods of root canal	11th week:
irrigants	Lecture: Case presentation
4th week:	12th week:
Lecture: Modern concepts and methods in the course of shaping the root canal	Lecture: Case presentation
1 0	13th week:
5th week:	Lecture: Case presentation
Lecture: Obturation materials - a comparative	
evaluation	14th week:
	Lecture: Case presentation
6th week: Lecture: Pulp-periodontal interrelationship	

Requirements

Course objectives

The aim of the course is to provide students fundamental diagnostic and endodontic knowledge of conservative dentistry, endodontics and their borderlines.

Short description of the course

During the course, the borderline of restorative dentistry and endodontics will be taught in theoretical lectures and special practises.

Examination: I. semester oral exam at the end of the mid semester (ESE_oral exam) Materials for exam preparation: official lecture book, lectures and materials of the special practicals.

Requirements for signing the lecture book:

•During the semester, in accordance with the course requirements there is one written test that takes place during a lecture. The self-control tests cannot be repeated only with an adequate proof in a given time. The result of any missed test conclude to failure (1). The result cannot be improved.

ENDODONTIC CASE PRESENTATION (5th year from 2024/25 academic year)

During the case presentation, the student describes the case(s) of his/her own patient(s) treated in rubber dam isolation, which can be:

- 3 single-rooted teeth with one root canal or,
- 1 tooth with two root canals and 1 tooth with one root canal or,
- 1 molar with three or four root canals.

Presentation requirements:

• Filled signed endodontic form without any missing detail, approved, signed and stamped by the supervisor (a separate endodontic form must be filled out for each tooth)

- Photo of the final coronal restoration(s)
- Evaluable radiological documentation
- Logically built up PowerPoint computer presentation

The mandatory endodontics case study is planned according to previously agreed date and is presented in sequence order.

!!! Missing the presentation of case study or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

• Special practicals:

- The practices start and finish in accordance with the timetable, arriving late is not allowed.
- Students are required to stay at the premises of the practical from the beginning to the end of the class and participate actively in the practical work.
- Absences, in theory, are not allowed.
- In reasoned cases, for certified absences the department ensure make up classes for students on a previously agreed date during the semester.
- A certification is required for any absences which has to be handed to the leader of the practice course.
- The student's theoretical preparedness, practical work and manual skills are evaluated by the teach during the exercises.
 - Missing the special practice or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

Special practice (5th 1st semester): (10) 2 x 5 lessons

Course exemption (reason)

Attendance at the course is not mandatory with valid signature obtained in a previous semester, therefore exemption from attending practices can be requested. The prerequisite for this is that the student needs to submit the request on the appropriate form via https://elearning.med.unideb.hu system at the corresponding course no later than the last working day of the first week of education. Students exempted from attending special practices must also write the test.

Grade formation

The result of the test can impact on the grade of the oral exam (ESE).

Requirements for taking up the subject: Restorative Dentistry II. (Endodontics), Complex Dentistry II.

Department of Oral Medicine

Subject: ORAL MEDICINE

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: 14 Practical: 10 1st week: Lecture: Principles of diagnosis of oral mucosal 9th week: diseases. Developmental varieties of oral Lecture: Orafacial complaints without physically detectable disorders. (burning mouth mucosa. syndrome, subjective xerostomy, dysgeusia), TMJ disorders 2nd week: Lecture: Ulcerative, bullous & vesicular oral disorders. Desquamative gingivitis. 10th week: Lecture: Cardiovascular and respiratory system: 3rd week: oral symptoms Lecture: White and red lesions of oral mucosa. Discolorations of oral mucosa (developmental 11th week: and desease). Lecture: Gastrointestinal tract and renal diseases: oral symptoms 4th week: Lecture: Gingival hyperplasia and benign 12th week: tumours of oral mucosa Lecture: Hematological diseases: oral symptoms and dental care of patients with hemostasis disorders 5th week: Lecture: Precancerous lesions, paraneoplastic lesions, oral malignant tumors. 13th week: Lecture: Endocrinological and immunological diseases: maxillofacial and general symptoms 6th week: Lecture: Disease of salivary glands. 14th week: 7th week: Lecture: Oral symptoms in immundefects

Lecture: Lip and tongue diseases

8th week: Lecture: Written exam

Requirements

The aims and objectives of the course:

1. To be aware of the forms and appearance of oral mucosal disease.

2. To know and understand the relationship with their risk factors, diagnostics, and treatment.

Short description of the course:

1. Physical examination: inspection, palpation. Special examinations used in oral diagnostics (endoscopy, vital staining, citology, biopsies)

- 2. Definitions of precancerous lesion and condition. Responsibilitis of general practitionares.
- 3. Oral cancer screening: basic steps.

4. Developmental varieties of oral mucosa.

5. Inflammatory conditions: stomatitises, cheilitises, glossitises.

6. Ulcerative lesions: infectious, traumatic, immunmediated and their differentiation.

7. White lesions of oral mucosa: infectious, immunological and traumatic of origin. Their

differential diagnostics. Practice: Patient examination and basic treatments discussion

Compulsory reading:

The content of lectures and the studies handed out by the lecturer

Recommended books: Any, dealing specifically with oral medicine!

Assessment:

ESE

Requirements:

Lectures: As given in the timetable (time and place)

Practices: In the building of Faculty of Dentistry (Deptartment of Periodontology.)

Active participation on the practices

With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 20%, even if it is certificated.

The Practical work will be evaluated at the end of each practice separately, as 'accepted' or 'not-accepted'.

The number of accepted practices must be above 80% of practices.

Missed practise is not-accepted.

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week.

Conditions of signing the index:

Active participation in the practices (there is no possibility to compensate the missed practices). Students have to fulfil the minimum practical requirements of the subject.

The minimum practical requirements of the subject will be handed out on the first week of the semester.

Calculation of the practical grade:

The test, written during the semester should be passed. The result of the failed test must be repeated once during the semester.

The appointment of the remedial will be sent out by a Neptun message. In case of failing remedial test, the semester is not accepted, the signature of the index will be refused.

Written test will be assessed as follows:

0-44% fail (not accepted) 45% ≤_accepted
Department of Oral and Maxillofacial Surgery

Subject: ORAL SURGERY III.

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: 14 Practical: 10

1st week:	8th week:
Lecture: Premalignant conditions, precancers	Lecture: Differentical diagnosis of swellings of the neck
2nd week:	
Lecture: Malignant tumours in general	9th week: Lecture: Implantology I.
3rd week:	
Lecture: Lip cancer and its treatment.	10th week:
Cancer of the floor of the mouth and the tongue	Lecture: Implantology II.
4th week:	11th week:
Lecture: Cancer of the bucca, the gingiva and the maxillary sinus	Lecture: Preprosthetic surgery
	12th week:
5th week:	Lecture: Preimplant surgery
Lecture: Tumour metastases. RND	F
,	13th week:
6th week:	Lecture: General anaesthesia in the dental
Lecture: Complex therapy of head and neck	practice
cancers.	1
Reconstructive surgery of the head and neck	14th week:
region	Lecture: Consultation
7th week:	
Lecture: Radiotherapy and chemotherapy of malignant tumors, intraoral side effects	

Requirements

Aims of the course:

During the course students learn about the processes leading to the development of the most common malignancy of oral mucosa, the squamous cell carcinoma, the premalignant oral mucosal disorders and conditions, and the role of the dentist in their treatment. We present the most common localizations of oral tumors, their complex treatment and their dental aspects. During the semester, students become familiar with differential diagnostic problems related to malignant tumors and also acquire basic implantological knowledge.

Course exemption:

Students who have obtained signature in a previous semester must participate in the mandatory lectures and practices. There is no exemption from attending the compulsory lectures and special practices.

Course requirements and conditions for obtaining signature:

Active participation in the designated lectures is mandatory. Arriving late for the lectures is not

accepted. Late students are not allowed to join the lectures. Students must participate in the lectures from the beginning to the end thereof. Only one of the compulsory lectures may be missed. The absence must be certified in a credible way **within three working days**. Students who have more than one uncertified absence from the lectures will not get signature.

Active participation in the special practices is mandatory. Arriving late for the practices is not accepted. Late students are not allowed to join the practices. Students must participate in the practices from the beginning to the end thereof. Any absence from the special practice must be certified in a credible way **within three working days**. Certification must be showed in the Educational Office in person. The missed practice must be made up. Making up for the missed practice is subject to a credible certification and the prior permission of the head of department exclusively during the study term and with a group of the same program and same year. It is necessary to discuss the date of the make-up practice with the officer of the Educational Office. Students should join to the group of the smallest number of students with the permission of the practice leader of the chosen group.

Mandatory lectures:

Premalignant conditions, precancers

Lip cancer and its treatment. Cancer of the floor of the mouth and the tongue

Differential diagnosis of swellings of the neck

Preprosthetic surgery

Conditions for obtaining signature:

Only one of the designated lectures may be missed. The absence must be certified in a credible way within three working days. Absence from the practice must be certified in a credible way within three working days. Missed practices must be made up according the rules. Students who fail to make up the missed practice or have more than one uncertified absence from the compulsory lectures will not get signature.

Exam: Oral end semester exam

The exam covers the presentation and compulsory readings of the semester, and questions from Oral Surgery Propedeutics can be expected too. Not knowing the parts of the handouts provided by the Department that are emphasized by exclamation mark results in a failed exam.

Compulsory readings:

J. R. Hupp, M. R. Tucker: Contemporary oral and maxillofacial surgery ISBN-13: 978-0323552219, Elsevier, 2018

R.A. Cawson: Essentials of Oral Pathology and Oral Medicine, Churchill Livingstone 1998., ISBN: 0443053480

Recommended Books:

P.W. Booth, S.A. Schendel, J.E. Hausamen: Maxillofacial Surgery Churchill Livingstone 1999., ISBN: 0443058539

Szabó Gy.: Oral and Maxillofacial Surgery, Semmelweiss Publishing House, Budapest, 2004., ISBN: 963-9214-15-9

Prerequisites: Oral Surgery II.

Department of Pediatric and Preventive Dentistry

Subject: **PEDIATRIC DENTISTRY I.**

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: 14 Practical: 15

1st week:	8th week:
Lecture: Pain control, topical and local	Lecture: Traumatic injuries to the teeth and
anesthesia, minor oral surgery in childhood	supporting tissues I. (primary dentition)
2nd week:	9th week:
Lecture: Etiology of dental caries and its characteristics in childhood	Lecture: Traumatic injuries to the teeth and supporting tissues II. (permanent dention)
3rd week:	10th week:
Lecture: Caries in the primary dentition, diagnosis, treatment	Lecture: Common structural disturbances of the teeth
4th week:	11th week:
Lecture: Caries and consecutive diseases,	Lecture: Periodontology in pediatric dentistry
diagnosis and treatment	12th week:
5th week:	Lecture: Oral manifestation of infective diseases
Lecture: Endodontic treatment in childhood.	13th week:
The treatment of the immature permanent teeth	Lecture: Oral manifestation of systemic diseases
6th week:Lecture: Prosthetic dentistry for children7th week:	14th week: Lecture: Test (written examination)
Lecture: Common growth and developmental anomalies of the teeth	

Requirements

Prerequisites of the course

Orthodontics II, Pediatric Dentistry Propedeutics

The aims and objectives of this course:

The goal of the course is to teach knowledge and skills in all subjects relating to pediatric dentistry: behavioral aspects relevant to the treatment encounter with the child, such as emotional and behavioral development, and behavioral principles in treating children; dentition development; and total treatments provided to children, including prevention of oral and dental diseases, various restorative treatments, treating trauma to the teeth and dental inflammations.

Short description of the course:

The students during the practical lessons will practice: 1. The methods of examination, instrumentation, treatment planning

- 2. Describe the normal anatomic structures of oral cavity of the infant
- 3. Discuss and recognize common developmental disturbances of the teeth
- 4. Classify common oral lesions and infections by clinical features
- 5. Discuss etiological factors influencing the formation of dental caries in children
- 6. Develop an individualized oral health care program for the child patient
- 7. Identify and distinguish morphologic differences in the primary teeth

8. Do the specific cavity preparation indicated in primary posterior teeth, dependent on the

- restorative material used
- 9. Extract primary tooth
- 10. Use the several clinical procedures available for pulp care
- 11. Carry out successful pulpectomy
- 12. Recognize and treat dental injuries
- 13. Fabricate a simple splinting device
- 14. Fabricate a space maintainer
- 15. Restore an anterior primary and permanent tooth with composite restorative material
- 16. Restore a fractured incisor with composite material
- 17. Carry out a successful apexification
- 18. To seal fissures
- 19. Use preventive methods

Compulsory books:

Welbury RR, Duggal MS, Hosey M-T: Paediatric Dentistry. 4th ed. Oxford University Press, 2012. ISBN:0-19 8565836

Recommended books:

Cameron A, Widmer R: Handbook of Pediatric Dentistry. 4th ed. Mosby Elsevier, 2013. ISBN:978 0 72343452 8.

Requirements:

Attendance to lectures is strongly recommended. All material covered in lectures is an integral part of the subject and therefore included in the self-control tests and the final exam. Some new concepts and ideas are discussed in the lectures only and not present in the handout or the lecture book. Active participation on the practices is obligatory. With acceptable written certificate students may miss 1 practical lesson. The missed practical can be made up with another group after obtaining the permission from the tutor of the other group.

The practices start and finish in accordance with the timetable, arriving late is not allowed. A delay of more than ten minutes shall be deemed to be an absence! In this case the missed class cannot be made up for.

During the semester we evaluate the practical work and the theoretical knowledge with grades. The semester ends with a written examination (test). The result of the test must be at least 60% to pass.

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week.

Conditions of signing of the index:

- students must attend the practices (all practical tasks must be completed)
- students must sit for the end-semester test

Assessment: AW5 grade

Calculation of the grade:

If the result of the test is under 60% the student must take an end-semester (oral) exam as a ,B' chance.

The practical mark is calculated on basis of the average of the practical grades (1/4) and the test result (3/4).

60-69.9%pass (2)70-79.9%satisfactory (3)80-89.9%good (4)from 90%excellent (5)

Department of Pediatrics

Subject: **PEDIATRICS** Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: **14** Practical: **14**

 1st week: Lecture: The field of pediatrics, growth and development. Lecturer: Csongor Kiss M.D., PhD., D.Sc. Practical: Infrastructure of the Department of Pediatrics, pediatric history taking. Csaba Erdész M.D., Ágnes Bodnár M.D., Kinga Szabó M.D., Ildikó Dán M.D., Andrea Török-Katona M.D. 	4th week: Lecture: Disorders of dentition, tongue anomalies. Buccal and tonsillopharyngeal diseases. Lecturer: Csongor Kiss M.D., PhD., D.Sc. Practical: Infants Department - Bathing, clothing and feeding of infants. Katalin Szakszon M.D., Ph.D., Erika Bálega M.D., Boglárka Fehér M.D., Kinga Szabó M.D., Gergő Nagy M.D.
Lecture: Infant feeding, feeding disorders, vomiting in infants. Lecturer: Éva Juhász M.D. Practical: Perinatal Intensive care Unit Petra Varga M.D., Erzsébet Lakatos M.D., Melinda Kiss-Vojtkó M.D., Ágnes Bodnár M.D., Emese Csenge Kiss M.D.	5th week: Lecture: Upper respiratory tract diseases. Lecturer: Ágnes Papp M.D. Practical: Pediatric Surgery I. Ágnes Magyar M.D., Péter Juhász M.D., Vivien Stercel M.D., Gábor Varga M.D., Ádám Radványi M.D.
 3rd week: Lecture: Fluid and electolyte homeostasis. Metabolic disorders. Lecturer: Tamás Kovács M.D. Practical: Infants Department - Examination of patients, prophylaxis and treatment of rickets. Katalin Szakszon M.D., Ph.D., Erika Bálega M.D., Boglárka Fehér M.D., Fanni Rüdiger M.D. 	6th week: Lecture: Lower respiratory tract diseases. Lecturer: Zsolt Bene M.D., Ph.D Practical: Pediatric Surgery II. Ágnes Magyar M.D., Péter Juhász M.D., Vivien Stercel M.D., Gábor Varga M.D., Ádám Radványi M.D.

CHAPTER 20

7th week: Lecture: Neuroinfections. Seizures in children. Lecturer: Mónika Bessenyei M.D. Practical: Department of Cardiology - Examination of patients, assessment of EKG Balázs Kovács-Pászthy M.D., Lilla Illésy-Macsi M.D., Anita Szücs M.D.,	the oral opening, oral cavity and the pharyngeal region. Lecturer: Csongor Kiss M.D., Ph.D., D.Sc. Practical: Department of Infectology - Examination of patients Zsolt Reiger M.D., Bence Zonda M.D., Fanni Rüdiger M.D., Patrícia Kerek M.D.
 8th week: Lecture: Contagious infections diseases in children. Pediatric AIDS. Lecturer: Éva Nemes M.D., Ph.D. Practical: Department of Hematology - Transfusion István Szegedi M.D., Ph.D., Zsuzsanna Gaál M.D., Ph.D, Miklós Petrás M.D., Ph.D., Krisztina Kovács M.D., Zsanett Tári M.D. 	12th week: Lecture: Disorders of the circulation. Lecturer: Gábor Mogyorósy M.D., Ph.D. Practical: Department of Pediatric Internal Diseases - Examination of patients with gastorintestinal and endocrine disorders. Erzsébet Lakatos M.D., Mariann Márki M.D., Lilla Illésy-Macsi M.D., Kinga Szabó M.D., Renáta Molnár M.D.
 9th week: Lecture: Gastrointestinal disorders. Lecturer: Ilma Korponay-Szabó M.D., Ph.D., D.Sc. Practical: Department of Hematology - Examination of patients. István Szegedi M.D., Ph.D., Miklós Petrás M.D., Ph.D., Zsuzsanna Gaál M.D., Ph.D. 10th week: 	 13th week: Lecture: Disorders of the kidneys and the urinary tract. Lecturer: Tamás Szabó Md.D., Ph.D. Practical: Department of Pulmonology - Examination of patients, assessment of chest X-ray pictures. Zsolt Bene M.D., Ph.D., Gergely Balázs M.D., Ph.D., Csaba Erdész M.D., Anita Szücs M.D., Szabina Révész M.D.
Lecture: Disorders of the hematopoietic system, solid tumors of the head and neck region. Lecturer: István Szegedi M.D., Ph.D. Practical: Department of Pediatric Internal Disorders - Examination of patients with nephrologic and neurologic disorders. István Szegedi M.D.,Ph.D., Andrea Berkes M.D, Ph.D., Anita Grabicza M.D., Mariann Márki M.D., Emese Csenge Kiss M.D.	 14th week: Lecture: Diseases of salivary glands, dysphagia. Impact of oral health on general health Lecturer: Csongor Kiss M.D., PhD., D.Sc. Practical: Emergency care Unit - Examination of patients, assessment of Astrup test Éva Juhász M.D., Anita Vadász M.D., Zsanett Tári M.D., Anett Agócs M.D.

11th week:

Lecture: Disorders of the soft and hard tissues of

Requirements

Requirements for signing the lecture book: Attendance on practices are mandatory. In case of more than one absence, the signature of the lecture book will be refused. In case of documented serious disease or other reasonable cause, it can be discussed with the senior lecturer in charge for the dental English curriculum. Absences should be made up, compensation will be arranges individually by the senior tutors of the groups. Development of proper skills in pediatric patient's examinations, assessment of the clinical science of pediatric diseases involving the head and neck region with a special emphasis on the oral cavity is expected by the senior tutors on the last (15th

week's) practice. Requirements of the examination: Obtaining signature of the lecture book. Prearranged exam appointment strictly within the exam period as given by the Department of Education (to be obtained from the secretary of the Department, students are kindly requested to come to do the exam in a group of 5-20 students in an exam day; changes in the exam schedule should be made at least 24 hours - 1 working day - prior to the scheduled exam). Type of examination: Colloquium type end-semester exam (ESE), two titles.

Department of Psychiatry

Subject: **PSYCHIATRY**

Year, Semester: 5th year/1st semester Number of teaching hours: Lecture: 5 Practical: 5

1st week: Lecture: Examination of a psychiatric patient Psychopathology. Practical: Classification of illnesses.	4th week: Lecture: Organic psychosyndromes. Border territory of dentistry and psychiatry.
2nd week: Lecture: Anxiety disorders. Practical: Affective illnesses.	5th week: Lecture: Schizophrenia. Pharmacotherapy. Practical: Border territory of dentistry and psychiatry.
3rd week: Lecture: Alcohol and drug.	

Requirements

Psychiatric titles of first term:

1. Basic points in psychopathology. 2. Classification in psychiatry. Nosological systems. 3. The psychiatric interview. 4. Alcoholismus chronicus. 5. Anxiety disorders. 6. Affective illnesses. 7. Schizophrenia. 8. Organic psychosyndromes. 9. Questions from the border territory of dentistry and psychiatry. 10. Psychotherapy and psychopharmacotherapy.

Faculty of Dentistry

Subject: **THESIS CONSULTATION III.** Year, Semester: 5th year/1st semester Number of teaching hours: Seminar: **75**

Department of Biomaterials and Prosthetic Dentistry

Subject: COMPLEX DENTISTRY IV.

Year, Semester: 5th year/2nd semester Number of teaching hours: Lecture: 5 Practical: 240

1st week:	3rd week:
Lecture: Definition of interdisciplinary term and its importance	Lecture: Dental and surgical treatment of patients with oncologic and oncohematologic
Practical: 1-15 week: Complex dental treatment: restorative, periodontial and extraction procedures according to patients' needs. The	diseases 4th week:
minimum requirements declared by the departments to be fulfilled. General nursering procedures during treatments	Lecture: Dental and surgical treatment of patients with neurological diseases, the special aspects of treatment
2nd week:	5th week:
Lecture: Dental care aspects in the case of patients with organ failure in the peri- and posttransplant periods	Lecture: Dental treatment of patients with autoimmune diseases, follow-up

Requirements

Assessment:

AW5. Continuous monitoring of the knowledge during practices. The grade is given on the basis of the student's term-time practical performance and this is considered as the final grade of the end semester exam.

The grade cannot be improved during the exam period

Signature conditions:

-Completion of the required minimums.

-Active participation on the practices (there is no possibility to compensate the missed practices). -The practices begin/end according to the timetable, delay is not permitted. Attendance can only be accepted if the student is present at the venue from the beginning until the end of the practice. -With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 2 patient treatment and 2 assistance practice altogether. All missed practices need to be certified.

-All procedures amongst the practical work will be evaluated with grades. The final grade is calculated on basis of the grade-averages received from all special fields. (The calculations follow the general rule for rounding, from x.51.)

-The student's performance provided on general practices will be evaluated twice, in the 4th and in the 10th week, during the semester and the student will be notified in written form by non-acceptable performance.

-Grades given on the practices, will be the end semester grades, which cannot be improved during the exam period.

-In addition, the supervisor takes the professional attitude and responsibility of the student into account, and his / her effort to earn or maintain professional development, the proper behavior towards the clinical staff, the patients and their relatives. The correct fulfillment of the

administrative responsibilities and the appropriate behavior towards of the administrative personnel. -In case the performance is non-acceptable, the student will be warned in written form. From students with two warnings the signature will be denied. In case of not fulfilling the requirements, the student will be warned with the PROFESSIONALISM EVALUATION REPORT FORM (F118 // 1ST). The student who had to be warned twice during the semester because of inadequate performance due to professional reasons or inadequate professional attitudes his / her the signature will be rejected.

The Faculty of Dentistry provides students with 1 white medical coat, 1 suit sluice (trousers and top) and 1 locker key for the duration of the Complex practice. The students undertake to return these items at the end of the practice.

Presrequisites: Complex Dentistry III.

Subject: PROSTHETIC DENTISTRY IV.

Year, Semester: 5th year/2nd semester Number of teaching hours: Lecture: **12** Practical: **10**

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resentation

Requirements

Conditions of signature in the lecture book:

-Compulsory lectures and practices:

Students are required to attend the compulsory lectures indicated in the syllabus. Participation in the practices is also compulsory. Missed practices can be compensated for only with the permission of the Department of Biomaterials and Prosthetic Dentistry. The presence in practices and compulsory lectures will be recorded. If a student is late or leave early, it is considered as an absence.

-Case presentation:

Students are required to present their case presentation at the time of the lectures according to the timetable announced at the beginning of the semester. The signature in the lecture book will be refused if the student fails to give a case presentation during the semester. The case report should be presented in the form of a PowerPoint presentation. Sample slides are available at: https://elearning.med.unideb.hu/

Assessment:

Final exam. The complex and special practical grades may be considered at the final exam grade.

Department of Operative Dentistry and Endodontics Subject: **RESTORATIVE DENTISTRY IV. (CARIOLOGY AND ENDODONTICS)**

Year, Semester: 5th year/2nd semester Number of teaching hours: Lecture: **12** Practical: **10**

1st week: Lecture: Microscop and magnifiers. Minimal invasive non preparation treatment options. Composite repair	endodontics (wound healing and repair following endodontic therapy). Focal infection theory 7th week:
1 1	Lecture: Written exam
2nd week:	
Lecture: Esthetic direct restorations I. (Diastema	8th week:
closure, form corrections)	Lecture: Case presentation
3rd week:	9th week:
Lecture: Esthetis direct restorations II. (Cavity class IV. direct composite veneer)	Lecture: Case presentation
1 /	10th week:
4th week:	Lecture: Case presentation
Lecture: Root resorption (classification and	-
treatment)	11th week:
	Lecture: Case presentation
5th week:	
Lecture: Treatment of fractured teeth (crown and root fractures)	12th week: Lecture: Case presentation
6th week:	
Lecture: The importance of follow-up in	

Requirements

Course objectives The aim of the course is to provide students fundamental diagnostic and endodontic knowledge of

conservative dentistry, endodontics and their borderlines.

Short description of the course

During the course, the borderline of restorative dentistry and endodontics will be taught in theoretical lectures and special practises.

Examination: At the end of the 1st semester the students are required to take the End of Semester Examination (ESE-oral exam), at the end of the 2nd semester the students are required to take the and oral Final Examination (FE).

Materials for exam preparation: official lecture book, lectures and materials of the special practicals.

Requirements for signing the lecture book:

•During the semester, in accordance with the course requirements there is one written test that takes place during a lecture. The self-control tests cannot be repeated only with an adequate proof in a given time. The result of any missed test conclude to failure (1). The result cannot be improved.

ENDODONTIC CASE PRESENTATION (5th year from 2024/25 academic year)

During the case presentation, the student describes the case(s) of his/her own patient(s) treated in rubber dam isolation, which can be:

- 3 single-rooted teeth with one root canal or,
- 1 tooth with two root canals and 1 tooth with one root canal or,
- 1 molar with three or four root canals.

Presentation requirements:

• Filled signed endodontic form without any missing detail, approved, signed and stamped by the supervisor (a separate endodontic form must be filled out for each tooth)

- Photo of the final coronal restoration(s)
- Evaluable radiological documentation
- Logically built up PowerPoint computer presentation

The mandatory endodontics case study is planned according to previously agreed date and is presented in sequence order.

!!! Missing the presentation of case study or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

- Special practicals:
 - The practices start and finish in accordance with the timetable, arriving late is not allowed.
 - Students are required to stay at the premises of the practical from the beginning to the end of the class and participate actively in the practical work.
 - Absences, in theory, are not allowed.
 - In reasoned cases, for certified absences the department ensure make up classes for students on a previously agreed date during the semester.
 - A certification is required for any absences which has to be handed to the leader of the practice course.
 - The student's theoretical preparedness, practical work and manual skills are evaluated by the teach during the exercises.
 - Missing the special practice or missing any part of the above mentioned listed requirements, results in the refusal of signing the lecture book.

Special practice (5th 2nd semester): (10) 2 x 5 lessons

Course exemption (reason)

Attendance at the course is not mandatory with valid signature obtained in a previous semester, therefore exemption from attending practices can be requested. The prerequisite for this is that the student needs to submit the request on the appropriate form via https://elearning.med.unideb.hu system at the corresponding course no later than the last working day of the first week of education. Students exempted from attending special practices must also write the test.

Grade formation

The result of the test can impact on the grade of the oral exam (FE).

Requirements for taking up the subject: Restorative Dentistry III. (Cariology and Endodontics), Complex Dentistry III.

Department of Oral and Maxillofacial Surgery

Subject: ORAL SURGERY IV.

Year, Semester: 5th year/2nd semester Number of teaching hours: Lecture: **12** Practical: **10**

1st week:	7th week:
Lecture: Mechanism of acute and chronic pain	Lecture: Antibiotic treatment and endocarditis
2nd week:	prophylaxis in dentistry and orar surgery
Lecture: Differential diagnosis of facial pain and trismus	8th week: Lecture: Radiotherapy and medication induced osteonecrosis of the jaws
3rd week:	
Lecture: Pharmacological analgesia in oral surgical practice	9th week: Lecture: Dental and oral surgical treatment of patients with hemostatic disorders
4th week:	r
Lecture: Local anesthesia in the dental practice, allergy and faint	10th week: Lecture: Complications of tooth extraction, iatrogenic injuries and their treatment
5th week:	
Lecture: Dental focal diseases	11th week: Lecture: Dentoalveolar trauma
6th week:	
Lecture: Inflammations of dental origin and their treatment in the dental office	12th week: Lecture: Final consultation

Requirements

Course objectives:

The course organizes the basic dental treatments and knowledge for the practicing dentist. Basic oral surgical procedures will be discussed in a practice oriented way. with much greater detail than previously. The course takes into account the aspects of medication, the effects of various comorbidities and adverse effects of their treatment on the jaws and minor surgical interventions, and the most common possible iatrogenic harms in general dental practice. Knowing all these is essential for a safe dental practice.

Course exemption:

Students who have obtained signature in a previous semester must participate in the mandatory lectures and practices. There is no exemption from attending the compulsory lectures and special practices.

Course requirements and conditions for obtaining signature:

Active participation in the designated lectures is mandatory. Arriving late for the lectures is not accepted. Late students are not allowed to join the lectures. Students must participate in the lectures from the beginning to the end thereof. Only one of the compulsory lectures may be missed. The absence must be certified in a credible way within three working days. Students who have more than one uncertified absence from the lectures will not get signature.

Active participation in the special practices is mandatory. Arriving late for the practices is not accepted. Late students are not allowed to join the practices. Students must participate in the practices from the beginning to the end thereof. Any absence from the special practice must be certified in a credible way **within three working days**. Certification must be showed in the Educational Office in person. The missed practice must be made up. Making up for the missed practice is subject to a credible certification and the prior permission of the head of department exclusively during the study term and with a group of the same program and same year. It is necessary to discuss the date of the make-up practice with the officer of the Educational Office. Students should join to the group of the smallest number of students with the permission of the practice leader of the chosen group.

Mandatory lectures:

Pharmacological analgesia in oral surgical practice Local anesthesia in the dental practice, allergy and faint Dental focal disease

Conditions for obtaining signature: Only one of the designated lectures may be missed. The absence must be certified in a credible way within three working days. Absence from the practice must be certified in a credible way within three working days. Missed practices must be made up according the rules. Students who fail to make up the missed practice or have more than one uncertified absence from the compulsory lectures will not get signature.

Exam: Final exam

The exam covers the materials of Oral Surgery I, II, III and IV that means the lectures and the compulsory readings. Students can expect questions from Oral Surgery Propedeutics as well. Following a failed exam, a "B" or "C" chance exam may be taken at the earliest on the third day after the failed exam.

Compulsory reading: James Hupp, Myron Tucker, Edward Ellis: Contemporary Oral and Maxillofacial Surgery Mosby, 7th Edition, ISBN-13: 978-0323552219

Recommended books:

Szabó Gy.: Oral and Maxillofacial Surgery, Semmelweis Publishing House, Budapest, 2001, ISBN: 963-9214-15-9
R.A. Cawson: Essentials or Oral Pathology and Oral Medicine, Churchill Livingstone 1998., ISBN: 0443053480
P.W. Booth, S.A. Schendel, J.E. Hausamen: Maxillofacial Surgery, Churchill Livingstone 1999., ISBN: 0443058539
Prerequisite: Oral Surgery III

Department of Pediatric and Preventive Dentistry

Subject: PEDIATRIC DENTISTRY II.		
Year, Semester: 5th year/2nd semester		
Number of teaching hours:		
Lecture: 12		
Practical: 15		
1st week:	7th week:	
Lecture: Oral syndromes in childhood.	Lecture: Children with special care and need	
2nd week:	8th week:	
Lecture: Differential diagnosis of oral mucosal lesions.	Lecture: Child abuse and neglect.	
	9th week:	
3rd week:	Lecture: Orthodontic pediatric interface.	
Lecture: Pharmacology in pediatric dentistry.	-	
	10th week:	
4th week:	Lecture: Minimal intervention dentistry.	
Lecture: The importance of age groupsin		
preventive and pediatric dentistry.	11th week:	
	Lecture: Consultation.	
5th week:		
Lecture: Dental fear and anxiety.	12th week:	
,	Lecture: Self-control test.	
6th week:		
Lecture: Behavior management, conscious sedation, general anesthesia.		
Paquiromonts		

Requirements

The aims and objectives of this course:

The goal of the course is to provide the students with a theoretical knowledge and manual skills to treat child patients, to perform dental prevention, give first aid and refer special cases to specialist.

Short description of the course:

Topics of the practices:

-Know the methods of examination, instrumentation, treatment planning. Describe the normal 302

anatomic structures of oral cavity of the infant.

-Discuss and recognize common developmental disturbances of the teeth. Classify common oral lesions and infections by clinical features.

-Do the specific cavity preparation indicated in primary posterior teeth, depending on the restorative material used. Extract primary tooth

-Discuss etiological factors influencing the formation of dental caries in children. Develop an individualized oral health care program for the child patient.

-Do step by step amalgam filling in posterior primary and permanent teeth. Identify and distinguish morphologic differences in the primary teeth.

-Recognize and treat dental injuries. Fabricate a simple splinting device

-Fabricate a space maintainer

-Restore an anterior primary and permanent tooth with composite restorative material

-Restore a fractured incisor with composite crown.

-Use the several clinical procedures available for pulp care. Carry out successful pulpectomy.

-Carry out a successful apexification

-Seal fissures and use preventive methods

Compulsory reading:

Welbury R, Duggal MS, Hosey MT: Paediatric dentistry (3rd ed.) Oxford University Press, 2005

Assessment:

Final Exam

Requirements:

Attendance to lectures is strongly recommended. All material covered in lectures is an integral part of the subject and therefore included in the self-control tests and the final exam. Some new concepts and ideas are discussed in the lectures only and not present in the handout or the lecture book. Active participation on the practices is obligatory. With acceptable written certificate students may miss 1 practical lesson. The missed practical can be made up with another group after obtaining the permission from the tutor of the other group.

The practices start and finish in accordance with the timetable, arriving late is not allowed. A delay of more than ten minutes shall be deemed to be an absence! In this case the missed class cannot be made up for.

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested.

Conditions of signing the index:

-Active participation in the practices

Calculation of the grade:

The final exam consists of a written and an oral part for everyone. The oral exam can be taken only if the student collects at least 65% in the written part. If the oral exam is unsuccessful, but the written part was accepted, the written part must not be repeated prior to the next oral exam.

Prerequisites of taking the subject:

Pediatric Dentistry I.

Department of Periodontology

Subject: PERIODONTOLOGY III.

Year, Semester: 5th year/2nd semester Number of teaching hours: Lecture: **12** Practical: **10**

1st week: Lecture: Introductory lecture. presentation and analysis.

2nd week: Lecture: 2nd - 12th week topic: Case

Requirements

Prerequisites of taking the subject: Periodontology II, Oral medicine

The aims and objectives of this course:

The aim of case presentations is to know all details and associations concerning the patients.

Short description of the course:

Each student has to present the previous medical history and the results of physical examination, x-ray one of his/her own patient/s.

Students must establish a detailed diagnosis. Questions and therapeutical alternatives are also discussed.

List of the names presenting the cases will be announced on the information board during the first week.

Requirements:

If the required cases are not presented during the lectures, the signature of the index will be refused.

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested.

Conditions of signature in the index:

-Active participation on the practices (there is no possibility to compensate the missed practices). -With acceptable certificate students may miss practices, but the ratio of missed practices cannot exceed 20%, even it is certificated.

-The practical work will be evaluated at the end of each practice separately, as 'accepted' or 'not-accepted'

-The number of accepted practices must be above 50% of practices

-Missed practise is not-accepted

-Students have to fulfil the minimum practical requirements of the subject

-The minimum practical requirements of the subject will be handed out on the first week of the semester

Assessment: Final exam

Compulsory reading:

Carranza's Clinical Periodontology 12. Ed., Elsevier ISBN:9780323227995 T. G. Wilson, K.S. Kornman: Fundamentals of Periodontics, 2nd Ed. Quintessence Books 2003., ISBN: 0-86715-405-5

Recommended Books:

Lindhe-Karring-Lang: Clinical Periodontology and Implant Dentistry (2 volumes) Wiley-Blackwell 2008. 5th Ed. ISBN: 978-1-4051-6099-5 Rateitschak, K. H. ed.: Periodontology, 2nd Ed. Thieme, Stuttgart, 1989.

Faculty of Dentistry

Subject: **THESIS CONSULTATION IV.** Year, Semester: 5th year/2nd semester Number of teaching hours: Seminar: **75**

CHAPTER 21 REQUIRED ELECTIVE COURSES

DEENK Life and Natural Sciences Library

Subject: LIBRARY SYSTEM

Year, Semester: 1st year/1st semester Number of teaching hours: Seminar: 10

1st week: Practical: Introduction to the Library and library use: -Traditional services (registration, rules of library usage, loans, reading room, computer lab).	3rd week: Practical: Databases: -Medline. -Impact Factors.
-Electronic services (the Library's home page, online catalogues).	4th week: Practical: Databases
2nd week: Practical: Electronic Information Resources: -Electronic journals. -Link collections.	5th week: Practical: Test

Requirements

The aim of the course:

The aim of the course is to equip students with the skills and knowledge necessary to effectively find, evaluate, and use information. Identifying the type and scope of information required for various tasks and research. Effective Searching Strategies:

Learning how to use different search tools and databases. Developing advanced search techniques, such as using keywords, Boolean operators, and filters. Critical Evaluation of Information: Assessing the credibility, reliability, and bias of information resources.

Distinguishing between different types of sources (e.g., scholarly vs. popular, primary vs. secondary). Ethical Use of Information: Understanding issues related to plagiarism and intellectual property. This course aim to foster critical thinking and empower students to become independent learners in an information-rich society.

Department of Biomaterials and Prosthetic Dentistry

Subject: CONE BEAM CT IN PROSTHETIC DENTISTRY

Year, Semester: 5th year/2nd semester Number of teaching hours: Seminar: **12**

Subject: ESTHETIC DENTISTRY

Year, Semester: 5th year/1st semester Number of teaching hours: Seminar: 14

1st week: Seminar: Introduction to Esthetics Morphopsychology and Facial Esthetics.	8th week: Seminar: TMetal-Ceramic and All-Ceramic Crows and Bridges.
2nd week: Seminar: Esthetic Smile	9th week: Seminar: Periodontal Esthetic Surgery.
3rd week: Seminar: Landmarks and Proportions of the Face. Treatment planning	10th week: Seminar: Oral and Maxillofacial Esthetic Surgery.
4th week: Seminar: Documentation in Esthetic Dentistry	11th week: Seminar: Tooth Color Science, Tooth Color Analysis, Bleaching Methods.
5th week: Seminar: Esthetics and its Relationship to Function I.	12th week: Seminar: All-Ceramic Inlays and Onlays.
6th week: Seminar: Esthetics and its Relationship to Function II.	13th week: Seminar: Ceramic Veneers.
7th week: Seminar: Morphologic Changes During a Lifetime	Seminar: Esthetics in Implantology

Requirements

The required minimum number of attendants is 10.

Conditions of signature in the lecture book:

Five grade (AW5) practical grade evaluation. The final AW5 marks are decided according to the marks given during the semester. At least 1 written or oral self-control test will be held during the semester. Any self-control test with a failed (1) result can be repeated once during the semester, in a given time. If the student fails to improve the result, the final AW5 grade is "failed" (1), and the grade must be improved during the examination period, as a "B" or "C" chance.

Assessment: AW5

Subject: HISTORY OF DENTISTRY, PROSTHETIC DENTISTRY COMPULSORY ELECTIVE I.

Year, Semester: 2nd year/1st semester Number of teaching hours: Lecture: **14**

1st week: Lecture: Introduction to the history of dentistry.	8th week: Lecture: High and late middle ages in Europe.
2nd week:	9th week:
Lecture: The ancient Orient. Egypt, Mesopotamia, Palestine and Syria. India.	Lecture: Awakening of natural sciences.
	10th week:
3rd week:	Lecture: The 18th century.
Lecture: The far east: China, Japan.	
	11th week:
4th week:	Lecture: Dentistry in the industrial ages.
Lecture: Pre-Columbian America: Aztec, Maya, Inca culture.	Prosthetics.
	12th week:
5th week:	Lecture: Conservative dentistry. Self-control test
Lecture: Greco-Roman medicine.	
	13th week:
6th week:	Lecture: Dental surgery. Orthodontics.
Lecture: Aftermath of antiquity in east and west.	
	14th week:
7th week:	Lecture: Research and teaching.
Lecture: The world of Islam.	

Requirements

The required minimum number of attendants is 10. Students registered for the course will be informed through the Neptun system regarding date and place of the first seminar.

Conditions of signature in the lecture book: Active participation in the practices (there is no possibility to compensate for missed practices). All absences must be certified.

Assessment: Five grade (AW5) practical grade evaluation

Students should submit an essay through the Department's online exam interface by the given deadline. If the student does not upload the essay by the given deadline, the AW5 will be "fail" (1) and the student must retake the subject. The theme of the essay will be sent through the Neptun system to the students. The signature in the lecture book will be rejected for students, whose essays show significant similarities. The "fail"(1) mark (except caused by similarities) can be improved during the exam period, as a "B" or "C" chance exam. The "B" or "C" chance exams are electronic tablet tests.

Subject: IMPLANTOLOGY - BASICS OF ORAL IMPLANTOLOGY

Year, Semester: 4th year/2nd semester Number of teaching hours: Seminar: 14

6th week:	- Implant supported fixed prostheses
Seminar: Complementary surgical techniques, augmentation, sinus lifting, nerve transposition,	- Implant supported removable prostheses
etc.	10th week:
	Seminar: Practice I. (Planning, inserting the
7th week:	dental implant) (Department of Dentoalveolar
Seminar: -History of implantology, introduction - Biology of osseal healing, biocompatibility,	Surgery)
osseointegration and materilas related to dental	11th week:
implants	Seminar: Practice II. (Impression techniques:
- Anatomy, diagnostic techniques preceding	closed tray)
implantation (Department of Dentoalveolar	
Surgery)	12th week:
	Seminar: Practice III. (Impression techniques:
8th week:	open tray)
Seminar: -Indications, contraindications and	
planning of dental implants, time of implantation	13th week:
- Basics of oral surgery regarding dental implantation	Seminar: Prosthetics fixed on dental implants, maintenance, treatment of complications
- Complementary surgical techniques,	14th wooly
augmentation, sinus litting, nerve transposition,	14th week:
etc. (Department of Dentoalveolar Surgery)	Seminar: lest
041	Sell Control lest
Sun week:	
on dental implants	

Requirements

The aim of the course is to introduce students to the surgical, prosthetic and periodontological basics of dental oral implantology and their application in clinical practice.

Short description of the course:

During the course, students will learn about the history of implantology, the biology of osseal healing and osseointegration, and the surgical basics. They can acquire knowledge on implant materials, designing implant surgery and prosthetics, as well as on the theory of their practical implementation, and the main aspects of aftercare and complications. During the practices students will practice implant planning, and inserting, and will carry out different impression techniques.

Assessment: AW5, electronic (tablet) test

Requirements of the course:

CHAPTER 21

Attendance of seminars and practices is compulsory. There is no possibility to compensate for missed seminars and practices. All abscences must be certified within 3 working days. The ratio of abscences cannot exceed the 20% of the total number of seminars and practices.

Conditions of signature in the lecture book:

The signature in the lecture book will be refused in cases of abscence from more than 20% of seminars and practices.

Credits points can be given only for students, who attended at least 80% of the seminars, and passed the electronic (tablet) test.

Final five grade practical (AW5) evaluation:

Electronic (tablet) test will be held on the last week of the semester, covering the topics of seminars, practices and reading materials.

The grade of the electronic (tablet) test will be calculated as the following:

0-60%	fail (1)
61-70%	pass (2)
71-80%	satisfactory (3)
81-90%	good (4)
91-100%	excellent (5)

If the student fails, or does not attend the evaluation, the AW5 grade is "fail", which can be improved as a "B" or "C" chance during the exam period in the form on an electronic (tablet) test.

Subject: PRAXIS MANAGEMENT

Year, Semester: 5th year/2nd semester Number of teaching hours: Lecture: **12**

1st week:	6th week:
Lecture: Course introduction. What is a dental practice?	Lecture: The appointment book.
-	7th week:
2nd week:	Lecture: Painless paperwork.
Lecture: Locating, designing a dental office.	
	8th week:
3rd week:	Lecture: Performance and achivement.
Lecture: Financing a dental practice.	Stress management.
Dental insurance.	C
	9th week:
4th week:	Lecture: Equipment and maintenance.
Lecture: Stock control.Staff management. The	1 1
working team.	10th week:
5	Lecture: Ouality management.
5th week:	
Lecture: Time management.	11th week:
	Lecture: Summary: How to professionally
	1

market your dental practice

Department of Behavioural Sciences

Subject: BEHAVIOURAL MEDICINE

Year, Semester: 4th year/1st semester Number of teaching hours: Lecture: **10**

1st week:	6th week:
Lecture: Introduction to behavioural medicine:	Lecture: Effect of childhood aversive
Lifestyle and health	experiences on the adult health (ACE study) 1.
2nd week:	7th week:
Lecture: The stages of change (The Prochaska-	Lecture: Effect of childhood aversive
DiClemente model)	experiences on the adult health (ACE study) 2.
3rd week:	8th week:
Lecture: Psychological aspects of somatic disorders: Asthma and cardiovascular diseases	Lecture: Basic of psychotherapy.
4th week: Lecture: Aging: psychosomatic and health psychological aspects	9th week: Lecture: Methods of cognitive-behaviour therapy.
5th week:	10th week:
Lecture: Death and dying. Facing with terminal illness	Lecture: Relaxation

Requirements

Fourth year students should pass the exam at the end of the first semester (AW5). This examination includes the materials of the lectures. Materials of all lecture will be given to students before the examination. The Department of Behavioural Sciences will adhere to the requirements of the Rules and Regulations for English Program Students. The student must be present and take the examination at the designated time. (He/she must explain the reason for any absence from the examination to the Departmental Adviser within 1 days of the day of examination.)

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Practical: 20

Subject: **COMMUNICATION SKILLS** Year, Semester: 1st year/1st semester

Number of teaching hours:

1st week: Group analysis, discussion of individual experiences. Practical: Introduction. Understanding the course requirements. The concept of communication. Communication at the 7th week: University of Debrecen -practical aspects. Practical: Basic concepts of empathy, role in healthcare. Problems of empathy. Conflict management styles. Feedback in medical 2nd week: communication: the mirroring and the Practical: Communication - basic concepts. normalizing technique. Evaluation of personal Channels of communication: verbal and nonverbal communication. Theoretical and practical communication style. aspects. 8th week: 3rd week: Practical: The importance of communication with people in different medical situations. The Practical: Communication styles. Assertive communication techniques. concept of suggestive communication in medicine: when to use and how to use suggestive 4th week: techniques? **Practical:** Professional communication in the healthcare. Doctor-patient interview - basic 9th week: concepts, attitude, and basic communication **Practical:** Application of the theoretical study skills. Active listening. material: student presentations. Feedback for the presenters: positive comments, negative comments, questions. 5th week: Examples of doctor-patient communication situations. Anxiety, assertivity, and aggression in 10th week: professional communication in healthcare. **Practical:** Application of the theoretical study Observation, evaluation, professional opinion. material: student presentations. Feedback for the presenters: positive comments, negative comments, questions. Closing the semester: 6th week: Examples of doctor-patient communication course discussion, feedback for the teacher. situations. Anxiety, assertivity, and aggression in professional communication in healthcare. Observation, evaluation, professional opinion.

Required reading material: Pilling, J.: Medical Communication in Practice. Medicina, 2021.

Recommended reading: Varga, K: Beyond the words. Communication and suggestion in medical practice. Medicina, 2011.

Requirements

Aims:

Introducing and recognizing fundamental characteristics of human communication and developing basic knowledge, skills, and attitudes that are most important in the doctor-patient relationship. Providing support for developing professional identity, identify personal communication skills, and

developing effective, professional communication skills. Enhancing the ability for teamwork and the understanding of interpersonal relationships in medical settings through fieldwork and other examples.

This course serves as a basis for the courses Medical Psychology (3rd year) and Behavioural Medicine (4th year) providing a more specific understanding and knowledge of the behavioral aspects of medical practice.

Theoretical study material covered and required to know:

Basic concepts of communication. Concepts of verbal and non-verbal communication and appropriate application in healthcare settings. Understanding the basic skills and attitudes in healthcare communication. Concept and medical usage of assertive communication and suggestive communication.

Provided practical skills required to know:

Communication techniques: basics of medical communication techniques. Conscious and appropriate usage of non-verbal communication in different healthcare situations. Active listening. Mirroring technique. Attitudes: patient-centered healthcare, empathy. Skills: assertive communication skills. Suggestive communication skills.

Framework and process of learning:

Besides providing theoretical information, small-group learning discussions, role-plays, and observational tasks will be introduced. This way students can be active participants in learning and acquiring practical skills. Students will be facilitated to give feedback and formulate and express individual professional opinions as a form of free discussion, oral and written presentation. Shared individual experiences provide the possibility for further, group-level evaluation.

Course requirements:

Attendance at the practicals, completion of the field study the oral presentation, and the written essay.

Grade: 5 grade practical grade.

Number of teaching hours.

Subject: **MEDICAL ANTHROPOLOGY** Year, Semester: 3rd year/1st semester

Lecture: 15	
1st week:	epistemological background of its legitimity.
Seminar: "Roots" and "shoots" of medical	
anthropology: the web of basic concepts.	4th week:
	Seminar: Post-modern knowledge and concept
2nd week:	of man in medicine: a critical-interpretive
Seminar: Historical - cultural determination of medical concept of man.	approach to medical anthropology.
-	5th week:
3rd week:	Seminar: Doctor-patient interaction: a cultural
Seminar: Medical knowledge: cultural and	anthropological aspect.
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6th week: Seminar: Explanatory models and illness narratives explaining doctor-patient bonds.	11th week: Seminar: Rituals and their relation to health.
	12th week:
7th week: Seminar: Cultural definition of anatomical and physiological concepts.	Seminar: Ethnomedicine and its European school.
	13th week:
8th week:	Seminar: The concept of man in medicine: a text
Seminar: Medical treatments vs. alternative treatments: the concepts of alternative medicine.	analysis.
-	14th week:
9th week:	Seminar: The nature of the scientific basis in
Seminar: Death and dying: anthropology of loss and bereavement.	medical knowledge: a test analysis.
	15th week:
10th week:	Seminar: Concluding discussion.
Seminar: Biological and social death in Western societies.	

Requirements

Participating in seminars, giving a presentation on a given topic.

Evaluation: Based on the activity at seminars and on a 14th week test.

Course Objectives and Course Outline: The object of medical anthropology is the human being, as he/she appears in the context of health and disease, in the healing processes and in the health-care system. The basic method of medical anthropology is historic-hermeneutical in the sense that man is investigated by this discipline in historical and cross-cultural relations; it is an integrative study and in this role it uses the contributions of different forms of knowledge (philosophical anthropology, social philosophy, cultural anthropology, psychoanalysis, sociology, etc.); the problems of health-illness is discussed in socio-economic dynamics; it deals with biomedical approach as a cultural product and in this way it draws the attention to the relation between individual experience, cultural meaning and social structure. The medical anthropology semester consists of 15 hours seminar; these are organised in two-hour seminars in every second week. Method: Every student should actively participate by presenting a short lecture on a chosen topic (possibly in group-work). One hour from the 15 hour course will be reserved for tutorial discussion with the instructor during the preparation period. Every student should read a given paper for every seminar and is expected to put the presenters questions concerning the topic a few days before the seminar. The seminars can only be successful, if students participate actively in the discussions. Requirement for the AW5 evaluation: Passing the last week test/essay, which is based on the course textbook, the compilation of readings and seminar discussions.

Subject: MEDICAL SOCIOLOGY

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: **8** Seminar: **7**

8th week:	health at population level civilisation illnesses.
Lecture: Basic course information	The concept of risk factor
9th week:	13th week:
Lecture: Introduction to sociology	Seminar: Presentations I.
10th week:	14th week:
Lecture: Introduction to medical sociology	Seminar: Presentations II.
11th week:	15th week:
Lecture: Medicalization	Seminar: Exam
12th week: Seminar: The concept of health measuring	

Requirements

Requirements. Making a presentation is prerequisite for the end of course test. Making a presentation is no longer prerequisite for the exam. EXAM: Written Exam (AW5)

Department of Biochemistry and Molecular Biology

Subject: **MOLECULAR MECHANISM OF DISEASES OF GREAT POPULATIONS** Year, Semester: 3rd year/1st semester Number of teaching hours: Lecture: **25**

1st week:	
Lecture: Introduction to molecular medicine	7th week:
	Lecture: Cancer II.
2nd week:	
Lecture: Genomic medicine	8th week:
	Lecture: Cancer II.
3rd week:	
Lecture: Diabetes	9th week:
	Lecture: Osteoporosis
4th week:	-
Lecture: Obesity	10th week:
5th week:	Lecture: Immunedeficiencies
Lecture: Vitamin D and immundefects	
6th week:	
Lecture: Cancer I.	

Requirements

Course content: topics presented at the lectures (available at the elearning site of the Department

of Biochemistry and Molecular Biology,) Follow the link: Educational materials- Elective courses **Attendance:** Students are expected and required to attend all lectures of this course. No more than one unexcused absence is permitted. Students will fail the course on their second unexcused absence. Legitimate excuses should be presented in writing to the course administratorby the specified date.

Grading policy: The final grade will be based on the final oral exam at the end of the semester. Students have to select one topic from the full list of course topics for their oral exam, and can sign up for the topic at the link below. The final sign-up sheet will be posted on the department web-site at the beginning of the exam period. It will be your responsibility to contact the lecturer for the assignment, and for the date of the oral examination. The course lecturers will assign scientific publications to the students based on the sign-up sheet. For the oral exam students are expected to prepare a short Powerpoint presentation (4-5 slides) based on the publication, and discuss the publication with the lecturer.

Please follow the **announcements** of the course administrator about exam dates or changes in the schedule on the bulletin board (LSB downstairs, 1 corridor), and on the department

Department of Biophysics and Cell Biology

Subject: GETTING CLOSE TO THE LAB-HANDS-ON EXPERIENCE IN BIOPHYSICAL METHODS

Year, Semester: 1st year-5th year/2nd semester Number of teaching hours: Practical: 42

1st week: Practical: Getting familiar with the laboratory and the measurement techniques to be used.	preparation procedures for experiments. Learning and practicing the use of experimental measurement techniques.
Discussion of the chosen research topic.	6th wook.
2nd week:	Practical: Learning and practicing the sample
Practical: Learning and practicing general cell	preparation procedures for experiments.
culture laboratory work.	Learning and practicing the use of experimental measurement techniques.
3rd week:	Ĩ
Practical: Learning and practicing general cell	7th week:
culture laboratory work.	Practical: Learning and practicing the
	evaluation and statistical analysis of
4th week:	experimental results. Conducting experiments.
Practical: Learning and practicing the sample	94h
preparation procedures for experiments.	Stn week:
Learning and practicing the use of experimental	Practical: Learning and practicing the
measurement techniques.	experimental results. Conducting experiments
5th week:	experimental results. Conducting experiments.
Practical : Learning and practicing the sample	
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9th week:	13th week:
Practical: Conducting experiments.	Practical : Conducting experiments. Discussion of the presentation.
10th week:	
Practical: Conducting experiments.	14th week: Practical: Conducting experiments. Discussion
11th week:	of the presentation.
Practical: Conducting experiments.	
12th week:	
Practical: Conducting experiments.	

Requirements

During the course, the student will actively participate in research at the Institute and, under the guidance of a supervisor, will be able to carry out experiments on medically relevant questions in cellular or animal models or patient samples.

The student will choose from the scientific topics to be announced at the beginning of the course, learn about the processes of sample preparation, the use of experimental measurement techniques and basic methods of statistical analysis of experimental results, and carry out experiments on the topic.

At the end of the course, the student will be required to make a presentation to demonstrate the research topic studied and the laboratory work carried out. Completion of the course may later provide the basis for a thesis and student research projects.

Department of Dentoalveolar Surgery

Subject: ORAL SURGERY ELECTIVE I. EXTRACTION PRACTICE

Year, Semester: 4th year/1st semester Number of teaching hours: Practical: 14

3rd week:	8th week:
Self Control Test	Lecture: Theoretical: Technique of tooth
	extraction
6th week:	Pre-operative information of patient and written
Self Control Test	consent form
	After-care of the oral surgical patients,
7th week:	postexraction instructions
Lecture: Theoretical: Basic rulesof the dental office	Instrumentation.
History taking and examination of oral surgical	9th week:
patients	Lecture: TEST I
Infection control	Theoretical: Local anaesthetics.
Preoperative preparation of the patients.	Methods of local anaesthesia, possible adverse
Indications and contraindications for extraction	reactions and side effects

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10th week: Lecture: Theoretical: Complications of tooth extraction and their treatment. Usage of elevators. Self Control Test

11th week: Lecture: Case reports.

12th week: Lecture: TEST II

13th week: Lecture: Final consultation Self Control Test

Requirements

Course Objectives:

Understanding the theoretical and practical basics of Dentoalveolar Surgery and their use in the clinical practice.

Brief Course Description:

During the course, the students meet the basic rules of the dentist's office, as well as the essential aspects of patient care such as the history and implementation of anamnesis, infection control, simple and surgical tooth extraction, anesthetic techniques applicable in the maxillofacial region, and so on. By viewing the case reports, the course also helps you to put these into practice.

Assessment:

Five grade evaluation (AW5) practical grade. Evaluation is based on the results of two written control tests during the semester. (can be electronical SCTs)

Course Requirements:

Active participation on seminars is mandatory. Missed classes cannot be made up for. All of the absences must be verified within 3 business days. The absence rate may not exceed the total 20% of the course-hours.

Signature Requirements:

If the seminar absence exceeds 20%, the course signature will be denied. Credits may be awarded to students only if they attended at least 80% of the seminars and achieved a minimum of 2 (pass) practical grade.

Assessing grades according to test scores:

The grade is based on the result of the 2 SCTs. The test covers the materials of the seminars and the textbook. Tests are evaluated as follows:

0-60% Fail (1)

61-70% Pass (2)

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71-80% Satisfactory (3)

81-90% Good (4)

91-100% Excellent (5)

If the results of the two SCTs do not reach the 2 (pass) grade, the student may, as required, resit the exam (B, C chance) in the exam period in the form of a test at the time designated by the Department.

Department of Foreign Languages

Subject: LATIN LANGUAGE Year, Semester: 1st year/2nd semester Number of teaching hours: Practical 28 1st week: Practical: Class introduction and Chapter 1: 8th week: Introduction to medical terminology; Nouns, Practical: Chapter 6: Plural nominative forms in the anatomical terms of the head and neck; adjectives anatomical abbreviations 2nd week: Practical: Chapter 2: Anatomical positions, 9th week: planes and directions in Dentistry, Adjective Practical: Chapter 7: Plural genitive forms in the endings, Concord of gender anatomical terms of the head and neck 3rd week: 10th week: Practical: Chapter 3: Declensions and genitive Practical: Chapter 8: Muscles of the head and phrases neck 4th week: 11th week: Practical: Chapter 4: Singular genitive form of Practical: Chapter 9: Basic clinical terms related adjective phrases in anatomical terms of the skull to the oral cavity and central nervous system 12th week: 5th week: Practical: Chapter 10: Latin and Greek word roots and term elements, prefixes and suffixes in Practical: Chapter 5: Basic diagnostic terms of head and neck injuries; adjective formation; the terms of the head and neck; revision Latin prefixes 13th week: 6th week: Practical: Revision, End-term test **Practical:** Revision 14th week: 7th week: **Practical:** Evaluation Practical: Mid-term test

Requirements

Requirements of the course:

Attendance

- Language class attendance is compulsory. The maximum percentage of allowable absences is 10% of the classes. Students arriving more than ten minutes late for the classes are not allowed to enter the class. Being late is counted as an absence. If the number of absences is more than two, the final signature is refused and the student must repeat the course.
- Students are required to bring the coursebook or other study material given out for the course with them to each language class. Active participation is evaluated by the teacher in every class. Attendance might be refused if a student's behaviour or conduct does not meet the requirements of active participation or he/she fails to bring the coursebook in a printed or digital format to the class.

Testing, evaluation

- In each Latin language course, students must sit for 2 written language tests (40 40% of the final score). Students have to reach at least 50% of the points in each test, otherwise they have to retake it in week 14.
- A further way of assessment is 5-5 online assignments before the mid-term and the end-term tests (5 5%). The minimum requirement of a successful assignment is reaching at least 80% of the possible scores.
- A further requirement is the knowledge of the core vocabulary of cca. 400 words/medical terms per semester announced in the first week. There is a word quiz in the first 5 minutes of the class, every week. The word quiz is passed if the student knows at least 80% of the words asked in the quiz. Students obtain points (5-5%) by taking the word quizzes successfully.

Based on the final score the grades are given according to the following table:

Final score Grade	;
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60-69	pass(2)

70-79 satisfactory (3)

80-89 good (4)

90-100 excellent (5)

• If the final score is below 60, the student once can take a remedial test on the failed parts of the material.

Coursebook: Latin for students of dedntistry 2024, by László Répás

Assignments, vocabulary lists and further details can be found on the elearning site of the Department of Foreign Languages (www.elearning.med.unideb.hu).

Department of Human Genetics

Subject: MEDICAL GENETICS

Year, Semester: 1st year/2nd semester Number of teaching hours: Lecture: **30** Practical: **26**

1st week:

Lecture: (1) Basic principles of nucleic acid structure and gene expression I. (2) Basic

principles of nucleic acid structure and gene expression II. (3) Fundamentals of cells and chromosomes I.

Practical: Introduction to genetics. Basic principles of nucleic acid structure and gene expression.	Chromosomal abnormalities and structural variants I. Practical: Population genetics.
2nd week: Lecture: (4) Fundamentals of cells and chromosomes II. (5) Patterns of inheritance I. (6) Patterns of inheritance II. Practical: Fundamentals of cells and chromosomes.	8th week: Lecture: (22) Chromosomal abnormalities and structural variants II. (23) Molecular pathology: connecting phenotypes to genotypes I. (24) Molecular pathology: connecting phenotypes to genotypes II. Practical: Discussion on material of lectures 10-
3rd week: Lecture: (7) Core DNA technologies: amplifying DNA, nucleic acid hybirdization, and DNA sequencing I. (8) Core DNA technologies: amplifying DNA, nucleic acid hybirdization, and DNA sequencing II. (9) Genetic testing in healthcare. Practical: Patterns of inheritance and pedigree analysis.	 20. 9th week: Lecture: (25) Mapping and identifying genes for monogenic disorders. (26) Complex disease: identifying susceptibility factors and understanding pathogenesis. (27) Cancer genetics and genomics I. Practical: Sequencing.
4th week: Lecture: (10) Analyzing the structure and	Self Control Test (2nd test in extra time on Monday morning.)
expression of genes and genomes. (11) Principles of genetic manipulation of mammalian cells. (12) Gene regulation and the epigenome I. Practical: Polymorphisms. Theoretical background of PCR and qPCR. Self Control Test (1st test in extra time on	 10th week: Lecture: (28) Cancer genetics and genomics II. (29) Model organisms and modeling disease. (30) Genetic approaches to treating disease. Practical: Cell cycle regulation, oncogenetics.
Monday morning.)	11th week:
5th week: Lecture: (13) Gene regulation and the enigenome II (14) Gene regulation and the	Lecture: Lectures of Medical Genomics compulsary elective course Practical: Cytogenetics.
epigenome III. (11) Some regulation and the epigenome III. (15) Uncovering the architecture and workings of the human genome. Practical: Detection of human polymorphism by polymerase chain reaction.	12th week: Lecture: Lectures of Medical Genomics compulsary elective course. Practical: Study of sex chromatin. Demonstration of mammalian chromosomes
6th week: Lecture: (16) An overview of human genetic	Preparation of metaphase spreads.
variation I. (17) An overview of human genetic variation II. (18) Human population genetics. Practical:	13th week: Lecture: Lectures of Medical Genomics compulsary elective course.
Gene regulation and the epigenome.	Practical: Discussion on material of lectures 21-
7th week: Lecture: (19) Comparative genomics and genome evolution. (20) Human evolution. (21)	Self Control Test (3rd test in extra time.)

14th week: Lecture: Lectures of Medical Genomics compulsary elective course. Practical: Practice of Medical Genomics compulsary elective course.

Requirements

Conditions of signing the subject

The presence of students at practices is obligatory and will be recorded. Students are responsible for signing the list of attendance. The professor refuses his/her signature for the semester's course-work in the case of over two weeks of absence, even if the student has an acceptable excuse. Missed practices can be made up for in the classes with other groups with the permission of the academic advisor. Permission is given only before the original time of the practice.

During the semester there will be three self-control tests offered in the 4th, 9th and 13th weeks. The questions include single and multiple choice and short essay questions, e.g. figures, karyograms, pedigrees, calculations, definitions (glossary), etc. Terms required from the glossary will be made available online. These may be featured as short assay questions in self-control tests. Unlike the rest of the material, glossary terms are cumulative, i.e., terms required for an earlier test may appear in a later one. (So ALL glossary terms will be required for the last self-control test.)

Based on the % average of the three tests a practical grade will be offered according to the next table:

Percentage (%)	Mark
40-59.99	pass (2)
60-69.99	satisfactory (3)
70-79.99	good(4)
80-100	excellent (5)

Those students who want a better mark can take an exam during the exam period. The result of this exam is binding, it can be better, the same or worse than the offered mark. Students with lower achievement than 40% should take a practical exam during the exam periode.

Exam (for improving your practical grade)

The written examination at the end of the semester covers all the material of the semester taken in the lectures, and practices. The examination questions include single and multiple choice and short essay questions, figures, definitions (glossary terms), etc. The marks are based on the student's performance, expressed in percentage (%) as shown in the table below:

Mark
fail (1)
pass (2)
satisfactory (3)
good (4)
excellent (5)

The percentage values include the student's performance at the ESE as well as the bonus percentage they have obtained by taking the three mid-semester tests (based on the average result of the three mid-semester tests).

The following table shows the bonus percentage based on the average result of the three midsemester tests.

Average of the 3 tests (%) Bonus %

0 - 29.99	0
30 - 34.99	1
35 - 39.99	2
40 - 44.99	3
45 - 49.99	4
50 - 54.99	5
55 - 59.99	6
60 - 64.99	7
65 - 69.99	8
70 - 74.99	9
75 - 100	10

Absence counts as 0%. These bonuses are counted only on the exam. Bonuses are calculated only in the year of acquisition.

The slides of the lectures and up-to-date information can be found at

https://elearning.med.unideb.hu, username and password is your network-id (same as Neptun-id) and password. You will be able to check the content after the Neptun has registered you to the subject.

Departmental homepage: https://humangenetics.unideb.hu

Subject: MEDICAL GENOMICS

Year, Semester: 1st year/2nd semester Number of teaching hours: Lecture: **12** Practical: **2**

11th week:	(GWAS) in complex genetic diseases,
Lecture: 1. Introduction and the Human Genome	Personalized genome analysis
Project	8. Clinical Laboratory Genetics 1
2. Genomes of bacteria, plants, fungi, animals	9. Clinical Laboratory Genetics 2
and viruses	
3. Traditional and NG Sequencing	14th week:
	Lecture: 10. Invasive and non-invasive
12th week:	approaches for prenatal diagnosis
Lecture: 4. Comparative and functional	11. Pharmacogenomics
genomics	12. Summary 2.
5. The world of RNAs	Practical: Expression and comprehensive
6. Summary 1.	genomics. GWAS.
13th week:	
Lecture: 7. Genome-wide association studies	

Requirements

Conditions for completing the course

• Electronic course enrollment (theory and practical) at Neptun

• Participation in the practical at week 14.

• Getting a grade based on 2 mid-year tests or a practical exam during the exam period.

Preparation for the Quizzes and Exam

• Attendance and note-taking at Lectures is recommended.

• The lecture slides, practical materials and announcements for the students will be available on the website at https://elearning.med.unideb.hu. The username and password for the system are the same as the network ID and password used for Neptun.

• Test questions will be available on elearning.

Mid-year Quizzes and the Final exam

• In weeks 12 and 14, students will write quizzes in the time of the lectures.

• Test questions will be available (questions only, without answers) allowing more effective note-taking.

• Based on the average of the two practical tests a final grade will be offered according to the next table:

70% - 100%: 5 60% - 69.9%: 4 50% - 59.9%: 3 40% - 49.9%: 2

• Students, who do not write the two tests or do not accept the offered grade, must take final exam. Three exam dates will be given in the exam period.

• The written exam contains essay(s) and test questions. Calculation of grades:

85% - 100%: 5 75% - 84.9%: 4 60% - 74.9%: 3 50% - 59.9%: 2 0% - 49,9%: 1

Department of Internal Medicine

Subject: CLINICAL GERONTOLOGY Year, Semester: 3rd year/2nd semester

Number of teaching hours: Lecture: **30**

Department of Operative Dentistry and Endodontics

Subject: CARIOLOGY ELECTIVE I.(FUNDAMENTALS OF CARIOLOGY)

Year, Semester: 3rd year/1st semester Number of teaching hours: Seminar: 14

1st week:aspectSeminar: Morfology of the teeth. Gnatological324
 2nd week: Seminar: Morfology of the teeth. Gnatological aspect 3rd week: Seminar: Morfology of the teeth. Gnatological 	9th week: Seminar: Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth
aspect Self Control Test	10th week: Seminar:
4th week: Seminar: Restorations step by step. Practical considerations. Functional-anatomical build-up.	Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth
5th week: Seminar: Restorations step by step. Practical considerations. Functional-anatomical build-up. Self Control Test	11th week: Seminar: Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth
6th week:	
Seminar: Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth	Seminar: Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth
7th week:	
Seminar: Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth	13th week: Seminar: Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth
8th week:	
Seminar: Coronal build up of upper; lower first molar with plastic material in mulage and real size in plastic tooth	14th week: Seminar: Online test

Requirements

Seminar: 14 The module is taught provided at least 5, max. 25 students sign up for it. For information about the module contact: Dr. Martos Renata

Course objectives

The aim of the course: is to learn functional and protective features of dental and occlusion and to improve students' occlusion skills to build occlusal morphology of molar teeth

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Short description of the course

During the lectures/seminars detailed dental morphology and the associations between dental morphology and occlusions will be explained. During the practices occlusal morphology of upper and lower first molars will be built up with plastic material, imitating the invertion technique of resin based composite restorative materials.

Requirements for signing the lecture book:

-To attend seminars on a regular basis (there is no place for making up for missed classes.)

-Absences are required to be officially certified which cannot be more than 2 seminars.

-To take the final test of the seminar. The student who does not take this grade offering test his/her lecturebook will be refused to be signed.

Examination: Assessment of work on the 5 grade scale

The method of formation of the assessment of work grade:

Based on the result of the online final test we follow the below conversion to define the grade:

Grade
fail (1)
pass (2)
satisfactory (3)
good (4)
excellent (5)

Retake of the final test is not allowed. If the final test is below 40%(pass), then the mid semester grade is a fail. This can be amended with B and C exam chances in the exam period. List of textbooks:

-Franco Mangani, A. Cerutti, A. Putignano: Guidelines for Adhesive Dentistry: The Key to Success. Quintessence Publishing Co Ltd, 2009.

-Geoffrey C van Beek: Dental Morphology an illustrated guide. Wright, 2005. Further reading:

James B. Summitt, J. William Robbins, Thomas J. Hilton, Richard S. Schwartz, Jose Dos Santos Jr.: Fundamentals of Operative Dentistry: A contemporary Approach. Quintessences Publishing Co, Inc. 2006.

Jean-Francois Roulet, Nairn H.F. Wilson, Massimo Fuzzi: Advances in Operative Dentistry. Quintessence, 2001.

-Riquieri, H: Dental Anatomy and Morphology. Quintessence, 2019.

-Stanley N: Wheeler's Dental Anatomy, Physiology and Occlusion. Elsevier, 11th Edition, 2019. -Peter E. Dawson: Functional Occlusion From TMJ to Smile Design, Mosby, Elsevier, 2007.

Requirements for taking up the subject:

Odontology, Introduction to Prosthodontics I.: Dental Materials, Introduction to Prosthodontics II.: Introduction to the Fixed Prosthodontics

Subject: CARIOLOGY ELECTIVE II.(DIET AND NUTRITION IN ORAL HEALTH)

Year, Semester: 4th year/2nd semester Number of teaching hours: Seminar: 14

1st week:	oral lesions
Seminar: Nutrition as the foundation of general and oral health.	9th week:
2nd week: Seminar: Adequate diet. Energy balance and	compromised patient: oral surgery, orthodontics
weight control	10th week:
3rd week: Seminar: Nutritions and dietary supplements. III.	Seminar: Nutrition concerns for the dentally compromised patient: dentures, dysphagia, tempomandibular disorders
	11th week:
4th week: Seminar: Nutrition implication in chronic health conditions	Seminar: Nutrition in pregnancy, infancy, childhood and adulthood. The older patient
	12th week:
5th week:	Seminar: Principles of diet screening,
Seminar: Nutrition in the growth and development of oral structures	assessment and guidance
development of ordi structures	13th week:
6th week:	Seminar: How medications and herbal remedies
Seminar: Diet, nutrition and teeth	can affect nutrition, diet and oral health
7th week:	14th week:
Seminar: Nutrition and the periodontium	Seminar: Self control test
8th week:	
Seminar: Immune compromising conditions and	

Requirements

Seminar: 14 For information about the module contact: Dr. Kelentey Barna The module is taught provided at least 5 students sign up for it.

Course objectives The aim of the course: explanation of diet and nutrition in oral health

Short description of the course

Lectures deal with basic terms of diet and nutrition. Other important themes: nutrition of pregnancy, infancy, childhood, adulthood and older patient. Among other themes: diet and teeth, nutrition and the periodontium.

Requirements for signing the lecture book: -To attend seminars on a regular basis (there is no place for making up for missed classes)

CHAPTER 21

-Absences are required to be officially certified which cannot be more than 2 seminars. -To take the final test of the seminar. The student who does not take this grade offering test his/her lecture book will be refused to be signed.

Examination: Assessment of work on the 5 grade scale

The method of formation of the assessment of work grade:

Based on the result of the final test we follow the below conversion to define the grade:

Achieved result in %	Grade
0-39.9%	fail (1)
40-54.9%	pass (2)
55-69.9%	satisfactory (3)
70-84.9%	good (4)
85-100%	excellent (5)

Retake of the final test is not allowed. If the final test is below 40%(pass), then the mid semester grade is a fail. This can be amended with B and C exam chances in the exam period.

List of textbooks

Palmer CA: Diet and Nutrition in oral health. Upper Saddle River, 2003. ISBN 0-13-031384-X Mann J, Truswell AS: Essentials of human nutrition. Oxford University Press, 1998. ISBN 0-19-262756-2

Requirements for taking up the subject: Restorative Dentistry I. (Cariology)

Subject: CARIOLOGY ELECTIVE III. (ESTHETICS IN RESTORATIVE DENTISTRY) Year, Semester: 5th year/2nd semester Number of teaching hours:

Seminar: 12 1st week: characteristics of enamel and dentin. Optical Seminar: Esthetics. Proportions, rules, characteristics of composites. symmetry and individualisation during composite restorations and build ups. Effects of 4th week: ageing. Primary, secondary and tertiary Seminar: Wax-up, mock-up, silicone key and it's Importance before the final build up. morphology. 2nd week: 5th week: Seminar: Bioemulation. Direct or indirect Seminar: Composites with high esthetics. Traditional and modern layering techniques. The methods? Advantages, disadvantages. importance of finishing and polishing. 3rd week: Seminar: The four dimension of color. Optical 328

6th week:	Vanini's layering technique.
Seminar: Tooth form corrections, diatema closure, veneers associated with case presentations.	10th week: Seminar: Upper first incisor build up with Vanini's layering technique
7th week:	
Seminar: Upper first incisor build up with	11th week:
Vanini's layering technique.	Seminar: Upper first incisor build up with Vanini's layering technique.
8th week:	
Seminar: Upper first incisor build up with	12th week:
Vanini's layering technique.	Seminar: Online test
Oth wook:	

Seminar: Upper first incisor build up with

Requirements

Seminar: 12

The module is taught provided at least 5, maximum 15 students sign up for it. For information about the module contact: Dr. Renáta Martos

Course objectives

The aim of the course: the introduction of esthetic principles in the field of dentistry and the materials, techniques and methods used for biomimetic build up of first upper incisor.

Short description of the course

During the seminars the following topics will be discussed: esthetic principles in the field of dentistry, detailed morphology of upper first incisors, and the concept of biomimetic tooth build-up. Practical part involves direct composit tooth build up with silicon key and according to the biomimetic layering approaches followed by finishing and polishing procedures.

Requirements for signing the lecture book:

-To attend seminars on a regular basis (there is no place for making up for missed classes.)

-Absences are required to be officially certified which cannot be more than 2 seminars.

-Tooth build-up with composite

-To take the final test of the seminar.

-The student who does not take this grade offering test his/her lecturebook will be refused to be signed.

Examination: Assessment of work on the 5 grade scale

After this course, the student with an excellent build up result may have a chance to take part in an esthetic restorative dentistry competition.

The method of formation of the assessment of work grade: Based on the result of the online final test we follow the below conversion to define the grade:

Achieved result in % Grade 0-39.9% fail (1)

40-54.9%	pass (2)
55-69.9%	satisfactory (3)
70-84.9%	good (4)
85-100%	excellent (5)
70-84.9% 85-100%	excellent (5)

If the final assey is below 40% (pass), and the practical part is acceptable the mid semester grade is pass (2). The mid semester grade is a fail (1), can be amended with B and C exam chances in the exam period.

List of textbooks:

-Harald O. Heymann, Edward J. Swift Jr., Andre V. Ritter: Sturdevant's Art and Science of Operative Dentistry (Roberson, Sturdevant's Art and Science of Operative Dentistry).
6thdition. Mosby, 2012.
-Ronald L. Sakaguchi: Craig's Restorative Dental Materials.
13th Edition. Elsevier, 2012.
-Jordy Manauta, Anna Salat: Layers: An Atlas of Composite Resin Stratification (Hardcover).
2012. ISBN: 9788874921737.
-Vanini L.: Conservative composite restorations that mimic nature. A step by step anatomical statifitecnique. J Cosm Dent 26;3:80-93, 2010.
-William J. O'Brien: Dental Materials and Their Selection. 3rd Edition. Quintessence Pub., 2002.

Requirements for taking up the subject: Restorative Dentistry III. (Cariology and Endodontics)

Subject: ENDODONTICS ELECTIVE I.

Year, Semester: 4th year/1st semester Number of teaching hours: Seminar: 14

1st week:	
Seminar: Endodontic guidelines I.	8th week:
	Seminar: Endodontic adjuncts II.
2nd week:	
Seminar: Endodontic guidelines II.	9th week:
-	Seminar: Endodontic adjuncts III.
3rd week:	
Seminar: One-visit endodontics I.	10th week:
	Seminar: Endodontic adjuncts IV.
4th week:	
Seminar: One-visit endodontics II.	11th week:
	Seminar: Endodontic case presentation I.
5th week:	-
Seminar: Avulsion I.	12th week:
	Seminar: Endodontic case presentation II.
6th week:	-
Seminar: Avulsion II.	13th week:
	Seminar: Endodontic monoblocks III.
7th week:	
Seminar: Endodontic adjuncts I.	
-	

14th week: Seminar: Test

Requirements

Seminar: 14 The module is taught provided at least 5 students sign up for it. For information about the module contact: Dr. Juhász Alexander

Course objectives

The aim of this course is to give a guidelines and analize the common parts of the endodontics with the other dental fields.

Short description of the course

The seminars and written test with simple choice questions to evaluate the given knowledge.

Requirements for signing the lecture book:

-To attend seminars on a regular basis (there is no place for making up for missed classes.) -Absences are required to be officially certified which cannot be more than 2 seminars. -To take the final test of the seminar. The student who does not take this grade offering test his/her

lecturebook will be refused to be signed.

Examination: Assessment of work on the 5 grade scale

The method of formation of the assessment of work grade: Based on the result of the final test we follow the below conversion to define the grade:

Achieved result in %	Grade
0-39.9%	fail (1)
40-54.9%	pass (2)
55-69.9%	satisfactory (3)
70-84.9%	good (4)
85-100%	excellent (5)
	· · · 11 1

Retake of the final test is not allowed. If the final test is below 40%(pass), then the mid semester grade is a fail. This can be amended with B and C exam chances in the exam period.

List of textbooks:

-M. Torabinejad, A. Fouad, R. Walton: Endodontics, Principles and Practice (5th Edition), Elsevier, 2015. ISBN 9781455754106

-G. Bergenholtz, P.H. Bindslev, C. Reit: Textbook of Endodontology. Blackwell-Munksgaard, 2003. ISBN: 8-7161-2185-6.

-Geoffrey C van Beek: Dental Morphology an illustrated guide. Wright, 2005. ISBN 9780723606666

Further reading:

-Ford's p.: Problem-Based Learning in Endodontology. Wiley-Blackwell, 2011. ISBN: 978-1-4051-6211-1

-Beer, R., Baumann, Michael A., Kim, Syngcuk: Endodontology/Color Atlas of Dental Medicine. Thieme Publishing Group, 2000. ISBN: 3-13-116461-1.

Requirements for taking up the subject:

Restorative Dentistry Propedeutics II. (Endodontics), Preventive Dentistry I.

Subject: ENDODONTICS ELECTIVE II. (MIC Year, Semester: 5th year/1st semester Number of teaching hours: Seminar: 14	CROSCOPE IN DENTAL PRACTICE)
1st week:	8th week:
Seminar: Microscopy from the beginning (history, magnification, illumination, types).	Seminar: Possibilities of chemomechanical preparation and root canal obturation during microscopic endodontic treatment
2nd week:	r r
Seminar: The dental microscopes and its	9th week:
application possibilities in dentistry	Seminar: Chemomechanical preparation and obturation of root canal.
3rd week:	
Seminar: Ergonomics in dentistry, four-handed	10th week:
treatment, the basics manual skill with a	Seminar: Possibilities for the construction of
microscope.	root-treated teeth (endocown).
4.0	Endocrown making in practice (cavity formation
	digital impression, design, milling, gluing).
Seminar: Dental microscope in endodontic and	114h www.shu
restorative dentistry	Sominor: Endoaroven in prostico (covity)
5th woole	preparation digital impression design technical
Seminar: Mornhology nathological changes in	process cementation)
the tooth structure. Anatomy of the pulp chamber	
and the root canal Instruments and devices	12th week
and the root culur. Instruments and devices.	Seminar: Ergonomics in dentistry
6th week:	Musculoskeletal Disorders (MSDs) in dentistry.
Seminar: The morphology of the molar teeth	Prevention.
(endodontic aspect). Laws that help the	
preparation of the access cavity and the root	13th week:
canal obturation.	Seminar: Exercises (posture, muscle relaxation
	and strengthening) with physiotherapist
7th week:	
Seminar: Access cavity preparation (molar	14th week:
tooth), examination of the floor of the pulp	Seminar: Written test/ppt presentation
chamber and the entrances. Instruments and	
devices	

Further reading

Rick Schmidt, Martin Boudro: The Dental Microscope: Why and how: Evidence-based Technology and Treatment. S & B Publ, 2011. ISBN 9780615436067 http://www.kennewickfamilydental.com/the-dental-microscope.html

Requirements

Seminar: 14

The module is taught provided at least 5, max. 10 students sign up for it. For information about the module contact: Dr. Bágyi Kinga

Course objectives

The aim of the course is to get to know the theoretical possibilities of magnification in dentistry and their applications in practice.

Short description of the course

During the course, students will learn about the history of the microscope, the possibilities provided by magnification, the importance of ergonomics in connection with microscopic treatment, the importance of four-handed treatment, the possible applications of the microscope in dentistry, and muscoloskeletal disorders. In addition to the theoretical part, there is also opportunity to learn various exercises from a physiotherapist and and to try out the dental operating microscope.

Requirements for signing the lecture book:

-To attend seminars on a regular basis (there is no place for making up for missed classes.)
-Absences are required to be officially certified which cannot be more than 2 seminars.
-To take the final test of the seminar. The student who does not take this grade offering test his/her lecturebook will be refused to be signed.

Examination: Assessment of work on the 5 grade scale

The method of formation of the assessment of work grade:

Based on the result of the final test we follow the below conversion to define the grade:

Achieved result in %	Grade
0-39.9%	fail (1)
40-54.9%	pass (2)
55-69.9%	satisfactory (3)
70-84.9%	good (4)
85-100%	excellent (5)

Retake of the final test is not allowed. If the final test is below 40% (pass), then the mid semester grade is a fail. This can be amended with B and C exam chances in the exam period.

Further reading

Rick Schmidt, Martin Boudro: The Dental Microscope (Why and How) http://www.kennewickfamilydental.com/the-dental-microscope.html

Requirements for taking up the subject: Restorative Dentistry II. (Endodontics)

Department of Pathology

Subject: CLINICOPATHOLOGICAL CASE PRESENTATION OF THE HEAD AND NECK REGION DISEASES

Year, Semester: 3rd year/2nd semester Number of teaching hours: Lecture: **28**

Lectures from the week 7th Exam: written exam Literature: presentations of the lectures

Participation in seminars; and before the end of the semester, select one case per topic from the case presentations given (6 in total) and write a short essay of 300 words on each given diseases.

Department of Pediatric and Preventive Dentistry

Subject: PEDIATRIC DENTISTRY ELECTIVE

Year, Semester: 5th year/2nd semester Number of teaching hours: Seminar: **12**

1st week: Seminar: Praxis management in pediatric dentistry. Organizing a dental screening.	7th week: Seminar: Problem Based Learning, case analysis.
2nd week: Seminar: Anamnesis, patient charts, dental screening in pediatric dentistry (describing symptoms, diagnostics).	8th week: Seminar: Problem Based Learning, case analysis. 9th week:
3rd week: Seminar: How to write a referral letter?	Seminar: Problem Based Learning, case analysis.
4th week: Seminar: Common dental materials and instruments used in pediatric dentistry.	10th week: Seminar: Problem Based Learning, case analysis.
5th week: Seminar: Common mistakes in pediatric dentistry.	11th week: Seminar: Problem Based Learning, case analysis.
6th week: Seminar: Adolescent problems in pediatric dentistry.	12th week: Seminar: Problem Based Learning, case analysis.

Requirements

The aims and objectives of this course: 334

The goal of the course is widen and deepen the knowledge obtained during the compulsory pediatric dentistry lectures and practicals.

Short description of the course:

Problem based learning will be used to analyze cases, estabilish diagnosis and make treatment plan for pediatric dental patients.

Assessment:

AW5 grade practical mark

Requirements:

Active participations on the seminars.

With acceptable written certificate students may miss 2 hours, there is no possibility to compensate the missed seminars.

The missed seminars shall be verified within 3 working days.

Course exemption:

With previously obtained valid signature the attendance exemption of the practices can be requested till the end of the first week.

Conditions of signing the index:

During the course every student must present a pediatric case, make differential diagnosis and treatment plan. The presentation will be evaluated with a five grade mark.

Department of Periodontology

Subject: PERIODONTOLOGY ELECTIVE I.

Year, Semester: 4th year/2nd semester Number of teaching hours: Lecture: **14**

Department of Physiology

Subject: PROBLEM BASED LEARNING IN PHYSIOLOGY

Year, Semester: 2nd year/2nd semester Number of teaching hours: Practical: **28**

1st week:

Practical: The practices are listed at the web site of the elearning.med.unideb.hu web site

(Department of Physiology menu item).

Requirements

1.Signature of the semester

This is an individual project oriented program. The signature of the semester may be refused if the project report is not submitted before to the deadline.

2.Evaluation during the semester No mid-semester evaluation.

3.Examination

The evaluation is based on the project report submitted before the deadline. For specifics, see the

rules below and consult with the elearning.med.unideb.hu web site (Department of Physiology menu item).

Aims of the course: The program offers carefully selected and designed problems from the field of Physiology. Students can learn how to apply problem solving approach, self-conducted strategy and analytic thinking in resolving selected problems. Skill in team-work is helpful in the program.

RULES FOR THE PROBLEM BASED LEARNING (PBL) CREDIT COURSE

1. The program is conducted between 3rd and 11th academic weeks of the second semester.

2.Students must have a tutor, this is the prerequisite for the program. Tutor can be any professor of the Department, not only the student's seminar/practical instructor. The applicant should contact the chosen professor and request him/her to undertake the tutorship. Professors of the Department maintain the right to accept or refuse to be the tutor of an applicant.

3.Special Rule: the applicant has to organize the chosen project and register at the tutor (NOT via NEPTUN) until the end of first academic week. Applications after the first week are not accepted. 4.Preconditions for the program: mark three (3) or better in Physiology I and permission of the Department (arranged by the tutor).

5. The maximum number of participants in the program cannot exceed 100 students. In case, the number of applicants is higher than 100, the seminar/practical instructor or the course coordinator can refuse applicants with mark three or better.

6. Two students works in team on one project, and prepare one mutual report, thus they get the same score at the end of the program regardless their contribution. The Journal Club and Lab Visit programs are carried out individually.

7.Evaluation of the students is based on the written report or the oral presentation using five grade score system (1-5). Grades are final, no make-up is allowed.

8. The list of offered programs is available at the practical lab of the elearning.med.unideb.hu web site (Department of Physiology menu item).

9. The deadline for the program is the end of the 11th academic week. Reports should be submitted to the tutor. Missing the deadline automatically results grade 1 (fail).

10. Detailed information for the program can be accessed on the elearning.med.unideb.hu web site (Department of Physiology menu item).

Subject: THE REGULATORY ROLE OF THE CELL MEMBRANE IN PHYSIOLOGICAL AND PATHOLOGICAL CONDITIONS

Year, Semester: 2nd year/2nd semester Number of teaching hours: Lecture: **20**

1st week:	currents The connection between excitatory
Lecture: Introduction, a general characterisation	processes and the regulation of [Ca2+]i
of the cell membrane. The electrical and	
biochemical characteristics of the surface	3rd week:
membrane.	Lecture: [Ca2+]i dependent excitatory processes in the surface membrane of cardiac cells.
2nd week:	
Lecture: General description of cardiac ionic	

4th week:	
Lecture: The structure of the skeletal muscle.	7th week:
Ionic channels underlying the excitability of the	Lecture: Changes in the membrane properties of
skeletal muscle. Molecular structure of ionic	the neurons under pathological conditions.
channels.	Pathological conditions arising from the
	hyperexcitability of neurons.
5th week:	
Lecture: Changes in surface membrane function	8th week:
in inherited skeletal muscle disorders:	Lecture: The role of TRP channels in the
degenerative forms (muscle dystrophies).	regulation of biological processes of human skin
Changes in surface membrane function in	cells. TRP-pathies.
inherited skeletal muscle disorders: alterations in	
the muscle tone (myotonies).	9th week:
	Lecture: The role of the endocannabinoid
6th week:	system in the transmembrane signaling of skin-
Lecture: The role of the surface membrane in	derived cells. Is the human skin always "high"?
the regulation of calcium homeostasis in	
neurons. Pathological conditions arising from	
abnormal calcium handling in neurons.	

Requirements

1. Signature of the semester

Lecture attendance may be followed up by the Department. The lecture will not be delivered if 5 or fewer students show up. Nevertheless, the lecture material is going to be asked in the final assessment.

For continuous updates on all education-related maters, please check the elearning.med.unideb.hu web site (Department of Physiology menu item).

2. Evaluation during the semester None.

3. Examination

At the end of the course a written final assessment will be organized in the form of multiple choice questions. The result of this assessment will determine the verification mark of the credit course using the following conversion table:

0-39.9% - Failed

40-54.9% - Pass

55-69.9% - Satisfactory

70-84.9% - Good

85-100% - Excellent

Department of Psychology

Subject: MODERN TECHNIQUES ALLOWING THE INVESTIGATION OF PHYSIOLOGICAL PHENOMENA

Year, Semester: 2nd year/2nd semester Number of teaching hours: Lecture: **30**

1st week: Lecture: Application of electrophysiological techniques in the investigation of the electric	confocal microscopy, Western blot, quantitative [real-time] PCR).
activities of living cells.	6th week:
2nd week:	Lecture: Cell and tissue culture (primary cultures, cell lines, organ cultures).
Lecture: Methods allowing the monitoring of	
the intracellular Ca2+ concentration in living	7th week:
cells.	Lecture: Isolation and identification of contractile proteins by biochemical methods.
3rd week:	
Lecture: Analysis, evaluation and interpretation	8th week:
of current recordings. Biostatistics.	Lecture: Measurements conducted on isolated ion channels: the bilayer technique.
4th week:	
Lecture: Preparation of neurones for functional	9th week:
investigation. Possible advantages and disadvantages of the applicable methods.	Lecture: tutorial
	10th week:
5th week:	Lecture: Final Assessment.
Lecture: Investigation of the signal transducing proteins at the levels of proteins, RNA or DNA (immunocytochemistry, immunohistochemistry,	

Requirements

1. Signature of Lecture Book

Lecture attendance may be followed up by the Department. The lecture will not be delivered if 5 or fewer students show up. Nevertheless, the lecture material is going to be asked in the final assessment.

For continuous updates on all education-related matters, please check the departmental web-site (http://phys.med.unideb.hu)

2. Evaluation during the semester

None.

3. Examination

At the end of the course a written final assessment will be organised in the form of multiple choice questions. The result of this assessment will determine the verification mark of the credit course using the following conversion table:

0-39.9% - Failed 40-54.9 - Pass 55-69.9% - Satisfactory 70-84.9% - Good 85-100% - Excellent

Division of Biomathematics

Subject: COMPUTER SCIENCE

Year, Semester: 1st year/1st semester, 1st year/2nd semester Number of teaching hours: Practical: **28**

1st week:	8th week:
Practical: Exemption Tests.	Practical: Spreadsheets programs, MS Excel I.
2nd week:	9th week:
Practical: Word processor programs, MS Word I.	Practical: Spreadsheets programs, MS Excel II.
3rd week:	10th week:
Practical: Word processor programs, MS Word II.	Practical: Spreadsheets programs, MS Excel III.
	11th week:
4th week: Dractical: Word processor programs MS Word	Practical: Spreadsheets programs, MS Excel IV.
machical. word processor programs, MS word	19th weeks
111.	Izui week:
54h maala	Practical: Computerised presentation, MIS
Still week:	PowerPoint.
information	13th weeks
informatics.	Drastical: Summary
(the sweet)	Plactical. Summary.
Offi week:	1 Adh swaaler
Practical: Logical and physical realization of	14th week:
networks.	Practical: Test.
7th week:	
Practical: Internet.	
Reading materials:	

Greg Perry: Microsoft Office 2007. ISBN: 9789-6396-3737-5.

Requirements

The acquisition of fundamental theoretical and practical knowledge from the function of the modern personal computers. Course description: PC architecture, operating systems, file management, network knowledge, internet and its opportunities of application, word processor, spreadsheet, the usage of presentational programs, the achievement of scientific databases and its use.

Without registration, there is no way to do the course! First year students who missed/skipped the exemption test, but signed up for the course in the Neptun must attend the course and do the final test at the end. For students attending the informatics course a maximum of 4 absences are allowed during the semester to receive a signature (we recommend to use as few as possible, in case an emergency comes up). This is taken very seriously! Missing more than 4 classes automatically means losing the chance to pass the course. There will be a final test at the end of the semester. Students are allowed to make up the missed practices with another group but only on the given week, if there are enough free seats in the room.

The course starts with an exemption test. Only first year students are allowed to write the exemption test at the first week of the given semester with their group (appointment should be checked in the given timetable). In any other cases (students older than first year/repeaters/students who are not exempted) students have a final test at week 14 of the given semester. There is no other self-control test during the semester. At the end of the course students will write a final test. The exemption and the final tests covers topics and skills in connection with Microsoft office Word, Excel, and PowerPoint (versions:2016) programs, as written in the curriculum. Both of the tests (exemption and the final test) are written tests. The tests are practical tests, conducted in the computer room. Students passing the exemption test will automatically receive grade 5 (excellent) at the end of the semester. Final grades based on the final test score will be given according to the followings: 0-60% = grade 1 (fail); 61%-70% = grade 2 (pass); 71% - 80% = grade 3 (satisfactory); 81% - 90% = grade 4; (good) 91% = grade 5 (excellent). Students should download free Office guidebooks from the internet offered at the webpage of the course (Email registration is required for downloading files). Students who did not get exemption/did not show up at the exemption test/repeaters/students older than first year MUST ATTEND on the course. They should join to one of the groups mentioned in the timetable. The number of seats is limited in the classroom. Students who has informatics course in the given appointment (according to the timetable) have priority to attend the lesson. Others are allowed to join to the given group if there are free seats. Older students have to do the whole course as well. Students passing the exemption test will automatically receive grade 5 (excellent) at the end of the semester. Students who failed the exemption test must attend the course and do the final test at the end. Students who have ECDL (European Computer Driving Licence) or are not required to write the exemption test, they should show their ECDL certificate to the educational manager of the department and they will be exempted automatically.

Division of Biophysics

Subject: MODERN BIOPHYSICAL METHODS IN BIOLOGY AND MEDICINE

Year, Semester: 2nd year/2nd semester Number of teaching hours: Lecture: 24

3rd week:	4th week:
Lecture: Luminescence spectroscopy.	Lecture: Selected applications of Magnetic
Theoretical and technical background and	Reasonace Imaging: exploitation of molecular
principles of application of fluorescence	motions.
spectroscopy. Fluorescence conjugation of	
biomolecules, techniques based on fluorescence	5th week:
resonance energy transfer.	Lecture: Modern microscopy methods for
	structural and functional characterization of cells.

Theoretical background of fluorescence	fluorescence recovery after photobleaching
microscopy and image processing Generation of	(FRAP) fluorescence correlation spectroscopy
saanning and wide field images. Detectors	(i i i i), nuorosconce contenuion specialoscopy.
scalling and wide-field images. Detectors,	
analog/digital conversion and digital storage of	8th week:
images. Digital image analysis: principles and	Lecture: Modern electrophysiological
biological applications. Principles of confocal	techniques. Passive and active electrical
microscopy High resolution non-linear ontical	properties of the cell membrane structure and
microscopy. Then resolution non-initial optical	function of ion channels. Dringinlag and
microscopy.	function of ion channels. Principles and
	application of the patch clamp technique:
6th week:	recording ionic currents and membrane potential.
Lecture: Principles and applications of flow	
cytometry Structure of a flow cytometer and its	9th week:
application fields: immunogenetics recentor and	Lecture: ISC - Laser-Scanning Cytometry
application netus. Initiatiogenetics, receptor and antigan research and diagnostics. DNA and call	(imaging externative alide based imaging
antigen research and diagnostics, DNA and cen	(imaging cytometry, since-based imaging
cycle analysis, measurement of membrane	cytometry). Limitations of flow cytometry and
potential, membrane permeability and	microscopy. Comparing flow cytometry,
determination of cytosolic pH and ion	confocal microscopy and laser-scanning
concentrations, application of fluorescence	cytometry. How does laser-scanning cytometry
resonance energy transfer to determine protein	work? Strength and limitations of the laser-
associations (FCFT)	scanning cytometry I ager scanning_cytometry in
associations. (PCLT).	seaming cytometry. Laser seaming-cytometry in
	cell blology and clinical research.
7th week:	
Lecture: Structure of the cell membrane,	10th week:
functional consequences of the mobility (lateral	Lecture: Closing test
and rotational movement) of proteins in the	
membrane Novel models for the structure of the	
cell membrane linid domains. Time-dependent	
cell membrane, lipid domains. Time-dependent	

Requirements

Aim of the course: Based on the principles covered in biophysics and cell biology discussion of problems with special relevance to medical biology from a moderm molecular biophysical and quantitative biological aspect.

Short description of the course topics:1. Application of nuclear magnetic resonance spectroscopy (NMR) and imaging (MRI) in biology and medicine 2.Luminescence spectroscopy. 3. Flow cytometry and its applications. 4. Structure of the cell membrane, mobility of lipids and proteins in the plasma membrane. 5. Advanced microscopy. 6. Modern electrophysiological techniques 7. Slide-based cytometry.

Compulsory literature: course material and lecture slides published on the website of the Department

Recommended reading: Medical biophysics (Damjanovich, Fidy, Szöllősi Eds.), Medicina, 2009;

Type of examination: practical grade, 5 levels **Requirements**:

fluorescence and phosphorescence spectroscopy,

Conditions for signing the lecture book: attending 5 lectures out of 7. Attention! Lecture books are handled exclusively by the study advisor during the dedicated office hours! *Type of examination*: practical grade, 5 levels *Examination*: Written test

Subject: CLINICAL PHYSIOLOGY

Below 50%:fail50%-59%:pass60-69 %:satisfactory70-79 %:good>= 80%:excellentRepeated/improvedexam: during the examination period, one occasion, written test.Reading materials:Damjanovich, S., Fidy, J. Szöllösi, J.: Medical Biophysics, 1st Edition. Medicina, 2009. ISBN: 978963 226 249 9.

Division of Clinical Physiology

Year, Semester: 3rd year/2nd semester	
Number of teaching hours:	
Lecture: 14	
Seminar: 20	
1st week:	
Lecture: Introduction, cellular and molecular	7th week:
factors of pathologic cardiac excitability.	Lecture: Hypertension.
	Seminar: Conduction disorders, ECG sings of
2nd week:	volume and pressure overload.
Lecture: Pathologic contractile function of the	
heart (contractile proteins, intracellular Ca2+-	8th week:
homeostasis and cardiac pumping).	Lecture: New translational perspectives in
	cardiovascular medicine.
3rd week:	Seminar: Angina pectoris, myocardial
Lecture: Myocardial ischemia, myocardial	infarction.
infarction and new ischemic syndromes	
(hibernation, preconditioning, stunning).	9th week:
Seminar: The basics of ECG.	Lecture: Stem cells in cardiovascular medicine.
	Seminar: Exercise stress test ECG, Holter ECG.
4th week:	Self Control Test (Bonus points for the exam
Lecture: Cardiac hypertrophy and failure.	can be collected during the written mid-
Seminar: ECG diagnosis of arrhythmias I.	semester clinical physiology test during the
	9th week.)
5th week:	
Lecture: Heart failure (molecular	10th week:
pathophysiology).	Lecture: Cellular and molecular elements of the
Seminar: ECG diagnosis of arrhythmias II.	respiratory system with clinical significance.
	Seminar: Electronic pacemakers, mechanisms of
6th week:	arrhythmias.
Lecture: Endothelium, smooth muscle, vessels.	
Seminar: Differential diagnostics or	11th week:
arrhythmias, evaluation of ECG recordings.	Lecture: Clinical physiology of the respiratory
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 system. Seminar: ECG signs of electrolyte disorders, differential diagnostics, practicing. 12th week: Lecture: Clinical physiology of nutrition and 	system I. 14th week: Lecture: Clinical physiology of the nervous system II. Self Control Test (Result of the 9th and 14th
Seminar: Evaluation of ECG recordings (oral ECG exam).	recommended final mark.)
Lecture: Clinical physiology of the nervous	

Requirements

Students are expected to attend lectures and obliged to attend seminars. The Department may refuse the acknowledgement of the semester from this subject if a student is absent for more than two seminars. Seminar attendance is recorded electronically during the first 5 minutes of the seminars, thereby late arrivals by 6 or more minutes result in seminar absences. A successful oral ECG test (during the 12thweek of the second semester) is also a prerequisite for Clinical Physiology. Third year students are invited to participate in two written tests ("Assessment of the work" (AW) during the 9th and 14th weeks organized by the Division of Clinical Physiology. Single choice test questions (single right or single false answers should be chosen from five possibilities) will be asked to assess students' proficiency. Bonus points can be collected for the 9th week written exam to be included into the result of the pre-final (14th week exam) and final tests (during examination period). 20 questions covering the materials of lectures and seminars between 1-9 weeks will be asked on the 9th week written self control.

Students reaching higher than passing limits will be offered by a recommended grade following the 14th week self control. This pre-final exam will contain 50 questions where the entire curriculum of Clinical Physiology will be included. The Division cannot ensure opportunities for the inspection of the corrections of the above self controls on a personal basis, nevertheless test questions can be discussed after the tests during independent events organized for all students at the same time. Students are expected to arrange this event where a minimum of 40 students should participate and to contact the academic advisor for technical support.

If a final grade cannot be recommended, written exams will be performed during the examination period. First exams and first repeated exams are in written, while the second repeated exam is in an oral. In addition students can register for an oral improvement provided they exceeded the passing limit of any written tests. There is not a special topic list for oral improvement exam, oral ECG analysis and all the materials of seminars and lectures are asked.

For more information, please visit: aok.unideb.hu/klinfiz. Login requires NEPTUN code and its password.

Faculty of Dentistry

Subject: **4-HAND TREATMENT** Year, Semester: 3rd year/2nd semester Number of teaching hours: Seminar: **10**

CHAPTER 22 TITLES OF THESES

Division of Human Surgery and Operative Techniques

 Title: Treatment options for perianal abscess Tutor: Ferenc Győry M.D.
 Title: Cell-based therapeutic options for burns
 Title: Difficult-to-treat basal cell cancer: therapeutic possibilities in the era of targeted therapies
 Title: Forehead reconstructions following skin cancer removal
 Title: The most common skin tumors in the perioral region and their treatment
 Title: Therapeutic options for dermal substitution in burns and their importance
 Title: Treatment options for scars. Current conservative, surgical or combined therapeutic strategies

Tutor: István Juhász M.D., Ph.D., C.Sc.

Division of Dental Medicine

 Title: Alcoholic liver diseases
 Title: Diagnosis and treatment of primary biliary cirrhosis
 Title: Diagnostics and therapy of chronic hepatitis B
 Title: Epidemiology, diagnostics and therapy of chronic hepatitis C
 Title: Signs, diagnostics and treatment of

portal hypertension

Tutor: István Tornai M.D., Ph.D. habil.

Division of Dental Biochemistry

 Title: Involvement of the impaired clearance of apoptotic cells in the control of insulin sensitivity
 Title: Molecular mechanisms participating in

2. Title: Molecular mechanisms participating in the clearance of apoptotic cells

3. Title: Signaling pathways mediating the effect of adenosine in the macrophage chemotaxis
4. Title: The role of apoptotic clearance in muscle regeneration

Tutor: Zsuzsa Szondy M.D., Ph.D., D.Sc.

Department of Anatomy, Histology and Embryology

1. Title: Possible applications of morphofunctional matrices for classification of neurons (computer modelling) Tutor: Ervin Wolf M.Sc., Ph.D. 2. Title: Correlation analysis of functional brain maps 3. Title: Investigation of contour integration processing in the primary visual cortex using voltage sensitive dye imaging Tutor: Zoltán Kisvárday M.Sc., Ph.D., D.Sc. 4. Title: Investigation of signalling mechanisms that regulate cartilage development and maturation Tutor: Róza Zákány M.D., Ph.D. 5. Title: Interrogation of spinal dorsal horn circuits with electrophysiological and optogenetic tools 6. Title: Light- and electron microscopy level analysis of the axons and axon collaterals of spinal lamina I projection neurons 7. Title: Local synaptic connections of projection neurons in spinal lamina I 8. Title: Morphometric analysis of excitatory and inhibitory interneurons in the spinal dorsal horn Tutor: Péter Szücs M.D., Ph.D. 9. Title: Extracellular matrix in the developing brainstem Tutor: Ildikó Wéber M.Sc., Ph.D. 10. Title: Matrix metalloproteases in vestibular lesion Tutor: Botond Gaál M.Sc., Ph.D. 11. Title: Investigation of neuronal network development in the spinal cord Tutor: Zoltán Mészár M.Sc., Ph.D. 12. Title: The role of the molecular clock in healthy and osteoarthritic chondrocytes Tutor: Csaba Matta M.Sc., Ph.D. 13. Title: Role of PACAP signalling in cartilage differentiation and regeneration

Tutor: Tamás Juhász M.Sc., Ph.D.

14. Title: Distribution of the extracellular matrix in the red nucleus and pararubral area Tutor: Éva Rácz M.Sc., Ph.D.

15. Title: The endocannabinoid-mediated M.H.A.Sc. modulation of spinal nociception 12. Anti-inflammatory effects of arsenic-trioxide 16. Title: The role of astrocytes in spinal pain (As2O3) on differentiated acute promyelocytic leukemia (APL) cells processing Tutor: Zoltán Hegyi M.Sc., Ph.D. Tutor: Károly Jambrovics M.Sc., Ph.D. 17. Title: Quantitative morphological studies of 13. Title: Metabolomic analyses in diabetes primary afferent-motoneuron connections in the 14. Title: Analysis of hemoglobin forms in frog's brainstem pathologic states Tutor: András Birinyi M.Sc., Ph.D. Tutor: Gergő Kalló M.Sc., Ph.D. 18. Title: Role of pro-inflammatory cytokines in 15. Title: The effect of coeliac disease patientneuron-glia interaction during inflammatory pain derived auto-antibodies on transglutaminase 2 activity and interactome. states 16. Title: Translational research focusing on the Tutor: Krisztina Holló M.Sc., Ph.D. 19. Title: Mapping of synapses on dendrites of structure-function relationship of GABAergic neuron subtypes in the cerebral transglutaminases cortex Tutor: Róbert Király M.Sc., Ph.D. Tutor: Petra Talapka Ph.D. 17. Title: Involvement of impaired apoptotic cell clearance in the development of insulin resistance **Department of Biochemistry and** Tutor: Krisztina Köröskényi M.Sc., Ph.D. **Molecular Biology** 18. Title: Novel molecular hubs of the browning 1. Title: The role of tissue transglutaminase in program in different types of adipose tissue the differentiation of leukocytes Tutor: Endre Kristóf M.D., Ph.D. 2. Title: Characterization of the nuclear tissue 19. Title: Exploring the role of cell surface transglutaminase receptors in mediating viral infection 3. Title: The effect of tissue transglutaminase-Tutor: Mohamed Faisal Mahdi M.D., Ph.D. deficient states on the metabolism of 20. Title: Human enzymes being similar to those differentiating and terminally differentiated NB4 of retroviruses (e.g. HIV virus): enzymatic neutrophil granulocytes studies on human proteolytic enzymes Tutor: Zoltán Balajthy M.Sc., Ph.D. 21. Title: Biochemical characterization of the 4. Title: Bioinformatic meta-analysis of ChIP-seq human homologs of retroviral capsid proteins and ChIA-PET datasets to understand the Tutor: János Mótván M.Sc., Ph.D. regulation of transcriptional units 22. Title: Analysis of the regulatory elements of 5. Title: Assembly and analysis of the reference the macrophage genome using next generation genome for the diploid domestic rabbit using sequencing data PacBio and 10X Chromium sequencing data Tutor: Gergely Nagy M.Sc., Ph.D. Tutor: Endre Barta M.Sc., Ph.D. 23. Title: The role of the BACH1 transcription 6. The analysis of the inflammatory response and factor in macrophages and tissue homeostasis the regulation of gene expression in tissue Tutor: László Nagy M.D., Ph.D., M.H.A.Sc. resident and bone marrow-derived macrophages. 24. Title: Role of adenosine receptors in the Tutor: Pál Krisztián Bene M.Sc., Ph.D. skeletal muscle regeneration 7. Title: Proteomic analyses in diabetes 25. Title: Phagocytosis and/or myoblast fusion 8. Title: System biology approaches to diabetes Tutor: Zsolt Sarang M.Sc., Ph.D. 9. Title: Analysis of protein interaction networks 26. Title: Characterization of the genetic risk 10. Title: Metabolomic analysis of saliva factors for chronic pancreatitis Tutor: Éva Csősz M.Sc., Ph.D., D.Sc. Tutor: András Szabó M.Sc., Ph.D. 11. Title: Determining the activation and the 27. Title: Differentiation of dendritic cells and browning potential from human adipose tissue macrophages from embryonic stem cells biopsies 28. Title: Transcriptional programming of Tutor: László Fésüs M.D., Ph.D., D.Sc.,

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dendritic cells

29. Title: Transcriptional programming of embryonic stem cell-derived myeloid cells Tutor: István Szatmári M.Sc., Ph.D.
30. Title: Potential role of GDF-3 cytokine in the thymus
31. Title: Skeletal muscle regeneration in the absence of the GDF-3 cytokine Tutor: Zsuzsa Szondy M.D., Ph.D., D.Sc.
32. Title: Inflammatory mediator response to rexinoids in breast epithelial cells
33. Title: Bromodomain-containing chromatinassociated factors as chemopreventive targets Tutor: Iván Uray M.D., Ph.D.

Department of Biophysics and Cell Biology

1. Title: Interference of of chelidonine with STAT3 signaling in human T lymphoma cells Tutor: Andrea Dóczy-Bodnár 2. Title: Pharmacology of ion channels. Tutor: Ferenc Papp 3. Title: Investigation of direct ligand-like effects of cyclodextrins on KV7.4 ion channel Tutor: Florina Zákány 4. Title: Studying the inactivation of voltage gated potassium ion channels in heterologous expression systems. Tutor: György Panyi 5. Title: Studying nuclear receptor function by modern microsocpy techniques Tutor: György Vámosi 6. Title: Intracrine signaling by membrane receptors Tutor: György Vámosi 7. Title: Characterizing the corneal limbal stem cell ninche and organoids produced for its regeneration. Tutor: György Vereb 8. Title: Measuring molecular interactions for histopathological diagnosis Tutor: György Vereb 9. Title: Optimizing CAR (chimeric antigen receptor) - transduced immune cells for tumor therapy Tutor: György Vereb 10. Title: Elucidation of the catalytic mechanism of ABC transporters Tutor: Katalin Goda

11. Title: Study of ion channels pharmacology with animal venoms Tutor: Péter Hajdu 12. Title: Role of T cell ion channels in tumor cell elimination Tutor: Péter Hajdu 13. Title: Quantitative investigation of the associations of ErbB proteins using biophysical and molecular biological methods Tutor: Péter Nagy 14. Title: How do cell penetrating peptides cross the cell membrane? Tutor: Péter Nagy 15. Title: Examination of the membrane dipole potential in hypercholesterolemic mice Tutor: Tamás Kovács 16. Tile: Cytometry of cytotoxic lymphocytes Tutor: Zsolt Bacsó 17. Title: Physiological roles of the multidrug resistance transporter P-glycoprotein. Tutor: Zsolt Bacsó 18. Title: Functional characterization of de novo ion channel mutations in epilepsy Tutor: Tibor G. Szántó 19. Title:Investigation of the inhibitory mechanism of NaV channels by 5-chloro-2benzimidazole (ClGBI) Tutor: Tibor G. Szántó 20. Title: Pharmacological studies on KV1.3 ion channel. Tutor: Tibor G. Szántó 21. Title: Studying the interdomain communication in ABCG2 Tutor: Katalin Goda

Department of Anesthesiology and Intensive Care

 Title: Experimental testing of the neuromuscular junction
 Tutor: Ákos Fábián M.D., Ph.D.
 Title: Preemptive and preventive analgesia
 Tutor: Béla Fülesdi M.D., Ph.D., D.Sc.
 Title: The role of hypotermia in neuroprotection
 Tutor: Csilla Molnár M.D., Ph.D.
 Title: Clinical studies in the field of neuromuscular block and its reversal
 Tutor: Adrienn Pongrácz M.D., Ph.D.

Department of Biomaterials and	22. Title: Detailed demonstration of the
Prosthetic Dentistry	contraindications of dental implants
1. Title: Temporomandibular disorders and splint	Tutor: Rita Mohácsi D.M.D.
therapy	
2. Title: Physiotherapy of craniomandibular	Department of Behavioural Sciences
disorders	1. Title: Medicalization
Tutor: Tünde Radics D.M.D., Ph.D.	Tutor: Sándor Kőmüves M.A., Ph.D.
3. Title: Emergence profile	2. Title: Bioethical and biopolitical challenges of
Tutor: István Lampé M.D., L.D.S.	modern health care (Faculty of Medicine)
4. Title: Functional fillers in dental composites	3. Title: Ethical and health policy aspects of the
5. Title: Experimental dental composites, what is	research and clinical use of controlled substances
the direction of the development of modern	(Faculty of Medicine)
esthetic dental filling materials?	Tutor: János Kristóf Bodnár M.A., Ph.D.
6. Title: Polymers can replace metals in dentistry	4. Title: Biopolitical and bioethical approaches to
7. Title: Polymers with antibacterial effect	modern health problems
Tutor: Katalin Bukovinszky D.M.D.	5. Title: Ethical issues of science and technology
8. Title: CAD-CAM systems in partial removable	6. Title: Gender issues in biopolitics and
prosthodontics	bioethics
Tutor: Tamás Bistey D.M.D., Ph.D.	7. Title: Questions of modern environmental
9. Title: Possibilities of removing of different	ethics
Dental posts	Tutor: Szabina Péter Ph.D.
10. Title: Restoration of structurally	8. Title: Medical communication, patient
compromised teeth	satisfaction
Tutor: Anita Pétercsák D.M.D.	9. Title: Psychological aspects of somatic
11. Title: Application of pulp derived stem cells	diseases
in dentistry	Tutor: Eszter Tisljár-Szabó M.A. Ph.D.
12. Title: Growth factors involved in osteogenic	
differentiation and their application in dentistry	Division of Cardiac Surgery
Tutor: Edit Hrubi D.M.D.	1. Title: Literature review of the intracardiac
13. Title: Electrospinning applicability in	tumors
dentistry (SSS)	Tutor: Akos Attila Berczi M.D.
14. Litle: Roles of initiators in 3D printing (SSS)	2. Title: The off- label use of the sutureless
Iutor: Jozsef Bako M.Sc., Ph.D.	biological aorthic valve prosthesis
15. The Application of gold patchy sinca	Tutor: Péter Csizmadia M.D
particles in dental resin matrix (SSS)	3. Non-occlusive mesenteric ischaemia after
free energy of regin based dental composite	cardiac surgery-review of the literature
17 Title: Propagation and characterization of 2D	Tutor: Tamas Debreceni M.D.
rintable rosin (SSS)	4. Litle: Mid-term results of transcatheter aortic
Tutor: Melinda Szalóki M Sc. Dh D	valve implantations - review of the literature
18 Title: Resin matrix ceramics in dentistry	1 utor: 1 amas Maros M.D.
10. Title: Preparation designs of ceramics inlaws	5. The Sutureless acruc valve implantation -
onlavs overlavs	rewlew of the interature
Tutor: Gábor Suta D M D	C Title: Depulta of operations of corta
20 Title: Physiotherany in the management of	o. The results of operations of aoria
CMD	Tutor: Tamás Szerafin M.D. Dh.D.
Tutor: Márton Suta D M D	
21. Title: Digital smile designing	
Tutor: Boglárka Berta D.M.D.	

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Department of Public Health and Epidemiology

1. Title: 1. Migration of health workers in the European Union with a focus on regulation 2. Mutual recognition of diplomas in the European Union: a historical overview 3. Prevention and management of diabetes in the EU Member States, with reference to regulation 4. The burden of diabetes in the EU Member States 5. Burden of disease of complications of diabetes mellitus in the EU Member States

Tutor: Orsolya Varga M.D., Ph.D. habil. 2. Title: 1. Mental health of youth 2.

Interventions to improve the mental health of youth 3. Mental health of health care workers 4. Interventions to improve the mental health of health care workers 5. Relationship between health literacy and health status (only for dentist students) 6. Relationship between health literacy and medication adherence (only for pharmacist students)

Tutor: Éva Bíró M.D., Ph.D.

3. Title: 1. Sociodemographic, environmental and lifestyle determinants of obesity 2. The effect of neighborhood environment on physical activity and diet 3. The effect of dietary interventions on the risk of chronic non-communicable diseases 4. Use of Healthy Eating index for the characterization of diet quality 5. Prevalence and determinants of dietary supplement use (only for pharmacist students) 6. Patterns and correlates of anabolic androgenic steroid use (only for pharmacist students) 7. Associations between diet quality and dental caries (only for dentist students) 8. Socioeconomic and lifestyle determinants of dental caries (only for dentist students)

Tutor: Helga Bárdos M.D., M.Sc., Ph.D. 4. Title: 1. Contaminants of traditional Chinese and Indian medicines 2. Morbidity and mortality from oral cavity cancers in selected European countries 3. Toxicology of fluorides 4. Effect of smoking on drug metabolism 5. Toxicology of zinc

Tutor: Sándor Szűcs M.Sc., Ph.D.

5. Title: 1. Conducting systematic review on selected diagnostic research topics 2. Conducting systematic review on selected prognostic research topics 3. Conducting systematic review

on selected intervention research topics Tutor: Szilvia Fiatal M.D., Ph.D. 6. Title: 1. Evaluation of chronic care for adult overweighted in general medical practice 2. Evaluation of chronic care for adult smokers in general medical practice 3. Evaluation of chronic care for diabetes mellitus in general medical practice 4. Evaluation of chronic care for hypertension in general medical practice 5. Social inequalities in health 6. Disease burden of rare diseases 7. Evaluating effectiveness of population based screenings 8. Nutritional habit in the first trimester of pregnancy Tutor: János Sándor M.D., Ph.D.

7. Title: 1. Assessment of health risks of microand nano-encapsulated plant protection products: a systematic literature review 2. Investigation of the DNA damaging potential of plant protection products using genotoxicological methods 3. Comparative assessment of the cytotoxic effect of glyphosate and glyphosate based herbicides 4. Assessment of health risks of micro- and nanoencapsulated plant protection products: a systematic literature review 5. Assessment of ergonomic risk factors among workers in different professions

Tutor: Károly Nagy M.Sc. Ph.D.

8. Title: 1. Alcohol consumption and human immunodeficiency virus infection 2. Pharmacological treatment of alcohol use disorders 3. Alcohol use by adolescents in Europe between 1993 and 2019 4. Alcohol use in the European Union 5. Health effects of flame retardants

Tutor: László Pál Ph.D.

9. Title: 1. Analyses of workforce crisis in Hungarian general practices 2. Frequency of influenza vaccination among chronic diseased patients in Hungary: A general practice based investigation

 Frequency of influenza vaccination among the elderly: A general practice based investigation 4. Impact of COVID-19 pandemic on stroke and AMI frequency in Hungary 5. Impact of COVID-19 pandemic on pregnancy outcomes Tutor: Ferenc Vincze M.Sc., Ph.D.
 Title: 1. Investigation of the global burden of chronic non-communicable diseases 2.

Investigation of the global burden of chronic

non-communicable diseases regarding socioeconomic development 3. Trends in mortality from non- communicable diseases 4. Prevalence of complications due to diabetes mellitus in Europe 5. Socioeconomic determinants of diabetes mellitus complications across Europe Tutor: Nóra Kovács M.Sc., Ph.D. 11. Title: 1. Health and health behaviour of adolescents 2. Problematic internet use among adolescents 3. Health promotion opportunities among school-aged children Tutor: Gabriella Pénzes M.Sc., Ph.D. 12. Title: 1. The public health aspects mental disorders 2. Screening and treatment methods of hazardous and harmful patterns of alcohol consumption 3. Suicide prevention strategies 4. The public health aspects of childhood mental disorders Tutor: Judit Diószegi, M.D., Ph.D. 13. Title: 1. Exposure to volatile organic compounds in healthcare settings Tutor: Szabolcs Lovas, MSc., PhD 14. Title: 1. The problem of therapy resistance in cancer Tutor: István Szász, MSc., Ph.D. 15. Title: 1. Genetic alteration and gene expression modulation during cancer progression Tutor: Viktória Koroknai, MSc., Ph.D.

Division of Cardiology

1. Title: Less invasive measurement of coronary macro- and microvascular function Tutor: Zsolt Kőszegi M.D., Ph.D. 2. Title: The importance of hydrostatic pressure during invasive intracoronary physiological measurements Tutor: Áron Üveges M.D. 3. Title: Evaluation of the effect of pulmonary veins on left atrial appendage flow in atrial fibrillation patients undergoing cryoablation Tutor: László Tibor Nagy M.D., Ph.D. 4. Title: Comparision of preprocedural transoesophageal and intracardiac echocardiographic parameters in atrial fibrillation patients undergoing cryoablation Tutor: László Tibor Nagy M.D., Ph.D. 5. Title: Pericardial fat tissue 6. Title: Safety antidiabetic therapy Tutor: Tibor Fülöp M.D., Ph.D.

7. Title: Structural interventions in cardiology Tutor: Attila Kertész M.D., Ph.D. 8. Title: Pre-TAVI investigations - CT in focus. 9. Title: The role of cardiac-CT - general overview. Tutor: Rudolf Kolozsvári M.D., Ph.D. 10. Title: Novel approaches in the treatment of acute and chronic heart failure Tutor: Attila Borbély M.D., Ph.D. 11. Title: Assessment of the right heart side by 3D echocardiography 12. Title: The role of 3D echocardiography in mitral valve disease Tutor: Csaba Jenei M.D. 13. Title: The practice of echocardiography among cancer patients Tutor: Dániel Czuriga M.D., Ph.D. 14. Title: Comparison of STEMI and NSTEMI cases after primary PCI: the role of secondary prevention Tutor: László Fülöp M.D., Ph.D. 15. Title: Efficacy of platelet aggregation inhibitors after acute coronary syndrome 16. Title: Vascular disease in patients post myocardial infarction Tutor: Orsolya Tímár M.D., Ph.D. 17. Title: Vascular alterations in patients with previous acute coronary syndrome Tutor: Osrolya Tímár M.D., Ph.D. 18. Title: Atrial fibrillation and new oral anticoagulant therapy Tutor: Gábor Kolodzev M.D. 19. Title: Gestational hypertension management at the Department of Cardiology, University of Debrecen. Tutor: Alexandra Kiss M.D., Ph.D. Division of Clinical Physiology

 Title: Improvement of myocardial inotropy under physiological and pathological conditions Tutor: Zoltán Papp M.D., Ph.D., D.Sc.
 Title: The role of angiotensin II in cardiovascular diseases
 Title: Vascular alterations leading to hypertension.
 Tutor: Attila Tóth M.Sc., Ph.D., D.Sc.
 Title: Angiotensin converting enzymes in the laboratory diagnostics

5. Title: Endogenous regulation of the renin-**Department of Human Genetics** angiotensin-aldosterone system and its clinical 1. Title: Transcriptional regulation of immune significance responses. Tutor: Miklós Fagyas M.D., Ph.D. Tutor: Lajos Széles M.Sc., Ph.D. 2. Title: Analysis of mono-ADP-ribosylated proteins from pro- and eukaryotic cells. **Division of Nuclear Medicine and** Tutor: András Penyige M.Sc., Ph.D. **Translational Imaging** 3. Title: Analysis of miRNA profile in tissue and 1. Title: Importance of FDG PET/CT in plasma samples of glioblastoma patients. cardiology Tutor: Zsuzsanna Birkó M.Sc., Ph.D. 2. Title: Metabolic parameters in correlation with 4. Title: Application of genome editing with the different oncological therapies CRISPR-Cas9 system in the treatment of genetic 3. Title: Targeted radionuclide therapies in diseases. metastatic prostate cancer Tutor: Krisztina Szirák M.Sc., Ph.D. 4. Title: Targeted radionuclide therapies in 5. Title: Overview of the background of an neuroendocrin tumors arbitrary genetic disorder. Tutor: Ildikó Garai M.D., Ph.D. 6. Title: Overview of the genetic background 5. Title: In vivo imaging of preclinical animal influencing the pharmacokinetics and models using tumor-specific pharmacodynamics of a drug. radiopharmaceuticals Tutor: Judit Keserű M.Sc., Ph.D. Tutor: György Trencsényi M.Sc., Ph.D. 7. Title: Studying the expression of miR-184, miR-194-5p and miR-203a-3p in Wilms' tumor **Division of Radiology and Imaging** samples. Science Tutor: Gergely Buglyó M.D., Ph.D. 1. Title: Functional MRI Investigations in 8. Title: Cell-free nucleic acids as liquid biopsy Internet Gaming Addiction Disorder biomarkers for diagnosis and treatment of Tutor: Attila Mátyás Petró M.D. diseases. 2. Title: AI in acute stroke treatment 9. Title: Exosomes, as possible biomarkers. Tutor: Róbert Rostás M.D. 10. Title: Study the role of non-coding RNAs in 3. Title: Imaging of axial spondylarthritis cancers. Tutor: Márton Oláh M.D. Tutor: Beáta Soltész M.Sc., Ph.D. 4. Title: The effect of prenatal ultrasound on the 11. Title: Study the role of microRNAs in development of neurons ovarian cancer. Tutor: Bence Pelyvás M.D. Tutor: Melinda Szilágyi-Bónizs M.Sc., Ph.D. **Department of Medical Imaging Department of Immunology** 1. Title: Posttherapeutic I-131 whole body 1. Title: The role of the HOFI/SH3PXD2B SPECT/CT in patients with thyroid cancer adaptor protein in the regulation of the tumor 2. Title: The role of Tc99m-Tektrotyd SPECT/CT microenvironment to evaluate metastatic neuroendocrine tumors Tutor: Árpád Lányi M.Sc., Ph.D. Tutor: Ildikó Garai M.D., Ph.D. 2. Title: The role of innate immune cells in the 3. Title: Endovascular Aortic Aneurysmk Repair development of allergic responses Tutor: István Lázár M.D. 3. Title: The role of innate lympoid cells (ILC) in 4. Title: Characteristics of acute endovascular human diseases stroke treatment with and without intravenous Tutor: Attila Bácsi M.Sc., Ph.D., D.Sc. thrombolysis 4. Title: Possible use of non-polimorphic MHC-Tutor: Balázs Kis M.D. like CD1 molecules in diagnotstics. Tutor: Péter Gogolák M.Sc., Ph.D. 5. Title: Investigation of phytocannabinoid

effects on human monocyte-derived dendritic cells

6. Title: Investigation of transient receptor potential channels on human monocyte-derived dendritic cells

Tutor: Attila Szöllősi M.D., Ph.D.

 7. Title: Identification of new viral senzors and new regulatory mechanisms in the antiviral responses of human dendritic cells
 8. Title: Role of dendritic cells in the development of autoimmune diseases Tutor: Kitti Pázmándi M.Sc., Ph.D.
 9. Title: Study of non-apoptotic cytotoxic processes during immune response, new way of killing apoptosis resistant tumor cells Tutor: Gábor Koncz M.Sc., Ph.D.

Department of Clinical Oncology

1. Title: Prognostic factors in colorectal cancer Tutor: Csilla András M.D., Ph.D. habil. 2. Title: Treatment modalities in pancreas cancer Tutor: Péter Árkosy M.D., Ph.D. habil. 3. Title: Current treatment of metastatic bladder cancer 4. Title: Treatment options of metastatic castration-resistant prostate cancer Tutor: Balázs Juhász M.D. 5. Title: (P)rehabilitation in oncology 6. Title: Supportive care in oncology Tutor: Andrea Furka M.D., Ph.D. habil. 7. Title: Cardiological side effects of fluorouracyl in oncological patients Tutor: Anita Árokszállási M.D., Ph.D. 8. Title: Palliation in oncology Tutor: Éva Szekanecz M.D., Ph.D. 9. Title: Epigenetic control of chemopreventive drug action by bromodomain-containing chromatin readers 10. Title: Studies on serotonylated proteins in tumor cells 11. Title: The role of antimicrobial peptides in the interaction of breast cancer cells and macrophages Tutor: Iván Uray M.D., Ph.D., med. habil. 12. Title: Prognostic factors in low grade and high grade gliomas 13. Title: Treatment options in advanced and metastatic breast cancer Tutor: József Virga M.D., Ph.D.

Department of Laboratory Medicine

1. Title: Evaluation of known and novel autoantibodies in the diagnostics of autoimmune and immune-mediated disorders 2. Title: Identification of novel biomarkers for the detection and prediction of cirrhosis associated infections Tutor: Péter Antal-Szalmás M.D., Ph.D. 3. Title: Vitamin D status in colorectal carcinoma Tutor: Harjit Pal Bhattoa M.D., Ph.D. 4. Title: Cytogenetic aberrations in infertility 5. Title: Genetic examinations in t(12;21)positive childhood acute lymphoblastic leukemia Tutor: Anikó Ujfalusi M.D., Ph.D. 6. Title: Analysis of serum human epididymis protein 4 (HE4) in the follow-up of cystic fibrosis patients 7. Title: Investigation of platelet microRNA expressions in septic conditions Tutor: Béla Nagy Jr. M.D., Ph.D.

Division of Clinical Laboratory Science

1. Title: Effect of alfa2-plasmin inhibitor heterogeneity on the risk of thrombosis 2. Title: Method development for the detection of various antithrombin isoforms Tutor: Éva Katona M.Sc., Ph.D. habil. 3. Title: Inherited hemostasis disorders; laboratory and molecular genetic aspects 4. Title: Laboratory monitoring of the new generation oral anticoagulants Tutor: Zsuzsanna Bereczky M.D., Dr. habil., Ph.D. 5. Title: Characterization of the heparinantithrombin interaction with surface plasmon resonance 6. Title: New methods for investigating the interactions of blood coagulation proteins Tutor: Krisztina Pénzes-Daku M.Sc., Ph.D. 7. Title: Next-generation sequencing in rare, inherited coagulation diseases Tutor: Réka Gindele M.Sc., Ph.D. 8. Title: COVID-19 associated coagulopathy in pregnancy 9. Title: Fibrinolytic marker levels and polymorphisms in inflammatory bowel diseases

polymorphisms in inflammatory bowel diseases 10. Title: Investigation of fibrinolytic markers on the outcome of thrombolytic therapy in patients with ischaemic stroke Tutor: Zsuzsa Bagoly M.D., Dr. habil., Ph.D.

Department of Oncoradiology

 Title: Investigation of lung tumour trajectory based on retrospective 4DCT
 Tutor: Mihály Simon
 Title: Clinical aspects of radiosurgery
 Tutor: Árpád Kovács M.D., Ph.D. habil.
 Title: The role of 4D CT in radiation therapy.
 Tutor: Erika Szántó M.D.
 Title: Comparative analysis of 3D conformal and intensity-modulated locoregional breast irradiation
 Tutor: Mária Besenyői M.D.

Department of Dermatology

1. Title: Ablative laser treatment in Hailey-Hailey disease 2. Title: DNA repair mechanisms 3. Title: Indications in ablative Er: YAG laser 4. Title: Methods of sunprotection Tutor: Éva Remenyik M.D., Ph.D., D.Sc. 5. Title: Dermatofibrosarcoma protuberans therapeutic possibilities 6. Title: Possibilities of skin grafting in the reconstruction of defects after removal of skin fumors 7. Title: Role of NPWT (Negative Pressure Wound Therapy) in the treatment of burns 8. Title: Role of hatchet flap plasty in the reconstruction of defects after removal of skin tumors Tutor: István Juhász M.D., Ph.D., C.Sc. 9. Title: Deformities and discolorations of the nails: relation to other medical conditions. Overview of the literature and case reports. Tutor: Éva Szabó M.D., Dr. habil., Ph.D. 10. Title: Different applications of the latissimus dorsi musculocutaneous flap Tutor: Zoltán Péter M.D. 11. Title: Characteristics of chronic urticaria analysing our patients' data 12. Title: Methotrexate use in psoriasis – the diagnosis of liver fibrosis as a possible side effect

Tutor: Krisztián Gáspár M.D., Dr. habil., Ph.D. 13. Title: Lipid disorder associated dermatological symptoms 14. Title: Pathogenesis and therapy of acne 15. Title: Role of lipid environment in the activation of dermal macrophages Tutor: Dániel Törőcsik M.D., Dr. habil., Ph.D. 16. Title: Application of photodynamic therapy for multiple actinic keratoses 17. Title: Application of photodynamic therapy for non-melanoma skin tumours 18. Title: New treatment protocols for photodynamic therapy 19. Title: Photodynamic therapy for acne and acne scars Tutor: Emese Gellén M.D., Ph.D. 20. Title: Drug hypersensitivity reactions: types and diagnostic approach 21. Title: Penicillin allergy: diagnostics and management 22. Title: Psoriasis therapy and family planning 23. Title: Psoriasis treatment options in patients with cancer 24. Title: Treatment options of therapy resistant urticaria Tutor: Irina Sawhney M.D. 25. Title: Merkell cell carcinoma-pathogenesis, diagnosis and treatment options Tutor: Gabriella Emri M.D., Dr. habil., Ph.D. 26. Title: New therapies in severe psoriasis vulgaris 27. Title: Omalizumab therapy in chronic urticaria Tutor: Andrea Szegedi M.D., Ph.D., D.Sc. 28. Title: Development and investigation of benign and malignant skin tumor derived cell cultures and co-cultures Tutor: Imre Lőrinc Szabó M.D., Ph.D. **Department of Medical Chemistry** 1. Title: Investigation of Ser/Thr protein phosphatase in pathogenic fungi (literature review) Tutor: Viktor Dombrádi M.Sc., Ph.D., D.Sc. 2. Title: Interaction of protein phosphatase 1 catalytic subunit with regulatory proteins Tutor: Ferenc Erdődi M.Sc., D.Sc. 3. Title: Regulation of macrophage activation

Tutor: László Virág M.D., Ph.D., D.Sc.

4. Title: Study of metabolic processes with special regard to the involvement of mitochondrial activity.

Tutor: Péter Bay M.Sc., Ph.D., D.Sc.

5. Title: Application of High-Content Imaging papillomaviruses technology in Life Sciences Tutor: György Veress M.Sc., Ph.D. 7. Title: Laboratory diagnosis of hepatitis E virus Tutor: Endre Kókai M.Sc., Ph.D. 6. Title: Overcoming insulin resistance by infection SMTNL1-mimicking peptide 8. Title: The roles of non-coding RNA molecules 7. Title: Signalling pathways in endometriosis in infectious diseases Tutor: Beáta Lontay M.Sc., Ph.D. Tutor: Brigitta László M.Sc., Ph.D. 8. Title: Inhibition of sodium-glucose 9. Title: Phylogenetic and functional analysis of cotransporter of kidney by glucose-based sequence variation of high-risk human compounds also interfering with glycogenolysis papillomaviruses Tutor: Eszter Gyöngyösi M.Sc., Ph.D. Tutor: Tibor Docsa M.Sc., Ph.D. 9. Title: Regulation of protein phosphatase 10. Title: The examination of biology of microbial biofilms expression and activity in tumour cells Tutor: Andrea Kiss M.Sc., Ph.D. Tutor: Renátó Kovács M.Sc., Ph.D. 10. Title: High-Throughput Screening Tutor: Csaba Hegedűs M.D., L.D.S., Ph.D. **Department of Internal Medicine** 11. Title: Autophagy in physiological and 1. Title: Immunotherapy of B cell lymphomas. pathological processes 2. Title: Safety profile of prolonged rituximab Tutor: Katalin Kovács M.Sc., Ph.D. therapy in lymphomas. 12. Title: Posttranslational modifications of the 3. Title: Targeted therapy in non-Hodgkin's mitochondrial fission protein Drp1 and their role lymphomas on mitochondrial morphology. Tutor: Lajos Gergely M.D., D.Sc. 13. Title: The effect proteasomal inhibition in 4. Title: Lipid abnormalities in hypothyreoidism. Huntington's disease. 5. Title: The function of LDL in lipid metabolism Tutor: Krisztina Tar M.Sc., Ph.D. Tutor: György Paragh M.D., Ph.D., D.Sc. 14. Title: The effects of bacterial metabolites on 6. Title: Diagnostic tests and imaging techniques intestinal motility. in endocrinology. 15. Title: The role of HCN2 inhibition in the Tutor: Endre Nagy M.D., Ph.D., D.Sc. development of ileus. 7. Title: Lp(a) as a cardiovascular risk factor 16. Title: The role of mechanotransduction in the 8. Title: Therapeutic strategies in hyperupregulation of CXCL1 in the small intestine lipoproteinemia(a) Tutor: Karen Uray M.Sc., Ph.D. Tutor: Mariann Harangi M.D., Ph.D. habil. 9. Title: Differential diagnosis in Graves' **Department of Medical Microbiology** orbitopathy 1. Title: Antimicrobial cell-mediated immunity 10. Title: New treatment opportunities in Graves' measured by mRNA tests orbitopathy Tutor: József Kónya M.D., Ph.D., D.Sc. Tutor: Annamária Erdei M.D., Ph.D. 2. Title: Evaluation of fungicidal effect of 11. Title: Adipokines and Insulin Resistance antifungal agents using time-kill curves 12. Title: Insulin resistance and non-alcoholic 3. Title: New and older agents in antifungal fatty liver disease chemotherapy 13. Title: Obesity: Diagnosis and Treatment Tutor: László Majoros M.D., Ph.D. 14. Title: Obesity: Etiology and Co-morbidities 4. Title: Prevalance of human polyomaviruses Tutor: Péter Fülöp M.D., Ph.D. habil. Tutor: Eszter Csoma M.Sc., Ph.D. 15. Title: Cardiovascular risk modification in 5. Title: Effects of human papillomavirus CKD patient oncoproteins on cellular signaling pathways in Tutor: Réka P. Szabó M.D., Ph.D. 16. Title: Diabetic neuropathy and oxidative keratinocytes Tutor: Anita Szalmás M.Sc., Ph.D. stress 6. Title: Intratype variation of human Tutor: Ferenc Sztanek M.D., Ph.D.

17. Title: Familiar antiphospholipid syndrome 43. Title: Bacterial infection in liver cirrhosis Tutor: Pál Soltész M.D., Ph.D., D.Sc. 44. Title: Clinical significance of chronic 18. Title: Autoimmune disorders and GI tract pancreatitis Tutor: Zsolt Barta M.D., Ph.D. 45. Title: Current therapeutic options of acute 19. Title: Ischemic colitis. pancreatitis 20. Title: Life quality of Raynaud syndrome Tutor: Zsuzsa Vitális M.D., Ph.D. 21. Title: Sarcopenia in chronic diseases 46. Title: Philadelphia negative chronic 22. Title: Therapeutic options for sarcopenia myeloproliferative neoplasms - novel genetic and Tutor: Zoltán Csiki M.D., Ph.D. therapeutic improvements 47. Title: Recent advances in the management of 23. Title: The disease course after stent inplantation in peripheral arterial disease chronic ITP Tutor: György Kerekes M.D., Ph.D. Tutor: Péter Batár M.D., Ph.D. 24. Title: Novel therapeutical approaches in 48. Title: Are the bacterial infections predictable multiple myeloma in liver cirrhosis? 25. Title: The impact of multi-drug resistance 49. Title: Role of serological markers in genes in the prognosis of lymphoproliferative prediction of disease course and response to therapy in inflammatory bowel diseases. disorders Tutor: László Váróczy M.D., Ph.D. habil. Tutor: Mária Papp M.D., Ph.D., D.Sc. 26. Title: Inherited and acquired thrombophilia 50. Title: Kidney pathology and outcomes in 27. Title: New direct oral anticoagulants **ANCA-Associated Vasculitis** 28. Title: Stem cell therapy in peripheral arterial 51. Title: Long-term outcomes in elderly patients disorders with ANCA-associated vasculitis Tutor: Ibolya File M.D. Tutor: Zoltán Boda M.D., Ph.D., D.Sc. 29. Title: Gastric cancer: clinics and treatment 52. Title: Gastoesophageal reflux disease Tutor: László Dávida M.D. 30. Title: Gastrointestinal biceding 31. Title: Gluten sensitive enteropathy 32. Title: Inflammatory bowel diseases. **Department of Pathology** 33. Title: Lymphomas in the gastrointestinal 1. Title: Functional analysis of malignant tract lymphomas using image analysis Tutor: István Altorjay M.D., Ph.D., D.Sc. 2. Title: Mitotic failures and cancer progression 34. Title: Epidemiology, diagnostics and therapy 3. Title: Molecular diagnostics of solid tumors of chronic hepatitis C Tutor: Gábor Méhes M.D., D.Sc. 35. Title: Pathomechanism of alcoholic hepatitis 4. Title: Head and Neck region squamous cell 36. Title: Signs, diagnostics and treatment of carcinoma portal hypertension. 5. Title: Salivary gland neoplasms 37. Title: Therapeutic options in primary Tutor: Tamás Csonka M.D., Ph.D. sclerotizing cholangitis 38. Title: Treatment of autoimmune hepatitis Department of Pharmacology and Tutor: István Tornai M.D., Ph.D. habil. **Pharmacotherapy** 39. Title: A case history of an interesting acute 1. Title: Cardiovascular risk factors myeloid leukaemia patient in the 2nd Department 2. Title: Metabolic link between obesity and of Medicine (connection with the literature data) insulin resistance Tutor: Attila Kiss M.Sc., Ph.D. habil. Tutor: Zoltán Szilvássy M.D., Ph.D., D.Sc. 40. Title: Chronic neutrophilic leukaemia 3. Title: Anxiety in the dental chair: Tutor: Béla Telek M.D., Ph.D. pharmacological treatment 41. Title: Biological treatment of ulcerative 4. Title: Arrhythmic patient in dentistry colitis 5. Title: Optional title in pharmacology 42. Title: Extraintestinal association in IBD 6. Title: Parkinson patient in the dental chair Tutor: Károly Palatka M.D., Ph.D. habil. 7. Title: Pharmacological and clinical

significance of adenosine receptor antagonists 30. Title: Reflux disease and the dental patient 8. Title: Pharmacological and non-Tutor: Ágnes Cseppentő M.D. pharmacological treatment of endothelial 31. Title: Optional title on antibacterial dysfunction chemotherapy 9. Title: Pharmacology of antidepressive drugs: Tutor: Zsuzsanna Gál M.Sc., Ph.D. 32. Title: Optional title in pharmacology dental implications 10. Title: Pharmacotherapy of trigeminal Tutor: Béla Juhász D.Pharm., Dr. habil., Ph.D. 33. Title: Optional title in pharmacology neuralgia Tutor: József Szentmiklósi M.D., Ph.D. Tutor: Balázs Varga D.Pharm., Ph.D. 11. Title: Emerging roles of prostaglandin DP1 34. Title: Optional title in pharmacology Tutor: Mariann Bombicz D.Pharm. and DP2 receptors in acute and chronic aspects of allergic diseases 35. Title: Optional title in pharmacology 12. Title: Optional title in pharmacology Tutor: Dániel Priksz D.Pharm. 13. Title: Pharmacological treatment of acute decompensated heart failure (ADHF) Department of Physiology 14. Title: Pharmacology of herbal remedies 1. Title: Alterations of intracellular calcium 15. Title: Pharmacology of neurogenic concentration in pathological conditions inflammation Tutor: László Csernoch M.Sc., Ph.D., D.Sc. 16. Title: Pharmacotherapy of Amyotrophic 2. Title: Regional differences in the Lateral Sclerosis (ALS) electrophysiological properties of 17. Title: Pharmacotherapy of Duchenne cardiomyocytes Muscular Dystrophy (DMD) Tutor: Péter Nánási M.D., Ph.D., D.Sc. 18. Title: Possible pharmacological exploitations 3. Title: Role of afterdepolarization mechanisms of TRPV1 receptors in the arrhythmogenesis 19. Title: Use of Histone deacetylase inhibitors Tutor: Tamás Bányász M.D., Ph.D., D.Sc. (HDI): Novel advances in cancer treatment 4. Title: Electrophysiological properties of Tutor: Róbert Pórszász M.D., Dr. habil., MBA, mammalian cardiac tissues Ph.D. Tutor: János Magyar M.D., Ph.D., D.Sc. 20. Title: Effect of colony stimulating factors or 5. Title: Beat-to beat variability of cardiac other drugs on bone marrow-derived cell lines repolarization 21. Title: How insulin resistance influences drug Tutor: Norbert Szentandrássy M.D., Ph.D. effects 6. Title: Role of late sodium current in the 22. Title: Selected topic in field experimental arrhythmogenesis hemato-oncology Tutor: Balázs Horváth M.D., Ph.D. Tutor: Ilona Benkő M.D., Ph.D. 7. Title: Role of potassium channels in neuron 23. Title: Connections between rheumatoid function arthritis and periodontal disease with a focus on Tutor: Balázs Pál M.D., Ph.D. pharmacotherapy 8. Title: Properties of vanilloid receptors 24. Title: Immune checkpoint inhibitors in Tutor: István Balázs Tóth M.Sc., Ph.D. advanced oral cancer 9. Title: Role of Protein Kinase C isoforms in 25. Title: Optional title on cancer chemotherapy cell function. Tutor: Attila Megyeri M.D., Ph.D. Tutor: Gabriella Czifra M.Sc., Ph.D. 26. Title: Class I antiarrhythmic agents: dental implications **Department of Emergency Medicine** 27. Title: COX-3 inhibitors in the dental practice 1. Title: Cardiac rhythm disturbances. 28. Title: Optional title in pharmacology Hypertensive emergencies. 29. Title: Pharmacotherapy of bronchial asthma: Tutor: Zoltán Szabó M.D., M.Sc., Ph.D., D.Sc. dental implications

 1. Title: Diagnostic tests and imaging techniques in endocrinology 1. Title: Chief Nagy M.D., Ph.D., D.Sc. 2. Title: Current treatment of Acromegaly Tutor: Miklós Bodor M.D., Ph.D. 2. Title: Current treatment of Acromegaly Tutor: Annamária Frdei M.D., Ph.D. 2. Title: Treatment of colon diverticulosis Tutor: Tamás Buban M.D., Ph.D. 2. Title: Castrointestinal bleeding 4. Title: Treatment of colon diverticulosis Tutor: Javia Altorjay M.D., Ph.D. 2. Title: Gastrointestinal bleeding 4. Title: Gastrointestinal bleeding 4. Title: Gastrointestinal bleeding 4. Title: Epidemiology diagnosis and treatment of chronic hepatitis B virus 8. Title: Epidemiology, diagnosis and treatment of title: Symptoms, diagnosis and management of robodi coagulation and liver cirthosis. 1. Title: Treatment options for primary seletosing cholangitis 1. Title: Treatment options for primary seletosing cholangitis 1. Title: Treatment options for primary seletosing cholangitis 1. Title: Treatment of blocker of bacterial infections 1. Title: Treatment of bacterial infections 1. Title: The importance of bacterial infections 1. Title: The importance of bacterial infections 1. Title: Can the development of bacterial infections 1. Title: Can the development of bacterial infections 1. Title: Epidemiology, diagnosis, clinical 1. Title: Epidemiology, diagnosis, clinical 1. Title: The importance of bacterial infections 1. Title: Can the development of bacterial infections 1. Title: Extraintestinal manifestations of antimamatory bowel disease 1. Title: Treatment options for primary 2. Title: The importance of bacterial infections 1. Title: Can the development of bacterial infections 1. Title: The importance of bacterial infections <l< th=""><th>Division of Endocrinology</th><th>20. Title: Laboratory diagnosis of autoimmune</th></l<>	Division of Endocrinology	20. Title: Laboratory diagnosis of autoimmune
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 2. Title: Stem cell therapy in peripheral arterial disorders. 2. Title: Stem cell therapy in peripheral arterial disorders. 3. Title: New direct oral anticoagulants Tutor: Prof. Zoltán Boda M.D. 4. Title: COVID, post-COVID and haemostasis Tutor: Prof. György Pál Pfliegler M.D. 5. Title: Immunotherapy of B cell lymphomas 6. Title: Safety profile of prolonged rituximab therapy in lymphomas 7. Title: The role of PET/CT imaging in lyphomas 	15. Title: Diagnostic and therapeutic difficulties	1. Title: Ingerited and acquired thrombophilia
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 in liver cirrhosis. Tutor: Zsuzsa Vitális M.D., Ph.D. 18. Title: Can the development of bacterial infections be predicted in liver cirrhosis? 19. Title: Epidemiology, diagnosis, clinical presentation, factors influencing progression and efficacy of different medical treatments of autoimmune liver diseases Tutor: Prof. Zoltán Boda M.D. 4. Title: COVID, post-COVID and haemostasis Tutor: Prof. György Pál Pfliegler M.D. 5. Title: Immunotherapy of B cell lymphomas 6. Title: Safety profile of prolonged rituximab therapy in lymphomas 7. Title: The role of PET/CT imaging in lyphomas 	17. Title: The importance of bacterial infections	3. Title: New direct oral anticoagulants
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 19. Title: Epidemiology, diagnosis, clinical presentation, factors influencing progression and efficacy of different medical treatments of autoimmune liver diseases 6. Title: Safety profile of prolonged rituximab therapy in lymphomas 7. Title: The role of PET/CT imaging in lymphomas 	infections be predicted in liver cirrhosis?	5. Title: Immunotherapy of B cell lymphomas
presentation, factors influencing progression and efficacy of different medical treatments of autoimmune liver diseases for the second	19. Title: Epidemiology, diagnosis, clinical	6. Title: Safety profile of prolonged rituximab
efficacy of different medical treatments of autoimmune liver diseases 7. Title: The role of PET/CT imaging in lyphomas	presentation, factors influencing progression and	therapy in lymphomas
autoimmune liver diseases lyphomas	efficacy of different medical treatments of	7. Title: The role of PET/CT imaging in
	autoimmune liver diseases	lyphomas

 28. Title: Implication of the minimal residual disease in chronic lymphocytic leukaemia 29. Title: Genetic abnormalities in chronic lymphocytic leukaemia Tutor: Róbert Szász M.D., Ph.D. 30. Title: The prognostic value of ΔSUVmax in the first-line treatment of Hodgkin lymphoma Tutor: László Imre Pinczés M.D., Ph.D. 31. Title: Infectious complications and immunsuppression following hematopoietic stem cell transplantation Tutor: Zita Brigitta Radnay M.D., Ph.D. Division of Metabolism 1. Title: Significance of lipoprotein(a) in the development of cardiovascular disease Tutor: György Paragh M.D., Ph.D., D.Sc. 2. Title: Adipokines and insulin resistance 3. Title: Hypertriglyceridemia, cardiovascular risk and pancreatitis: causes and consequences 4. Title: Obesity: diagnosis and treatment 5. Title: Obesity: etiology and consequences 6. Title: The role of adipokines in the complications of obesity Tutor: Péter Fülöp M.D., Ph.D., D.Sc. 2. Title: Vascular calcification Tutor: József Balla M.D., Ph.D., D.Sc. 2. Title: Cardiovascular risk modification in PD patients Tutor: Réka P. Szabó M.D., Ph.D. 4. Title: Primary Membranous Nephropathy - after the PLA2-RA era Tutor: Csilla Markóth M.D.
 Division of Rheumatology 1. Title: Cognitive dysfunction, depression and anxiety in autoimmune diseases. Tutor: Zoltán Szekanecz M.D., Ph.D., D.Sc. 2. Title: IgA deficiency in autoimmune diseases Tutor: Szilvia Szamosi MD., Ph.D. 3. Title: The use of antifibrotic therapy in connective-tissue diseases associated ILD Tutor: Szilvia Szamosi MD., PhD.

9 Title: Instrumentation in spinal degenerative	 4. Title: JAK inhibitor use in rheumatoid arthritis Tutor: Szilvia Szamosi MD., Ph.D. 5. Title: Autoinflammatory register: database evaluation Tutor: Szilvia Szamosi MD., Ph.D. 6. Title: The role of rheumatoid factor in rheumatoid arthritis. Is it bad prognostic factor? Tutor: Dr. Nóra Bodnár MD., Ph.D. 7. Title: Novelties of myositis specific and associated antibodies. Tutor: Levente Bodoki MD., Ph.D. 8. Latest treatment recommendations in idiopathic inflammatory myopathies Tutor: Levente Bodoki MD., Ph.D. 9. Title: Patients' follow-up with idiopathic inflammatory myopathies Tutor: Levente Bodoki MD., Ph.D. 9. Title: IgG4 associated disease: disease course and treatment in our patient cohort. Tutor: Ágnes Horváth M.D., Ph.D., Dóra Tari M.D. 11. Title: Autoimmune disease of the roma population Tutor: Zsófia Pethő MD., Ph.D. 12. Title: Diagnosis of psoriatic arthritis and treatment options Tutor: Zsuzsanna Gyetkó M.D. 14. Title: Diagnosis and therapy of IBD associated arthritis Tutor: Rebeka Szelkó-Falcsik M.D. 15. Title: Investigation of risk for fracture and falls in patients with rheumatoid arthritis Tutor: János Gaál M.D., Ph.D., D.Sc. 	 Tutor: László Csiba M.D., Ph.D., D.Sc., M.H.A.Sc. 6. Title: Diagnosis and differential diagnosis of multiple sclerosis 7. Title: Multiple sclerosis - treatment in 2024 8. Title: Pregnancy in multiple sclerosis Tutor: Tünde Csépány M.D., Ph.D. 9. Title: Effect of sleep deprivation on neurovascular coupling Tutor: László Oláh M.D., Ph.D., D.Sc. 10. Title: Wearable devices in epilepsy and sleep disorders Tutor: Norbert Kozák M.D., Ph.D. 11. Title: Clinical outcome of patients with acute ethanol consumption and acute ischemic stroke out of the time window 12. Title: COVID-19 infection and non-traumatic intracerebral hemorrhage Tutor: Sándor Szabó M.D., Ph.D. 2. Title: Craniocerebral injuries of early childhood 3. Title: Surgical strategies in meningiomas invading venous sinuses Tutor: László Novák M.D., Ph.D. habil. 4. Title: The role of extracellular matrix in neurosurgical pathologies Tutor: Álmos Klekner M.D., Ph.D. habil. 5. Title: Treatment of trigeminal neuralgia, the role of stereotactic radiosurgery Tutor: József Dobai M.D. 6. Title: Treatment options of spinal metastatic tumors 7. Title: Treatment options of spinal metastatic tumors 7. Title: Treatment options of spinal metastatic tumors 9. Title: Treatment options of spinal metastatic 9. Title: The role on provide strategies in spinal tumors 7. Title: Treatment options of spinal metastatic 9. Title: Treatment options of spinal metastatic 9. Title: Treatment options of spinal metastatic 9. Title: Diffusion tensor imaging possibilities in deep brain stimulation 7. Title: Instrumentation in spinal degenerative
 consequences 3. Title: Neurosonological investigations in acute and chronic stroke patients 4. Title: Non-invasive investigation of endothelial dysfunction. 5. Title: The autopsy as the ultimate yardstick of medicine. Is it still true? 9. Title: Instrumentation in spinal degenerative pathologies Tutor: Rahmani Mohammad Tayeb M.D. 	 patients 2. Title: Misdiagnosis in neurology: causes and consequences 3. Title: Neurosonological investigations in acute and chronic stroke patients 4. Title: Non-invasive investigation of endothelial dysfunction. 5. Title: The autopsy as the ultimate yardstick of medicine. Is it still true? 	 deep brain stimulation Tutor: Gábor Fekete M.D., Ph.D. 9. Title: Instrumentation in spinal degenerative pathologies Tutor: Rahmani Mohammad Tayeb M.D.

Department of Obstetrics and	21. Title: Screening of preeclampsia in the first
Gvnecology	trimester of pregnancy
1. Title: Clinical trials of new drugs for the	Tutor: László Orosz M.D., Ph.D.
treatment of osteoporosis	22. Title: Pregnancy care in PCOS patients
Tutor: Ádám Balogh M.D., Ph.D., D.Sc.	23. Title: Special aspects of pregnancy care in
2. Title: Diagnosis and Treatment of Endometrial	patients with endocrine disorders
Cancer	24. Title: Thyroid autoimmunity - clinical
3. Title: Diagnosis and Treatment of Ovarian	significance, prevention and treatment in human
Cancer	reproduction
4. Title: Screening /Diagnosis and Treatment of	Tutor: Tamás Deli M.D., Ph.D.
Cervical Cancer	25. Title: Diagnosis and therapy in
Tutor: Zoltán Hernádi M D Ph D D Sc	urogynecology
5. Title: Non-invasive prenatal testing for	Tutor: Bence Kozma M.D., Ph.D.
chromosomal aneuploidies	26. Title: Laparoscopic techniques in benign
Tutor: Olga Török M D Ph D habil	gynecologic pathologies
6 Title: Efficiency and safety of first line	27. Title: New surgical methods in gynecologic
chemotherapy in ovarian cancer	oncology
7 Title Efficiency and safety of second and	28. Title: Types and methods of labour induction
subsequent line chemotherapy in ovarian cancer	and correlation with caesarean section rate
8. Title: Efficiency of HPV vaccination	Tutor: Rudolf Lampé M.D., Ph.D. habil.
Tutor: Róbert Póka M.D., Dr. habil., Ph.D.	29. Title: Contraception in the 21st century
9. Title: Meiotic abnormalities and their clinical	Tutor: Balázs Erdődi M.D.
significance in human reproduction	30. Title: New methods in radical surgery of
10. Title: Role of Doppler ultrasound in antenatal	ovarian cancer
care	Tutor: Szabolcs Molnár M.D., Ph.D.
Tutor: Tamás Szilveszter Kovács M.D., Ph.D.	31. Title: Comparative study of caesarean
11. Title: Anovulatory infertility	sections in Europe
12. Title: Examination of genetic concerns about	32. Title: The influence of mode of delivery on
the safety of assisted reproduction	neonatal and maternal health
13. Title: Role of antimullerian hormone (AMH)	Tutor: Jashanjeet Singh M.D.
in clinical practice	
14. Title: Ultrasound dating in pregnancy	Division of Gynecological Oncology
Tutor: Attila Jakab M.D., Ph.D. habil.	1. Title: Chemotherapy of ovarian cancer
15. Title: Cervical cancer prevention: the role	2. Title: Prognostic relevance of HPV-infection
and the future of HPV vaccination besides	in cervical cancer
conventional screening	3. Title: Surgical treatment of HPV-infection
16. Title: New treatment strategies in ovarian	4. Title: The prognostic role of CA-125 in
cancer	ovarian cancer
Tutor: Zoárd Krasznai M.D., Ph.D. habil.	Tutor: Zoltán Hernádi M.D., Ph.D., D.Sc.
17. Title: Pregnancy in unknown location (PUL)	5. Title: Chemotherapy of cervical cancer
Tutor: Péter Daragó M.D.	6. Title: Epidemiology and therapy of vulvar
18. Title: Analysis of perioperative results of	cancer
endometriosis surgery	7. Title: Epidemiology of metastatic ovarian
19. Title: Role of endoscopy in infertility work-	cancer
up	8. Title: Follow-up of endometrial cancer
Tutor: Péter Török M.D., Ph.D. habil.	patients, analysis of prognostic factors
20. Title: Autoimmune diseases in human	9. Title: Prothrombotic states in gynaecologic
reproduction	cancer
Tutor: Szilvia Vad M.D., Ph.D.	
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10. Title: Superoxid anion production of human corneal cells granulocytes in gynecologic cancer 18. Title: Up to date management of glaucoma Tutor: Bernadett Ujhelyi M.D., Ph.D. Tutor: Róbert Póka M.D., Dr. habil., Ph.D. 11. Title: Prognostic factors and treatment of 19. Title: Assessing the safety and efficacy of cervical cancer intravitreal ranibizumab as a preoperative adjunct treatment before vitrectomy surgery in 12. Title: The role of CA125 and HE4 in the severe proliferative diabetic retinopathy (PDR) follow-up of ovarian cancer Tutor: Zoárd Krasznai M.D., Ph.D. compared to standard vitrectomy alone 20. Title: Evaluate and demonstrate the results of the Hungarian Lucentis National Patient Registry **Department of Ophthalmology** Tutor: Attila Vajas M.D. 1. Title: Pathogenesis, symptoms and therapy of 21. Title: Dry eye in blepharospasm corneal dystrophies (diploma thesis) Tutor: Annamária Nagy M.D., Ph.D. Tutor: László Módis M.D., Ph.D., D.Sc. 22. Title: Treatment options for intraocular 2. Title: Changes in visual acuity and macular vascular disorders. oedema after anti-VEGF injections and grid Tutor: Szabolcs Balla M.D., Ph.D. photocoagulation in central retinal vein occlusion 23. Title: Artificial intelligence in 3. Title: The role of the latest anti-VEGF ophthalmology, review of the literature injections in the treatment for macular oedema Tutor: Beáta Bajdik M.D. following central retinal vein occlusion 24. Title: Examination and treatment of diabetic Tutor: Valéria Nagy M.D., Ph.D. maculopathy 4. Title: Our observations of angio OCT 25. Title: Stem cells of the cornea examination in retinal vein occlusion patient 26. Title: Surgical treatment of retinal diseases Tutor: Valéria Nagy M.D., Ph.D. Tutor: Lili Takács, M.D., Ph.D. 5. Title: Examination of keratoconus progression 6. Title: Ophthalmological manifestations of 27. Title: Biometry characteristics of high myopic eyes immune-mediated diseases 28. Title: Possibilities of myopia control 7. Title: Retinal detachment Tutor: Noémi Széll M.D., Ph.D. 8. Title: Endoresection of large uveal melanomas Tutor: Mariann Fodor M.D., Dr. habil., Ph.D. **Department of Otorhinolaryngology** 9. Title: Contact lens wear and complications 10. Title: Orthokeratology and Head and Neck Surgery Tutor: Beáta Kettesy M.D., Ph.D. 1. Title: Implantable hearing aids 11. Title: Corneal measurments with Pentacam 2. Title: Modern treatment of upper airway 12. Title: Refractive laser-surgical interventions stenoses Tutor: Bence Lajos Kolozsvári M.D., Ph.D. 3. Title: Postlaryngectomy voice and pulmonary 13. Title: Treatment of Graves' orbitopathy rehabilitation 14. Title: Examination of OCT (optical Tutor: Balazs Sztano M.D., PhD. habil. coherence tomography) angiographic changes in 4. Title: The role of cochlear implant in hearing endocrine orbitopathy (EOP) as a function of rehabilitation orbital activity 5. Title: The role of the middle ear implantation Tutor: Zita Steiber M.D., Ph.D. and active and passive bone anchored hearing 15. Title: Change in treatment of intraocular aids in hearing rehabilitation tumors from the first application of Tutor: Laszlo Toth M.D., Ph.D. habil brachytherapy till now in Hungary 6. Title: Analysis of the aetiology and 16. Title: Investigation of vascular endothelial patomechanism of the development of the otitis growth factor level in the tear of uvel melanoma media with effusion patients 7. Title: Modern aspects of tonsilllectomy versus Tutor: Éva Surányi M.D., Ph.D. tonsillotomy 17. Title: Analysis of a wound healing assay on

 8. Title: The effectiveness of surgical treatment of focal oto-rhino-laryngological diseases on dermatologic diseases. 9. Title: The utility of the neuromonitor during surgeries of the big salivary glands Tutor: Szilard Gyula Rezes M.D., Ph.D. 10. Title: Tinnitus as a symptom of the systemic microvascular dysfunction Tutor: Zsuzsanna Piros M.D. Department of Pediatrics Title: Expression of thermogenic gene products in the adipose tissue of preschool children Title: Immunohistochemical analysis of the developing human adipose tissue: hormone reeptors, transcriptional regulators and thermogenic proteins Tutor: Tamás Rőszer M.Sc., Ph.D. Title: Chronic morbidities of premature infants Tutor: György Balla M.D., Ph.D., D.Sc., M.H.A.Sc. Title: Prognostic factors in childhood acute lymphoblastic leukemia Tutor: Csongor Kiss M.D., Ph.D., D.Sc. Title: Adding an Electrocardiogram to the Pre-	 14. Title: Emergency management of the diabetic ketoacidosis in children Tutor: Éva Juhász M.D. 15. Title: Implantable venous access systems in pediatric use: implantation, management and complications Tutor: Ágnes Magyar M.D. 16. Title: Immunotherapeutical treatment modalities in neuroblastoma Tutor: Miklós Petrás M.D., Ph.D. 17. Title: Controversies in the surgical management of congenital diaphragmatic hernias Tutor: László András Sasi Szabó M.D. 18. Title: Obesity - New therapical approaches 19. Title: Temple syndrome - case report Tutor: Klára Nagy-Erdei M.D. 20. Title: Prognostic importance of ultrasound in small bowel invagination Tutor: Klára Nagy-Erdei M.D. 21. Title: Laparoscopic versus open pyeloplasty in children - A single centre experience and review of the literature Tutor: Levente Szabó M.D. 22. Title: Negative pressure wound therapy (NPWT) in pediatric surgery Tutor: Péter Juhász M.D. 23. Title: Cytogenetic and molecular genetic
Athletes. Review. Tutor: Gábor Mogyorósy M D Ph D	alterations in pediatric acute leukemias between 2015 and 2020
6. Title: Malformations of the central nervous system in newborns.	Tutor: Zsuzsanna Gaál M.D., Ph.D.
Tutor: Andrea Judit Nagy M.D. 7. Title: Anti-TNF use in pediatric inflammatory bowel disease Tutor: Éva Faragóné Nemes M.D., Ph.D. 8. Title: Pediatric endocrinological problems 9. Title: Primary immunedeficiency in childhood: case reports 10. Title: Systemic autoimmune diseases in childhood Tutor: Rita Kinga Káposzta M.D., Ph.D. 11. Title: Etiology of renal gruft dysfunction in pediatric kidney transplant patients Tutor: Tamás Szabó M.D., Ph.D. 12. Title: Recent advances in the management of pediatric AML Tutor: István Szegedi M.D., Ph.D. 13. Title: Emergency management of chest pain in children	 Division of Neonatology 1. Title: Neurodevelopmental outcome in preterm and low birth weights infants Tutor: Nóra Katona M.D. 2. Title: In utero circulation and preterm birth 3. Title: Perinatal consequences of maternal autoimmune diseases 4. Title: Respiratory and circulatory adaptation after birth 5. Title: Respiratory treatment of preterm neonates 6. Title: Screening and treatment of perinatal infections 7. Title: Special nutrition of neonates with congenital heart defect Tutor: Balázs Kovács-Pászthy M.D. 8. Title: Mortality and morbidity of very low birth weight preterm infants

Tutor: Magdolna Riszter M.D.	11. Title: Post-traumatic stress disorder and post-
9. Title: Less Invasive Surfactant Administration-	traumatic growth.
a narrative rewiev	12. Title: The neurobiology of depression.
10. Title: Lung ultrasound in the Critically III	13. Title: The role of mikrobiota in mental health
Neonate	14. Title: The therapeutic potentials of
Tutor: Gergely Balazs M.D.	psychodelics
	Tutor: Ede Frecska M.D., M.A., Ph.D.
Department of physical medicine	15. Title: Role of mentalization in literacy
rehabilitation	16. Title: Assessment of literacy in psychiatric
1. Title: Studying the effectiveness of	disorders and the potential effects of
physiotherapy modalities after botulinum toxin	pharmaceutical therapy
treatment for post-stroke and spasticity	Tutor: Judit Zsuga M.D., Ph.D., D.Sc.
2. Title: Testing the effectiveness of the upper-	
extremity repetitive task practice and forced	Department of Pulmonology
aerobic training added to ergotherapy to improve	1. Title: New perspectives in the treatment of
upper limb and cognitive functions	lung cancer
3 Title: The efficiency test of the	Tutor: Andrea Fodor M.D.
electromyogram-triggered FES treatment in	2. Title: Biologic therapy in severe asthma
hemiparetic patients and the visual feedback	Tutor: László Brugós M.D., Ph.D.
training in the development of upper limb	3. Title: Relationship between smoking and lung
functions	diseases
4 Title: The relationship of physiological and	4. Title: The role of bronchoscopy in the therapy
functional changes observed in complex	of lung cancer
rehabilitation programs (obesity and stroke	Tutor: Imre Varga M.D., Ph.D.
rehabilitation) with adinocytes	5. Title: Modern Therapy of NSCLC
Tutor: Zoltán Jenei M.D. Ph.D.	Tutor: Tamás Kardos M D
Tutor. Zonan Jener W.D., Th.D.	6 Title. Therapic possibilities in lung cancer
Department of Development	treatment side effects
Department of Psychiatry	Tutor: Attila Lieber M D
1. Little: The dietetic and gastrointestinal basis of	7 Title: Biomarkers in pulmonary diseases
	8 Title: Eosinophilic pulmonary diseases
Lutor: Csaba More E. M.D.	9 Title: New treatment options for rare lung
2. Little: Cognitive theory and therapy of	diseases
depression	10 Title. The role of the complement factor in
3. Title: Cognitive theory and therapy of	respiratory diseases
generalized anxiety disorder	Tutor: Ildikó Horváth M D Ph D D Sc
4. Little: Effectiveness of Cognitive Behaviour	Tutor: Hunto Horvaul 101.D., Th.D., D.00.
Therapy in OCD	Department of Surgery
5. Litle: Effectiveness of schema therapy in	1. Title: Surgical treatment of Graves disease
personality disorders	with anthalmonathy
6. Litle: Emotion dependent and independent	Tyter: Ference Cylery M.D.
cognitive functions in unipolar depression	2 Title: Surgical treatment of hervel chatmation
7. Title: Significance of disfunctional attitudes in	2. The Surgical treatment of bowel obstruction
depression and anxiety disorders	In colorectal diseases
8. Title: Theory of mind and mentalization	Tutor: Laszlo Damjanovich M.D., Pn.D., D.Sc.
deficits in patients with personality disorders	3. Title: Surgical and endovascular interventions
Tutor: Anikó Egerházi M.D., Ph.D.	in critical limb ischemia
9. Title: Brain imaging in psychiatry.	Tutor: Sandor Olvaszto M.D.
10. Title: Oxidativ stress and chronic inflamation	4. Little: Histopathologic examination of the
in psychiatric disorders	carotid plaques regarding their possible

prognostic value Tutor: Krisztina Litauszky M.D. 5. Title: Liver resections for metastases of colorectal cancer Tutor: János Pósán M.D. 6. Title: Prevention of bronchial stump insufficiency after lung resections Tutor: István Takács M.D., Ph.D. 7. Title: The surgical treatment of hyperparathyroidism Tutor: Roland Fedor M.D., Ph.D. 8. Title: Different forms of hereditary colorectal cancer among our patients. Tutor: Miklós Tanyi M.D., Ph.D. 9. Title: Mesh implantation in the surgical treatment of thoracic defects Tutor: Attila Enyedi M.D.

Department of Operative Techniques and Surgical Research

1. Title: Anesthesia and analgesia in animal experiments 2. Title: Animal welfare in animal experiments 3. Title: Experimental animal models for hyperplasia metabolic diseases (diabetes, metabolic syndrome, atherosclerosis, kidney tumors) in research Tutor: Ádám Deák D.V.M., Ph.D. 4. Title: Changes of red blood cells' micropartial nephrectomy rheology in surgical pathophysiological processes 5. Title: Microvascular anastomosis techniques Tutor: Norbert Németh M.D., MBA, Ph.D., D.Sc. 6. Title: Hemostatic agents in surgery 7. Title: Ischemia-reperfusion injury and its Surgery prevention with different methods - experimental models Tutor: Katalin Pető M.D., Ph.D. 8. Title: Analysis for laparoscopic skills assessment 9. Title: Hand hygiene and surgical scrub Tutor: Erzsébet Ványolos M.Sc., Ph.D. surgery 10. Title: Instruments and devices used in pharmacological care Tutor: Tamás Lesznyák M.D., D.Pharm. 11. Title: Basic Microsurgical Training course at the Professor István Furka Microsurgical microbiology and antibiotic treatment in Education and Training Center of the Department odontogenic infections of head and neck

of Operative Techniques and Surgical Research Tutor: Irén Mikó M.D., Ph.D. 12. Title: An overview of inter-species differences in red blood cell deformability and aggregation Tutor: Barbara Bedőcs-Baráth, M.Sc., Ph.D.

Department of Urology

1. Title: Role of laparoscopy in urology Tutor: Tibor Flaskó M.D., Ph.D. 2. Title: Assessment of urinary incontinence Tutor: László Lőrincz M.D. 3. Title: Different topics regarding prostate and kidney cancer Tutor: Csaba Berczi M.D., Ph.D. 4. Title: Bladder replacement after radical cystectomy Tutor: Antal Farkas M.D., Ph.D. 5. Title: Pathology of clear cell renal cancer Tutor: Krisztián Szegedi M.D. 6. Title: Treaement of urethral stricture Reconstructive urological surgeries Tutor: Mihály Murányi M.D. 7. Title: Assessment of bening prostate Tutor: József Zoltán Kiss M.D. 8. Title: Effect of ochidopexy on male fertility Tutor: Gyula Drabik M.D. 9. Laparoscopic and Robot assisted (DaVinci) Tutor: János Dócs M.D. 10. Microsurgical interventions in andrology Tutor: Dániel Varga M.D. **Department of Oral and Maxillofacial** 1. Title: Dental treatment prior to radiotherapy in the head and neck region 2. Title: Treatment of N0 neck in oral cavity squamous cell carcinoma Tutor: Adrienne Szabó M.D., Ph.D. 3. Title: Possible flap design in dentoalveolar 4. Title: Radial forearm flap 5. Title: Tumors of the parotid gland Tutor: Dóra Horváth M.D. 6. Title: A ten-year retrospective study of

7. Title: Ameloblastoma	4. Title: Peri-implant soft tissue surgery
Tutor: Petronella Révész M.D.	5. Title: Periodontal management in children and
8. Title: Mandibular distraction osteogenesis	adolescents
9. Title: Odontogenic keratocyst	Tutor: János Angyal D.M.D., Ph.D.
10. Title: Treatment modalities of mandibular	6. Title: Interdental cleaning devices: old
fractures in elder population	tradition and new aspects
Tutor: Levente Czompa M.D.	7. Title: Prevalence and etiopathogenezis of
	Epstein-Barr virus in marginal periodontitis
Department of Orthodontics	Tutor: Katinka Hernádi D.M.D., Ph.D.
1. Title: Development and Physiology of the	
Temporomandibular Joint (TMJ)	Department of Operative Dentistry and
2. Title: Primary failure of eruption (PFE)	Endodontics
3. Title: Orthodontics and speech therapy	1 Title: Photopolymerization lamps
Tutor: Judit Török D.M.D.	photopolymerization of the composite filling
4. Title: Auxiliary elements in aligner treatments:	2 Title: Sleep appea and its dental aspects
attachments, TAD-s, elastics, buttons, cutouts,	3 Title: The role of water-soluble vitamins and
ETC.	the oral manifestation of their deficiency
5. Title: Intraoral scanners, extraoral scanners, 3d	Tutor: Dr. Balogh Bettina D M D
printers in orthodontic treatments	4 Title: TRP channels in the dental pulp
6. Title: Oral myofunctional therapy in	5 Title: Toll-like recentors in pulpitis
orthodontics	6 Title: Inflammatory mechanisms of the dentin-
Tutor: Géza Vitályos D.M.D., Ph.D.	nuln complex
7. Title: Adult interdisciplinary therapy	Tutor: Dr. Bohács Iudit D M D
8. Title: Pseudoprogenia	7 Title: Endodontic management of curved root
9. Title: Extraction in Orthodontic Treatment	canal
Tutor: Eszter Faragó-Ládi D.M.D.	8 Title: Different treatment options of open
10. Title: Effectiveness of orofacial	anices
myofunctional therapy	Tutor: Dr. Hidi Erika D M D
11. Title: Management of deep overbite	9 Title: Barodontology
malocculsion	10 Title: Guttapercha in endodontics
12. Title: Prevention and early treatment in	Tutor: Dr. Juhász Alexander D M D Ph D
orthodontics	11 Title: History of composite filling
Tutor: Leila Hamid D.M.D.	12 Title: Types of caries and filling techniques in
13. Title: Interventions to speed up orthodontic	aged people
treatment	13. Title: History of dental drills
14. Title: Interproximal reduction and its option	Tutor: Dr. Kelentev Barna D.M.D., Ph.D., C.Sc.
to use while orthodontic treatment	14. Title: Intraorifice sealing ability of different
15. Title: Orthodontic treatment of skeletal and	materials in endodontically treated teeth
compromised cases: camouflage and retreatment	15. Title: Laser Doppler flowmetry in
Tutor: Judit Hevesi D.M.D.	endodontics
	Tutor: Dr. Marincsák Rita D.M.D., Ph.D.
Department of Periodontology	16. Title: Examination of repair ability of short
1. Title: The use of periodontal membranes in the	filer reinforced composite(TDK)
field of periodontology	17. Title: Influence of preheating on nanohybrid
2. Title: Minimal invasiveness in nonsurgical	composite wear (TDK)
periodontal therapy	Tutor: Dr. Martos Renáta D.M.D., Ph.D.
3. Title: P4 Medicine as a model for precision	18. Title: Endodontic treatment in case of special
periodontal care	root canal morfology
Tutor: István Varga D.M.D., Ph.D.	19. Title: Removal possibility of sealers
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20. Title: Files for machine glyde path 6. Title: Biofilm removing therapies Tutor: Dr. Nagy László D.M.D. 7. Title: Genetical disorders associated with 21. Title: Sealer extrusion periodontitis 22. Title: Glasionomer cements in restorative 8. Title: Genome sequencing in dentistry Tutor: Boglárka Skopkó D.M.D. dentistry 9. Title: Metal allergy in dentistry 23. Title: Abfraction Tutor: Márta Szepesi D.M.D. Tutor: Dr. Suta Péter D.M.D. 24. Title: Managment of microcracks in dental 10. Title: Antibacterial effects of Lidocaine hard tissues 11. Title: The importance of peri-implant soft 25. Title: Hydrodinamic theory and beyond tissue: widening the keratinized gingiva 26. Title: Modern treatment methods for 12. Title: Treatment methods of perimplantitis Tutor: Árpád Kunka M.D. sensitive teeth Tutor: Dr. Tóth Enikő Rita D.M.D. 13. Title: Coronectomy 14. Title: Embriology, clinical appearance and treatment of non-odontogen cysts in the **Department of Oral Medicine** maxillofacial region 1. Title: Risk factors for the diseases of the 15. Title: Possible treatment options of sinus tongue and lip perforation 2. Title: Risk factors for oral candidosis Tutor: Orsolya Liska D.M.D. 3. Title: Assessment of glycemic control in 16. Title: Meth Mouth syndrome periodontal disease 17. Title: Digital planning in oral implantology Tutor: Ildikó Tar D.M.D., Ph.D. 18. Title: Alternatives of sinus lift surgery Tutor: Nándor Kalas D.M.D. **Department of Pediatric and** 19. Title: Complications of root canal treatment **Preventive Dentistry** related to oral surgery 1. Title: Minimal intervention dentistry for 20. Title: Intraoral effects of the radiotherapy on managing carious lesions in primary teeth the head and neck region 2. Title: Non-fluoride remineralisation therapy 21. Title: PRF usage of MRONJ 3. Title: Silver in dentistry Tutor: Georgina Károlyi-Farkas D.M.D. Tutor: Judit Nemes D.M.D., Ph.D. 22. Title: Bone ring technique 4. Title: Bioactive and biodegradable materials in 23. Title: Effects of biological therapy in paediatric endodontics dentoalveolar surgery 5. Title: Cellular and molecular mechanisms of 24. Title: Frenulotomy and frenulectomy tooth eruption Tutor: Nándor Hegedűs D.M.D. Tutor: Gabriella Kovalecz D.M.D., Ph.D. 25. Title: Students attitude towards infection controll **Department of Dentoalveolar Surgery** 26. Title: History of local anesthesia 1. Title: Pre-eruptive intra-coronal resorption Tutor: Tamás Kőrösi D.M.D. 2. Title: Soft tissue praeprosthetic surgery 27. Title: Role of steroid in dentoalveolar surgery 3. Title: Trigeminus neuralgy 28. Title: Artificial Intelligence in oral surgery Tutor: Etelka D. Tóth D.M.D. Tutor: Máté Taskó D.M.D. 4. Title: Hard tissue praeprosthetic surgery

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sutures in oral surgery

Tutor: Levente Lukács D.M.D.

5. Title: Usage of resorbable and non-resorbable

CHAPTER 23 LIST OF TEXTBOOKS

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Introduction to Biophysics I.:

Serway/Vuille: College Physics. 10th edition. Cengage Learning, 2014. ISBN: 978-1285737027. Gáspár R.: Physics for BMC students. University of Debrecen

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