2024/2025

UNIVERSITY OF SZEGED

Albert Szent-Györgyi School of Medicine

CURRICULUM

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Study Programs

BRIEF HISTORY OF THE UNIVERSITY OF SZEGED

Before the 12th century, intellectual and scholarly life concentrated in the monasteries. With the growing professionalisation of society in the 12th and 13th centuries, demand increased for educated professionals. The universities appeared in Europe from the 11th-12th century. Medieval universities were established for the study of arts, law, theology and medicine. Universities were not defined by location and space but by individuals banded together as a corporation. The end of the medieval period signalled the arrival of modern universities where teaching and research met.

In **1581**, following the establishment of universities in other regions of Central and Eastern Europe, *István Báthory*, the Prince of Transylvania, issued a founding document for a higher educational institute in Kolozsvár (Cluj-Napoca). The Jesuit Academy (*Societatis Jesu Academia Claudiopolitana*) was organized with two faculties, the Faculty of Philosophy and the Faculty of Theology. The academy was meant to have the rank of a university from the beginning; Prince Báthory endowed the institute with the right to confer baccalaureate and master's degrees on its students. At that time, the university held a unique place in the intellectual activity of Hungary; it was the only institute for higher education in Hungary.

The academy was soon closed due to religious and political turmoil, but the Jesuits re-established it and the institute gained more stability and prestige in the 17th century.

From **1753**, according to a decree passed by the Holy Roman Empress and Queen of Hungary and Bohemia, *Maria Theresia*, the institute functioned as a university, where teaching was carried out in German. She was one of the most significant proponents of enlightened absolutism; her educational reforms were highly lauded. **1774** saw not only the introduction of mandatory education but also the start of change for the University of Kolozsvár. After the Society of Jesus had been abolished, Maria Theresia entrusted the *Piarists* with the reorganization of the institute. As a result of the restructuring–in addition to the Faculties of Theology and Arts–two new faculties were established, the Faculty of Law (1774) and the Faculty of Medicine-Surgery (**1775**).

Later on, these faculties served as the basis for the *Hungarian Royal University of Kolozsvár*, which was founded by King *Francis Joseph I* and the Hungarian Parliament in **1872**. In **1881**, the university was renamed after the king and bore his name until 1940.

In 1919, the university had to leave its founding place and after a brief stay in Budapest, found new home in Szeged. From **1921** until 1940 the *Ferenc József Tudományegyem* (Francis Joseph University) gained more and more prestige. When in **1940** the university was divided and part of it moved back to Kolozsvár, the remaining staff and students, the laboratories and the library were reorganized. The university took the name of *Miklós Horthy*, who was a former Governor of Hungary. The first rector of this institute was *Albert Szent-Györgyi*, who received the most prestigious award of sciences in 1937, the Nobel-price, for his research conducted at the university.

After World War II the institute assumed the name University of Szeged. In **1951** the Faculty of Medicine formed an independent institution under the name *Medical University of Szeged*. The pharmacy training was started as an independent faculty (separate from the medical faculty) in **1957**, and the Division of Dentistry as part of the Faculty of Medicine in **1962**. The English-Language Program for foreign students was established in **1985**. From **1999** there is also a German-Language Program at the Faculty of Medicine. In **1987** the University assumed the name of its former Biochemistry Professor, Dean of the Faculty of Medicine, Rector, and Nobel Prize Laureate, Albert Szent-Györgyi who was first to isolate vitamin C, extracted from paprika.

In **2000** the Albert Szent-Györgyi Medical University became again an integrated part of the University of Szeged. The Faculty of Medicine and the Faculty of Pharmacy functioned as the *Albert Szent-Györgyi Medical and Pharmaceutical Center* until July 2007. In the year 2004 the English-language dentistry program was launched and the Faculty of Dentistry was founded in January **2007**.

The faculties obtain their basis for education by running a high-level clinical and research work. The task of the faculties is represented by three different fields: education, research-work, prevention-treatment.

The University of Szeged is one of the most distinguished universities in Hungary and is proud to be considered as the intellectual successor of the University of Kolozsvár founded in 1581.

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Head of Department: Dr. ANDRÁS VÖRÖS, M.D. PhD

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(GYERMEKPSZICHIÁTRIAI OSZTÁLY)
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Head of Department: Prof. habil. JÁNOS KÁLMÁN, M.D., PhD, D.Sc.

Psychiatry Unit I.
(I. sz. PSZICHIÁTRIAI OSZTÁLY)
(Szeged, Korányi fasor 8-10. 3rd floor)
Head of Unit: Dr. BETTINA KATA KÁDÁR, M.D., PhD

Psychiatry Unit II.
(II. sz. PSZICHIÁTRIAI OSZTÁLY)
(Szeged, Korányi fasor 8-10. 3rd floor)
Head of Unit: Dr. BENCE ANDRÁS LÁZÁR, M.D., PhD

Psychiatry Unit III.
(III. sz. PSZICHIÁTRIAI OSZTÁLY)
(Szeged, Korányi fasor 8-10. 2nd floor)
Head of Unit: Dr. ERIKA HAJNALKA TÓTH, M.D.

Psychiatry Unit IV.
(IV. sz. PSZICHIÁTRIAI OSZTÁLY)
(6600 Szentes, Sima Ferenc u. 44-58.)
Head of Unit: Dr. RÉKA MÁRIA SZAKÁCS, M.D., PhD

Psychiatric Outpatient Unit
(PSZICHIÁTRIAI JÁRÓBETEG-ELLÁTÁS ÉS GONDOZÁS)
(Szeged, Mars tér 20.)
Head of Unit: Dr. ANNA KISS-SZŐKE, M.D.

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Head of Department: Prof. habil. ZOLTÁN BAJORY, M.D., Ph.D.

LIST OF EDUCATIONAL ADVISORS AND RESEARCH CONSULTANTS

Research at the bench or on a clinical basis provides a very important perspective for future physicians. It gives the students a chance to pursue common goals with faculty mentors and may give a glimpse into potential careers. Students are strongly encouraged to consider research opportunities. See your scientific research consultant at each department.

Department	Educational advisor	Research consultant
Dept. of Anatomy, Histology and Embryology	**Dr. Czigner Andrea** **+** 36 62/545056/5056 *dobo.endre@med.u-szeged.hu*	**Dr. Krisztián Pajer**
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Dept. of Behavioural Sciences	**Prof. Dr. Bettina Pikó** +36 62/545 968 *fuzne.piko.bettina@med.u-szeged.hu*	**Dr. Oguz Kelemen**
Dept. of Biochemistry	**Dr. Csaba Csonka** +36 62/545 755 *csonka.csaba@med.u-szeged.hu*	**Dr. Tamás Csont**
Department of Cell Biology and Molecular Medicine	**Prof. Dr. Eszter Farkas** *office.molmed@med.u-szeged.hu*	**Dr. Ákos Menyhárt**
Department of Clinical Microbiology	**Dr. Anita Varga-Bogdanov** +36 62/546112 *varga-bogdanov.anita@med.u-szeged.hu*	**Dr. Gabriella Terhes**
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ACADEMIC CALENDAR 2024/2025

ACADEMIC PERIODS

	1st (Fall) semester:	**2nd (Spring) semester:**
Education period:	from September 9 to December 14, 2024	from February 10 to May 24, 2025
Examination period:	from December 16, 2024 to February 1, 2024	from May 26 to July 5, 2025
Repeat examination period:	from February 3 to February 8, 2025	from July 7 to July 12, 2025
Breaks:	Winter break: from December 22, 2024 to January 01, 2025 (The university is closed. There are no examinations.)	Spring break: from April 14 to April 22, 2025
Holidays:	October 23, November 1, 2024	May 1, June 9, 2025

For other important dates and deadlines, please check the relevant Info Sheet posted on the website of the Foreign Students' Secretariat.

TUITION FEES

Students are required to pay their tuition fee according to the academic year in which they have started their first year studies at the University of Szeged. More: www.med.u-szeged.hu/fs/tuition-fee

In case the students' academic progress does not follow the suggested study plan, tuition fee is calculated according to the following:

Fee of attending three or more compulsory subjects	100% of one semester's tuition fee*
Fee of attending one or two compulsory subjects	max. 50% reduction of one semester's tuition fee can be requested*
Fee of attending solely compulsory elective / elective / criteria subject	max. 50% reduction of one semester's tuition fee can be requested
Fee of taking subject(s) that do not involve class attendance	max. 50% reduction of one semester's tuition fee can be requested

*Examination course fee / compulsory elective / elective / criteria subjects are included!

Make sure that the exact amount of your tuition fee is credited to the University's account. When transferring your tuition fee, please keep in mind that the bank commission charges have to be paid by the student. In the Remarks/Comments field please indicate your legal name, name of the program and your year.

Payment can be made by transfer to the following bank account:

USD ACCOUNT

University of Szeged
IBAN: HU94-10004012-10008016-00220332
Bank name: Hungarian State Treasury
(correspondent: Hungarian National Bank,
SWIFT code: MANEHUHB)
Bank address: H-1054 Budapest, Hold u. 4.
Swift code: HUSTHUHB

EUR ACCOUNT

University of Szeged
IBAN: HU79-10004885-10002010-00120335
Bank name: Hungarian State Treasury
(correspondent: Hungarian National Bank,
SWIFT code: MANEHUHB)
Bank address: H-1054 Budapest, Hold u. 4.
Swift code: HUSTHUHB

Fees are subject to change. For updates please check the relevant Info Sheet.

GENERAL GUIDELINES

1.) Registration: Students have to **register for each semester** in order to have an active student status. Students who are not registered properly are not entitled to attend the classes.

Registration requirements:

- **Tuition fee** has to be credited to the University's bank account in full before registration.
- Valid **residence permit**. Please check on the NEPTUN (under My Data/ Personal Information / Records) whether you have submitted a copy of your valid residence permit. If it was renewed recently, please present the original and a copy to the Secretariat.
- Valid **health insurance** (If it was renewed recently please present the original and a copy at the Secretariat.)
- **Summer practice** evaluation sheet (if required)
- Settled outstanding balance for **youth hostel fees** and **medical treatment costs**
- Valid **medical fitness certificate** (completed medical check-up by the occupational health doctor)

2.) Payment of the tuition fee: The deadline of payment is always specified in the information sheets published to the students before the beginning of the upcoming semester. Proof of payment has to be submitted to the Secretariat. Students have to make sure that the exact amount of the tuition fee is credited to the University's account until the deadline. Late payment is not possible.

3.) Neptun course registration: Students have to sign up for their courses in the NEPTUN (computer-based academic system) each semester. Students failing to meet this requirement are not entitled to attend the classes. The number of course registrations in a subject is limited: one course can be registered 3 times during the period of studies. Make sure you sign up for all your courses (both the lectures and practices, examination courses, physical education -2 semesters required).

4.) Residence permit

https://www.med.u-szeged.hu/fs/current-students/student-life-in-szeged download info from 'Residence Permit'

5.) Health Insurance

All students must have a valid health insurance during their stay in Hungary.
http://www.med.u-szeged.hu/fs/medical-treatment-of/medical-treatment-of

6.) Attendance of classes: If the absence does not exceed 15% of the total number of classes, students are not obliged to provide a certificate justifying the absence. If the absence falls between 15% and 25% of the total number of classes, students may only make up for the missed classes if they provide a certificate. The departments have the right to refuse the acceptance of a semester if the student missed more than 25 % of the practicals and did not make up for the absences.

7.) Obligation to report changes to the Secretariat: If there is a change in your personal data (address, e-mail address, telephone number etc.) you are required to *notify the Secretariat and correct the data in the Neptun*.
If you have to leave Szeged for a longer period of time during the lecture period due to substantial reasons (hospitalization, extraordinary family issues), you need to request permission in writing. Applications have to be handed in at the Foreign Students' Secretariat.

8.) General information regarding the examinations:

General information before you sign up for your exams:

- All exams including date, time and place is posted in the NEPTUN.
- Exam dates can be postponed before the NEPTUN closes the registration (*usually* 24 hours before the date of the exam. Clicking the course code, one can determine the closing of registration.) However, it is your duty to secure another date and time for your exam when you make changes.
- Students not showing up on an exam will lose one chance unless their absence is justified.
- A successful examination can be improved only in one subject / semester.

Procedures for unsuccessful exams:

- Repeated exam can be scheduled at the earliest by the 3rd working day following the unsuccessful exam.
- Unsuccessful exams can be repeated 2 times during the exam period. Upon request, a repeated exam can be taken before a committee. The exam committee is appointed by the Department Chair. Repeated exams with committee can be scheduled only for exam dates announced in the Neptun.
- 3rd repeat chance can be granted to those who have **only one exam left**. (In these cases the chances should be decreased by one when students sign up for the course for the 3rd time). Requests have to be handed in at the Foreign Students' Secretariat.
- In the repeat examination period only repeated exams can be taken. First examinations – even with a former absent registration – cannot be taken in the repeat examination week!
- In exceptional cases (hospitalization, extraordinary family issues) further examination chances can be requested from the Dean. Examinations granted as an exceptional equity can be taken only till the end of second week following the repeat examination period. Supporting documents must be attached to the application.

Further details are available in the relevant Info Sheet.

EXPRESSIONS

Compulsory Elective Subject (including Behavioral Science Subjects – only for medical students): There is a given number of credit points that has to be acquired in Compulsory Elective Subjects in the certain modules. One can choose freely from the subjects offered, however it is strongly recommended to follow the Suggested Study Plan.

Compulsory Subject: It is obligatory to take the subject in the module given.

Contact hours: Contact hours are the units of time required for a teacher to present subject material and to assess a student's performance. Contact hours include lectures, seminars, practical demonstrations, consultation hours and assessment.

Course requirement: The course requirement defines the precondition of a certain course. The course requirement can either be a **subject** or an **examination requirement**. In case of the *subject requirement* a course can be signed up for only if the examination defined in the course requirement has been completed successfully. In case of the *examination requirement* the examination of a course can only be taken if the examination defined in the course requirement has been completed successfully.

Credit: Credits are standard measurement of a student's accepted study time. One credit equals thirty hours of study time.

Credit transfer: Is a procedure accorded by the University of Szeged Code of Study and Examination Regulations, whereby a partial or full exemption can be given from completing one or more subjects by acknowledging previously completed subjects and thereby award the appropriate number of credit points.

Criteria Subject: Completion of criteria subjects is a precondition for entering the next module or receiving the diploma after finishing the final year (Physical Training, Summer Practices, Hungarian Language). Criteria subjects have no credit allocated to.

Elective Subject: There is a given number of credit points that has to be acquired in the certain modules. One can choose freely from the subjects offered, however it is strongly recommended to follow the Suggested Study Plan.

Examination course: If one cannot pass an examination successfully in the semester given, the examination can be repeated in the next examination period if the Department concerned announces it in the given semester and you get permission from the Dean. This means that the student will be exempted from fulfilling the requirements of the semester (classes do not have to be attended). An examination course can be taken only once in a certain subject.

Suggested study plan: the order and timing of subjects offered to students enabling them to obtain qualification within a specified period of time.

Term Mark: TM (five-grade system)

Grading system

Five-grade system
5 - excellent
4 - good
3 - accepted
2 - passed
1 - failed

GENERAL INFORMATION REGARDING THE STRUCTURE OF STUDIES AT THE ALBERT SZENT-GYÖRGYI MEDICAL SCHOOL

I. STRUCTURE OF STUDIES

In the academic year 2024/2025, students follow the curriculum/ suggested study plan of University of Szeged, Albert Szent-Györgyi Medical School (9001AK_N_2020) introduced in 2020/2021.

In order to obtain the Doctor of Medicine diploma, students need to acquire a minimum of 360 credits (by fulfilling the study and examination requirements of the subjects listed in the suggested study plan). In the final year, students, furthermore, have to complete the Final (State Board) Examination which consists of writing and defending a thesis, passing a complex written test and an oral patient examination (theoretical and practical part).

The order of taking the courses is set in the suggested study plan which is designed for completing medical studies within 12 semesters (6 years). **It is highly recommended to take the courses according to the Suggested Study Plan.**

Teaching is performed in 4 modules:
Basic Module (1st, 2nd year)
Pre-Clinical Module (3rd year)
Clinical Module (4th, 5th year)
Final Module (6th year)

Types of courses:
Compulsory Courses
Compulsory Elective Courses
Elective Courses
Criteria Courses

Credits to be acquired:

<table>
<tr><th></th><th>Basic Module (semesters 1-4)</th><th>Pre-Clinical Module (semesters 5-6)</th><th>Clinical Module (semesters 7-10)</th><th>Final Module (semesters 11-12)</th></tr>
<tr><td>Compulsory Courses</td><td>97 credits</td><td>49 credits</td><td>116 credits</td><td>50 credits</td></tr>
<tr><td>Compulsory Elective Courses</td><td colspan="3">45* credits</td><td rowspan="3">-</td></tr>
<tr><td>Elective Courses</td><td colspan="3">18 credits</td></tr>
<tr><td rowspan="2">Criteria Subjects (no credits)</td><td>Nursing Summer Practice</td><td>Internal Medicine Summer Practice</td><td>Doctor-Patient Communication, Surgery Summer Practice</td></tr>
<tr><td colspan="3">2 semesters of Physical Education, Hungarian Language courses</td></tr>
</table>

* This number includes 10 credits for the completion of the fifth year courses Thesis Plan I. & II., the completion of which is compulsory for all the fifth year students.

All the requirements of a module have to be fulfilled in order to enter the next module.

II. SPECIAL RULES FOR BEHAVIORAL SCIENCE SUBJECTS

In the fourth year (8th semester), students have to take a final examination which covers the knowledge, skills and attitudes learned during the seven previous semesters. The precondition for taking the examination is the earlier acquisition of 9 credits from the subjects below. However, it is recommended to complete all Behavioral Science Subjects (11 credits).

A total of 11 (9) credits from compulsory behavioral sciences courses are required.

Compulsory courses for years 1–4:

- Introduction to Medicine lecture and practice (year 1, fall semester; 2 credits)
- Medical Anthropology seminar (year 2, spring semester; 1 credits)
- Ethics in Medicine lecture and practice (year 4, spring semester; 3 credits -> 2 credits)
- Introduction to Psychology, Communication lecture and practice (year 1, spring semester; 2 credits -> 1 credits)
- Medical Psychology I. lecture and practice (year 4, fall semester; 2 credits)
- Medical Psychology II. lecture and practice (year 4, spring semester; 1 credits)
- Doctor-Patient Communication (criteria course, year 4, fall and spring semester)

Extra credits will be considered positively in the final assessment.

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	**Precondition** (**SR**: subject requirement = completion of the precondition subject(s) in a preceding semester is required; **ER**: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; **P**: parallel completion = register for all subjects in the same semester)
1st (fall) semester (9001AK_N_2020)									**BASIC MODULE**
Compulsory Subjects *(* The completion of the course is obligatory in the semester given. / ** Latin Based Medical Terminology I. and II. have to be completed in the Basic Module. / *** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK011	Basic Life Support	Dept. of Emergency Medicine	Dr. Zoltán Pető	-	2	-	Term Mark(5)	2	-
AOK-OAK0211	Anatomy, Histology and Embryology I.	Dept. of Anatomy	Prof. Antal Nógrádi	3	-	-	Examination	3	**P:** AOK-OAK0221: Dissection Practice I., AOK-OAK0231: Histology practice I.
AOK-OAK0221	Dissection Practice I.	Dept. of Anatomy	Prof. Antal Nógrádi	-	3	-	Term Mark(5)	2	**P:**AOK-OAK0211: Anatomy, Histology and Embryology I., AOK-OAK0231: Histology practice I.
AOK-OAK0231	Histology practice I.	Dept. of Anatomy	Prof. Antal Nógrádi	-	2	-	Term Mark(5)	2	**P:**AOK-OAK0211: Anatomy, Histology and Embryology I., AOK-OAK0221: Dissection Practice I.
AOK-OAK041	Introduction to Medicine lecture	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	1	-	-	Evaluation(5)	2	**P**: AOK-OAK042: Introduction to Medicine
AOK-OAK042	Introduction to Medicine practice	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	1	-	Signature	-	**P:** AOK-OAK041: Introduction to Medicine
AOK-OAK101	Medical Physics I. lecture	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	1	-	-	Examination	2	**P:** AOK-OAK103: Measurements in medical physics I., AOK-OAK102: Medical Physics I. seminar
AOK-OAK102	Medical Physics I. seminar	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	-	1	Signature	-	**P:** AOK-OAK103: Measurements in medical physics I., AOK-OAK101: Medical Physics I. lecture
AOK-OAK103	Measurements in medical physics I.	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	1	-	Term Mark(5)	1	**P:** AOK-OAK101 & AOK-OAK102: Medical Physics I. lecture & seminar
AOK-OAK111	Medical Chemistry I. lecture	Dept. of Med. Chemistry	Prof. Tamás Martinek	3	-	-	Examination	6	**P**: AOK-OAK112: Medical Chemistry I.
AOK-OAK112	Medical Chemistry I. practice	Dept. of Med. Chemistry	Prof. Tamás Martinek	-	1	-	Signature	-	**P**: AOK-OAK111: Medical Chemistry I.
AOK-OAK151	Cell Biology and Molecular Genetics I. lecture	Dept. of Med. Biology	Prof. Zsolt Boldogkői	2	-	-	Examination	4	**P**: AOK-OAK152: Cell Biology and Molecular Genetics I.
AOK-OAK152	Cell Biology and Molecular Genetics I. practice	Dept. of Med. Biology	Prof. Zsolt Boldogkői	-	2	-	Signature	-	**P**: AOK-OAK151: Cell Biology and Molecular Genetics I.
AOK-OAK601	Hungarian Language I.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	4	-	Term Mark(5)	-	-
AOK-OAK071	Latin Based Medical Terminology I.**	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Signature	-	-
Neptun search: Other elective subjects Subject name: From the list made avaiable by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))***	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV141	Introduction to Medical Chemistry	Dept. of Med. Chemistry	Prof. Tamás Martinek	1	-	-	Evaluation(5)	2	**P:** AOK-OAKV142: Introduction to Medical Chemistry
AOK-OAKV142	Introduction to Medical Chemistry	Dept. of Med. Chemistry	Prof. Tamás Martinek	-	1	-	Signature	-	**P:** AOK-OAKV141: Introduction to Medical Chemistry
AOK-OAKV021	Basics in Molecular Biology I.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV211	Cytomorphology and Microtechnics	Dept. of Cell Biology and Molecular Medicine	Dr. Eszter Farkas	2	-	-	Evaluation(5)	2	-
AOK-OAKV231	Developmental Genetics I.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV031	Frontiers of Molecular Biology I.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	2	-	-	Evaluation(5)	2	-
AOK-OAKV311	Genetic Analysis I.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV251	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions lecture	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	2	-	-	Evaluation(5)	2	**P:** AOK-OAKV252: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV252	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions practice	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	Total: 6	-	Signature	-	**P:** AOK-OAKV251: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV481	Introduction to Medical Informatics	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	1	-	-	Evaluation(5)	3	**P:** AOK-OAKV482: Introduction to Medical Informatics
AOK-OAKV482	Introduction to Medical Informatics	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	2	-	Signature	-	**P**: AOK-OAKV481: Introduction to Medical Informatics
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZVV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZV191	Fundamentals of medical physics	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	-	Total: 14	Evaluation(5)	1	-
AOK-OASZV761	Academic English for medical students I.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-

2nd (spring) semester (9001AK_N_2020)									**BASIC MODULE**
Compulsory Subjects *(* The completion of the course is obligatory in the semester given. / ** Latin Based Medical Terminology I. and II. have to be completed in the Basic Module. / *** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK0241	Anatomy, Histology and Embryology II.	Dept. of Anatomy	Prof. Antal Nógrádi	3	-	-	Comprehensive Exam	5	**ER**: AOK-OAK0211: Anatomy, Histology and Embryology I. **P**: AOK-OAK0251: Dissection Practice II., AOK-OAK0261: Histology Practice II.
AOK-OAK0251	Dissection Practice II.	Dept. of Anatomy	Prof. Antal Nógrádi	-	3	-	Term Mark(5)	2	**SR:** AOK-OAK0221: Dissection Practice I., AOK-OAK0231: Histology practice I., **P:** AOK-OAK0241: Anatomy, Histology and Embryology II., AOK-OAK0261: Histology Practice II.
AOK-OAK0261	Histology Practice II.	Dept. of Anatomy	Prof. Antal Nógrádi	-	2	-	Term Mark(5)	2	**SR:** AOK-OAK0221: Dissection Practice I., AOK-OAK0231: Histology practice I., **P:** AOK-OAK0241: Anatomy, Histology and Embryology II., AOK-OAK0251: Dissection Practice II.
AOK-OAK104	Medical Physics II. lecture	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Examination	3	**ER:** AOK-OAK101 & AOK-OAK102: Medical Physics I. lecture & seminar **P:** AOK-OAK106: Measurements in medical physics II., AOK-OAK105: Medical Physics II. seminar
AOK-OAK105	Medical Physics II. seminar	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	-	1	Signature	-	**P**: AOK-OAK106: Measurements in medical physics II., AOK-OAK104: Medical Physics II. lecture
AOK-OAK106	Measurements in medical physics II.	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	1	-	Term Mark(5)	1	**P**: AOK-OAK104 & AOK-OAK105: Medical Physics II. lecture & seminar
AOK-OAK107	Medical Statistics lecture	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	1	-	-	Examination	1	**P**: AOK-OAK108: Medical Statistics
AOK-OAK108	Medical Statistics practice	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	2	-	Term Mark(5)	2	**P:** AOK-OAK107: Medical Statistics
AOK-OAK113	Medical Chemistry II. lecture	Dept. of Med. Chemistry	Prof. Tamás Martinek	3	-	-	Examination	6	**ER**: AOK-OAK111: Medical Chemistry I. P: AOK-OAK114: Medical Chemistry II.
AOK-OAK114	Medical Chemistry II. practice	Dept. of Med. Chemistry	Prof. Tamás Martinek	-	3	-	Signature	-	**P:** AOK-OAK113: Medical Chemistry II.
AOK-OAK131	Introduction to Psychology, Communication lecture	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	Total 7 (7*1)	-	-	Evaluation(5)	1	**P:** AOK-OAK132: Introduction to Psychology, Communication
AOK-OAK132	Introduction to Psychology, Communication practice	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 14 (7*2)	-	Signature	-	**P:** AOK-OAK131: Introduction to Psychology, Communication
AOK-OAK153	Cell Biology and Molecular Genetics II. lecture	Dept. of Med. Biology	Prof. Zsolt Boldogkői	2	-	-	Examination	4	**ER**: AOK-OAK151: Cell Biology and Molecular Genetics I. **P**: AOK-OAK154: Cell Biology and Molecular Genetics II.
AOK-OAK154	Cell Biology and Molecular Genetics II. practice	Dept. of Med. Biology	Prof. Zsolt Boldogkői	-	2	-	Signature	-	**P:** AOK-OAK153: Cell Biology and Molecular Genetics II.
AOK-OAK602	Hungarian Language II.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	4	-	Term Mark(5)	-	**SR**: AOK-OAK601: Hungarian Language I.
AOK-OAK072	Latin Based Medical Terminology II.**	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Signature	-	**SR**: AOK-OAK071: Latin Based Medical Terminology I.
AOK-OAK031	Nursing Practice*	-	-	-	Total: 120	-	Signature	-	-
Neptun search: Other elective subjects Subject name: From the list made avaiable by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))***	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (SR: subject requirement = completion of the precondition subject(s) in a preceding semester is required; ER: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; P: parallel completion = register for all subjects in the same semester)
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV022	Basics in Molecular Biology II.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV232	Developmental Genetics II.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV032	Frontiers in Molecular Biology II.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	2	-	-	Evaluation(5)	2	-
AOK-OAKV312	Genetic Analysis II.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV011	Modern Instrumental Analysis and Separation Methods	Dept. of Med. Chemistry	Prof. Tamás Martinek	1	-	-	Evaluation(5)	1	-
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZV411	Chemical Misconceptions	Dept. of Med. Chemistry	Prof. Tamás Martinek	2	-	-	Evaluation(5)	2	-
AOK-OASZV711	Medical Hungarian Language I. - English Program I. year	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	Total: 14	-	Term Mark(5)	1	-
AOK-OASZV551	Medical physics remedial course	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	-	Total: 28	Term Mark(5)	1	-
AOK-OASZV731	Dissection room consultation	Dept. of Anatomy	Prof. Antal Nógrádi	-	2	-	Signature	-	**SR:** successful completion of Dissection Practice II. in a previous semester, **P**: Anatomy, Histology and Embryology II.
AOK-OASZV762	Academic English for medical students II.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-ONKV661	Berufsfelderkundung****	Dept. Of Behav. Sciences	Dr. Oguz Kelemen	-	1	-	Term Mark(5)	1	-

**** Supplementary course/examination for students working towards obtaining the "Physikum" certificate. The language of instruction is German. You can take it only if you are fluent in German (advanced, C1 level is required).

3rd (fall) semester (9001AK_N_2020) — BASIC MODULE

Compulsory Subjects *(* The completion of the course is obligatory in the semester given. / ** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK0271	Head, Neck and Neuroanatomy Lecture	Dept. of Anatomy	Prof. Antal Nógrádi	2	-	-	Examination	4	**SR**: AOK-OAK0251: Dissection Practice II., AOK-OAK0261: Histology Practice II., AOK-OAK0241: Anatomy, Histology and Embryology II. **P**: AOK-OAK0281: Head, Neck and Neuroanatomy - Dissection Practice, AOK-OAK0291: Histology of the Nervous System and Sense Organs
AOK-OAK0281	Head, Neck and Neuroanatomy - Dissection Practice	Dept. of Anatomy	Prof. Antal Nógrádi	-	3	-	Term Mark(5)	2	**SR:** AOK-OAK0251: Dissection Practice II., AOK-OAK0261: Histology Practice II. **P:** AOK-OAK0271: Head, Neck and Neuroanatomy Lecture, AOK-OAK0291: Histology of the Nervous System and Sense Organs
AOK-OAK0291	Histology of the Nervous System and Sense Organs	Dept. of Anatomy	Prof. Antal Nógrádi	-	2	-	Term Mark(5)	2	**SR:** AOK-OAK0251: Dissection Practice II., AOK-OAK0261: Histology Practice II. **P**: AOK-OAK0271: Head, Neck and Neuroanatomy Lecture, AOK-OAK0281: Head, Neck and Neuroanatomy - Dissection Practice
AOK-OAK051	Biochemistry I. lecture	Dept. of Biochemistry	Dr. Tamás Csont	4	-	-	Examination	6	**SR**: AOK-OAK113 Medical Chemistry II., **ER:** AOK-OAK153: Cell Biology and Molecular Genetics II. **P:** AOK-OAK052: Biochemistry I.
AOK-OAK052	Biochemistry I. practice	Dept. of Biochemistry	Dr. Tamás Csont	-	2	-	Signature	-	**P:** AOK-OAK051: Biochemistry I.
AOK-OAK091	Medical Physiology I. lecture	Dept. of Physiology	Prof. Gyula Sáry	4	-	-	Examination	8	**SR:** AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK153 & AOK-OAK154: Cell Biology and Molecular Genetics II., AOK-OAK0241: Anatomy, Histology and Embryology II. **P:** AOK-OAK092: Medical Physiology I.
AOK-OAK092	Medical Physiology I. practice	Dept. of Physiology	Prof. Gyula Sáry	-	4	-	Signature	-	**P**: AOK-OAK091: Medical Physiology I.
AOK-OAK121	Medical Sociology seminar	Dept. of Public Health	Dr. Edit Paulik	-	-	2	Examination	2	-
AOK-OAK603	Hungarian Language III.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	4	-	Term Mark(5)	-	**SR**: AOK-OAK602: Hungarian Language II.
Neptun search: Other elective subjects Subject name: From the list made avaiable by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))**	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV261	Medical Physiology (Seminar) I.	Dept. of Physiology	Prof. Gyula Sáry	-	-	4	Evaluation(5)	4	**P**: AOK-OAK091: Medical Physiology I.
AOK-OAKV251	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions lecture	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	2	-	-	Evaluation(5)	2	**P:** AOK-OAKV252: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV252	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions practice	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	Total: 6	-	Signature	-	**P:** AOK-OAKV251: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV231	Developmental Genetics I.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZV631	Body Development and Diseases and a Molecular Biological Background	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	-
AOK-OASZV731	Dissection room consultation	Dept. of Anatomy	Prof. Antal Nógrádi	-	2	-	Signature	-	**SR:** successful completion of Dissection Practice I. or III. in a previous semester, **P**: Anatomy, Histology and Embryology I. or III.
AOK-OASZV761	Academic English for medical students I.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-ONKV671	Einführung in die klinische Medizin***	Dept. Of Surgery	Prof. György Lázár	-	2	-	Term Mark(5)	2	-
AOK-ONKV691	Terminologie***	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Signature	1	-

*** Supplementary course/examination for students working towards obtaining the "Physikum" certificate. The language of instruction is German. You can take it only if you are fluent in German (advanced, C1 level is required).

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (SR: subject requirement = completion of the precondition subject(s) in a preceding semester is required; ER: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; P: parallel completion = register for all subjects in the same semester)
4th (spring) semester (9001AK_N_2020)									**BASIC MODULE**
Compulsory Subjects *(* The completion of the course is obligatory in the semester given. / ** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK053	Biochemistry II. lecture	Dept. of Biochemistry	Dr. Tamás Csont	4	-	-	Comprehensive Exam	6	ER: AOK-OAK051: Biochemistry I., P: AOK-OAK054: Biochemistry II.
AOK-OAK054	Biochemistry II. practice	Dept. of Biochemistry	Dr. Tamás Csont	-	2	-	Signature	-	P: AOK-OAK053: Biochemistry II.
AOK-OAK061	Immunology	Dept. of Immunology	Dr. Krisztina Buzás	2	-	-	Examination	2	SR: AOK-OAK0241: Anatomy, Histology and Embryology II. AOK-OAK0251: Dissection Practice II., AOK-OAK0261: Histology II., AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK113 & AOK-OAK114: Medical Chemistry II. ER: AOK-OAK0271: Head, Neck and Neuroanatomy Lecture
AOK-OAK081	Medical Anthropology Seminar	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	-	Total 14 (7*2)	Evaluation(5)	1	SR: AOK-OAK041 & AOK-OAK042: Introduction to Medicine
AOK-OAK093	Medical Physiology II. lecture	Dept. of Physiology	Prof. Gyula Sáry	6	-	-	Comprehensive Exam	10	ER: AOK-OAK091: Medical Physiology I., P: AOK-OAK094: Medical Physiology II.
AOK-OAK094	Medical Physiology II. practice	Dept. of Physiology	Prof. Gyula Sáry	-	4	-	Signature	-	P: AOK-OAK093: Medical Physiology II.
AOK-OAK141	Basic Surgical Skills lecture	Inst. of Surgical Research	Prof. Mihály Boros	1	-	-	Examination	3	P: AOK-OAK142: Basic Surgical Skills
AOK-OAK142	Basic Surgical Skills practice	Inst. of Surgical Research	Prof. Mihály Boros	-	2	-	Signature	-	P: AOK-OAK141: Basic Surgical Skills
AOK-OAK604	Hungarian Language IV.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	4	-	Prel.Exam	-	SR: AOK-OAK603: Hungarian Language III.
Neptun search: Other elective subjects Subject name: From the list made available by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))**	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV631	Human Embryology: Development of the Organ Systems	Dept. of Anatomy	Prof. Antal Nógrádi	2	-	-	Evaluation(5)	2	ER: AOK-OAK027: Anatomy, Histology and Embryology III.
AOK-OAKV262	Medical Physiology (Seminar) II.	Dept. of Physiology	Prof. Gyula Sáry	-	-	4	Evaluation(5)	4	P: AOK-OAK093: Medical Physiology II.
AOK-OAKV151	Biochemistry: Selected Chapters from Medical Biochemistry	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	P: AOK-OAK053: Biochemistry II.
AOK-OAKV441	Molecular Developmental-Biology	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	SR: AOK-OAK153: Cell Biology and Molecular Genetics II.
AOK-OAKV581	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	1	-	-	Evaluation(5)	2	P: AOK-OAKV582: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV582	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	1	-	Signature	-	P: AOK-OAKV581: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV051	Biochemical Basics of Preventive Medicine	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	SR: AOK-OAK051: Biochemistry I.
AOK-OAKV232	Developmental Genetics II.	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV361	How to learn Biochemistry?	Dept. of Biochemistry	Dr. Tamás Csont	-	-	2	Evaluation(5)	1	SR: AOK-OAK113: Medical Chemistry II.
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZV431	Clinical Anatomy***	Dept. of Anatomy	Prof. Antal Nógrádi	-	3	-	Term Mark(5)	3	SR: AOK-OAK0281: Head, Neck and Neuroanatomy, Dissection Practice II., AOK-OAK029: Histology Practice II.
AOK-OASZV291	Mathematical and Statistical Modelling in Medicine Lecture	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	1	-	-	Evaluation(5)	2	SR: AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, P: AOK-OASZV292: Mathematical and Statistical Modelling in Medicine Lecture
AOK-OASZV292	Mathematical and Statistical Modelling in Medicine Practice	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	1	-	Signature	-	P: AOK-OASZV291: Mathematical and Statistical Modelling in Medicine Lecture
AOK-OASZV762	Academic English for medical students II.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-ONK133	Grundbegriffe in der Psychologie***	Dept. of Behav. Sciences	Dr. Oguz Kelemen	-	-	-	Comprehensive Exam	2	-
AOK-ONK123	Medizinische Soziologie Rigorosum***	Dept. of Public Health	Dr. Edit Paulik	-	-	-	Comprehensive Exam	2	-

*** Supplementary course/examination for students working towards obtaining the "Physikum" certificate. The language of instruction is German. You can take it only if you are fluent in German (advanced, C1 level is required).

*******Without the completion of the every compulsory subject in the first and the second year (=every compulsory subject above except physical education) you cannot take any compulsory subjects from the pre-clinical module (third year) below.*******

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (**SR**: subject requirement = completion of the precondition subject(s) in a preceding semester is required; **ER**: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; **P**: parallel completion = register for all subjects in the same semester)
5th (fall) semester (9001AK_N_2020)									**PRE-CLINICAL MODULE**
Compulsory Subjects *(* The completion of the course is obligatory in the semester given. / ** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK181	Basic Principles of Internal Medicine (Basics of Haematology) lecture	Dept. of Internal Medicine	Prof. Csaba Lengyel	2	-	-	Examination	4	**P**: AOK-OAK182: Basic Principles of Internal Medicine (Basics of Haematology)
AOK-OAK182	Basic Principles of Internal Medicine (Basics of Haematology) practice	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	2	-	Signature	-	**P**: AOK-OAK181: Basic Principles of Internal Medicine (Basics of Haematology)
AOK-OAK201	Pathophysiology I. lecture	Dept. of Pathophysiology	Prof. Zoltán Rakonczay	3	-	-	Examination	5	**P**: AOK-OAK202: Pathophysiology I.
AOK-OAK202	Pathophysiology I. practice	Dept. of Pathophysiology	Prof. Zoltán Rakonczay	-	2	-	Signature	-	**P**: AOK-OAK201: Pathophysiology I.
AOK-OAK211	Microbiology I. lecture	Dept. of Med. Microbiology	Dr. habil Katalin Burián	3	-	-	Examination	5	**P**: AOK-OAK212: Microbiology I.
AOK-OAK212	Microbiology I. practice	Dept. of Med. Microbiology	Dr. habil Katalin Burián	-	2	-	Signature	-	**P**: AOK-OAK211: Microbiology I.
AOK-OAK221	Pathology I. lecture	Dept. of Pathology	Prof. László Tiszlavicz	3	-	-	Examination	6	**P**: AOK-OAK222: Pathology I.
AOK-OAK222	Pathology I. practice	Dept. of Pathology	Prof. László Tiszlavicz	-	3	-	Signature	-	**P:** AOK-OAK221: Pathology I.
AOK-OAK605	Hungarian Language V.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	3	-	Term Mark(5)	-	**SR:** AOK-OAK604: Hungarian Language IV.
Neptun search: Other elective subjects Subject name: From the list made available by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))**	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV351	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	1	-	-	Evaluation(5)	2	**SR:** AOK-OAK141 & AOK-OAK142: Basic Surgical Skills **P:** AOK-OAKV352: Advanced Surgical Skills
AOK-OAKV352	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	-	1	-	Signature	-	**SR:** AOK-OAK141 & AOK-OAK142: Basic Surgical Skills **P:** AOK-OAKV351: Advanced Surgical Skills
AOK-OAKV431	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	Total: 8	-	-	Evaluation(5)	2	**SR:** AOK-OAK027: Anatomy, Histology and Embryology III., AOK-OAK093: Medical Physiology II., AOK-OAK141 & 142: Basic Surgical Skills. **P:** AOK-OAKV432: Microsurgery
AOK-OAKV432	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	-	Total: 20	-	Signature	-	**P:** AOK-OAKV431: Microsurgery
AOK-OAKV451	Molecular Medicine	Dept. of Cell Biology and Molecular Medicine	Dr. Eszter Farkas	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK027: Anatomy, Histology and Embryology III., AOK-OAK093: Medical Physiology II.
AOK-OAKV071	Pathophysiology of Sepsis at the Bedside	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	1	-	-	Evaluation(5)	1	**SR:** AOK-OAK093: Medical Physiology II.
AOK-OAKV251	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions lecture	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	2	-	-	Evaluation(5)	2	**P:** AOK-OAKV252: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV252	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions practice	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	Total: 6	-	Signature	-	**P:** AOK-OAKV251: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZVV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZVD	Demonstrator Activity	The Dept. where the student's demonstrator activity application was accepted		-	2	-	Evaluation(5)	2	**SR:** AOK-OAK024: Anatomy, Histology and Embryology II., AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK113: Medical Chemistry II., AOK-OAK153: Cell Biology and Molecular Genetics II., AOK-OAK031: Nursing Practice
AOK-OASZV631	Body Development and Diseases and a Molecular Biological Background	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	-
AOK-OASZV301	Cerebral Blood Flow and Metabolism	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK091: Medical Physiology I.

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (SR: subject requirement = completion of the precondition subject(s) in a preceding semester is required; ER: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; P: parallel completion = register for all subjects in the same semester)
6th (spring) semester (9001AK_N_2020)									**PRE-CLINICAL MODULE**
Compulsory Subjects *(* The completion of the course is obligatory in the semester given. / ** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK161	Internal Medicine I. lecture	Dept. of Internal Medicine	Prof. Csaba Lengyel	3	-	-	Examination	4	ER: AOK-OAK181: Basic Principles of Internal Medicine (Basics of Haematology), P: AOK-OAK162: Internal Medicine I.
AOK-OAK162	Internal Medicine I. practice	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	2	-	Signature	-	P: AOK-OAK161: Internal Medicine I.
AOK-OAK191	Pharmacology and pharmacotherapy I. lecture	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	3	-	-	Examination	5	ER: AOK-OAK201: Pathophysiology I., AOK-OAK221: Pathology I., AOK-OAK211: Microbiology I., P: AOK-OAK192: Pharmacology and pharmacotherapy I.
AOK-OAK192	Pharmacology and pharmacotherapy I. practice	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	2	-	Signature	-	P: AOK-OAK191: Pharmacology and pharmacotherapy I.
AOK-OAK203	Pathophysiology II. lecture	Dept. of Pathophysiology	Prof. Zoltán Rakonczay	3	-	-	Comprehensive Exam	5	ER: AOK-OAK201: Pathophysiology I., P: AOK-OAK204: Pathophysiology II.
AOK-OAK204	Pathophysiology II. practice	Dept. of Pathophysiology	Prof. Zoltán Rakonczay	-	2	-	Signature	-	P: AOK-OAK203: Pathophysiology II.
AOK-OAK213	Microbiology II. lecture	Dept. of Med. Microbiology	Dr. habil Katalin Burián	3	-	-	Comprehensive Exam	5	ER: AOK-OAK211: Microbiology I., P: AOK-OAK214: Microbiology II.
AOK-OAK214	Microbiology II. practice	Dept. of Med. Microbiology	Dr. habil Katalin Burián	-	2	-	Signature	-	P: AOK-OAK213: Microbiology II.
AOK-OAK223	Pathology II. lecture	Dept. of Pathology	Prof. László Tiszlavicz	2	-	-	Comprehensive Exam	6	ER: AOK-OAK221: Pathology I., P: AOK-OAK224: Pathology II.
AOK-OAK224	Pathology II. practice	Dept. of Pathology	Prof. László Tiszlavicz	-	4	-	Signature	-	P: AOK-OAK223: Pathology II.
AOK-OAK231	Surgical Propedeutics lecture	Dept. of Surgery	Prof. György Lázár	2	-	-	Examination	4	P: AOK-OAK232: Surgical Propedeutics
AOK-OAK232	Surgical Propedeutics practice	Dept. of Surgery	Prof. György Lázár	-	2	-	Signature	-	P: AOK-OAK231: Surgical Propedeutics
AOK-OAK606	Hungarian Language VI.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	3	-	Term Mark(5)	-	SR: AOK-OAK605: Hungarian Language V.
AOK-OAK171	Internal Medicine Summer Practice*	-	-	-	Total: 120	-	Signature	-	P: AOK-OAK161: Internal Medicine I.
Neptun search: Other elective subjects Subject name: From the list made avaiable by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))**	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV351	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	1	-	-	Evaluation(5)	2	SR: AOK-OAK141 & AOK-OAK142: Basic Surgical Skills P: AOK-OAKV352: Advanced Surgical Skills
AOK-OAKV352	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	-	1	-	Signature	-	SR: AOK-OAK141 & AOK-OAK142: Basic Surgical Skills P: AOK-OAKV351: Advanced Surgical Skills
AOK-OAKV441	Molecular Developmental-Biology	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	SR: AOK-OAK153: Cell Biology and Molecular Genetics II.
AOK-OAKV421	Microbiological Problems in Med. Practice	Dept. of Med. Microbiology	Dr. habil Katalin Burián	1	-	-	Evaluation(5)	1	ER: AOK-OAK211: Microbiology I.
AOK-OAKV431	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	Total: 8	-	-	Evaluation(5)	2	SR: AOK-OAK027: Anatomy, Histology and Embryology III., AOK-OAK093: Medical Physiology II., AOK-OAK141: Basic Surgical Skills, P: AOK-OAKV432: Microsurgery
AOK-OAKV432	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	-	Total: 20	-	Signature	-	P: AOK-OAKV431: Microsurgery
AOK-OAKV271	Pharmacology Cases I.	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	2	-	Evaluation(5)	2	-
AOK-OAKV411	Pathophysiological Aspects of Laboratory Medicine	Dept. of Laboratory Medicine	Dr. Földesi Imre	2	-	-	Evaluation(5)	2	SR: AOK-OAK201: Pathophysiology I.
AOK-OAKV321	Gerontology	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	1	-	-	Evaluation(5)	2	SR: AOK-OAK041 & AOK-OAK042: Introduction to Medicine P: AOK-OAKV322: Gerontology
AOK-OAKV322	Gerontology	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	1	-	Signature	-	P: AOK-OAKV321: Gerontology
AOK-OAKV181	Foundations of Evidence Based Medicine	Dept. of Public Health	Dr. Edit Paulik	2	-	-	Evaluation(5)	2	SR: AOK-OAK121: Medical Sociology, AOK-OAK101 & AOK-OAK102 & AOK-OAK103: Medical Physics I.
AOK-OAKV581	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	1	-	-	Evaluation(5)	2	P: AOK-OAKV582: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV582	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	1	-	Signature	-	P: AOK-OAKV581: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV051	Biochemical Basics of Preventive Medicine	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	-
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZVV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZVD	Demonstrator Activity	The Dept. where the student's demonstrator activity application was accepted		-	2	-	Evaluation(5)	2	SR: AOK-OAK024: Anatomy, Histology and Embryology II., AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK113: Medical Chemistry II., AOK-OAK153: Cell Biology and Molecular Genetics II., AOK-OAK031: Nursing Practice
AOK-OASZV171	Basic Immunpathology	Inst. of Surgical Research	Prof. Mihály Boros	1	-	-	Evaluation(5)	1	SR: AOK-OAK211: Microbiology I.
AOK-OASZV241	Biotechnology from a Business Perspective	Dept. of Biotechnology	Prof. Kornél Kovács L.	2	-	-	Evaluation(5)	2	SR: AOK-OAK153: Cell Biology and Molecular Genetics II.
AOK-OASZV411	Chemical Misconceptions	Dept. of Med. Chemistry	Prof. Tamás Martinek	2	-	-	Evaluation(5)	2	-
AOK-OASZV291	Mathematical and Statistical Modelling in Medicine Lecture	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	1	-	-	Evaluation(5)	2	SR: AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, P: AOK-OASZV292: Mathematical and Statistical Modelling in Medicine Lecture
AOK-OASZV292	Mathematical and Statistical Modelling in Medicine Practice	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	-	1	-	Signature	-	P: AOK-OASZV291: Mathematical and Statistical Modelling in Medicine Lecture
AOK-OASZV221	Introduction to Toxicology	Dept. of Med. Chemistry	Prof. Tamás Martinek	2	-	-	Evaluation(5)	2	SR: AOK-OAK053: Biochemistry II., AOK-OAK093: Medical Physiology II.
AOK-OASZV771	3D printing in life sciences	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	-

*******Without the completion of the every compulsory subject in the pre-clinical module (except physical education) you cannot take any compulsory subjects from the clinical module below.*******

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (**SR**: subject requirement = completion of the precondition subject(s) in a preceding semester is required; **ER**: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; **P**: parallel completion = register for all subjects in the same semester)
7th (fall) semester (9001AK_N_2020)									**CLINICAL MODULE**
Compulsory Subjects (** The completion of the course is obligatory in the semester given. / ** Only half of the 4th year students can register in each semester. / *** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way*)									
AOK-OAK271	Internal Medicine II. lecture	Dept. of Internal Medicine	Prof. Csaba Lengyel	4	-	-	Examination	5	**P:** AOK-OAK272: Internal Medicine II.
AOK-OAK272	Internal Medicine II. practice	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	2	-	Signature	-	**P:** AOK-OAK271: Internal Medicine II.
AOK-OAK291	Pharmacology and pharmacotherapy II. lecture	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	4	-	-	Comprehensive Exam	5	**ER:** AOK-OAK191: Pharmacology and pharmacotherapy I., **P:** AOK-OAK292: Pharmacology and pharmacotherapy II.
AOK-OAK292	Pharmacology and pharmacotherapy II. practice	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	2	-	Signature	-	**P:** AOK-OAK291: Pharmacology and pharmacotherapy II.
AOK-OAK371	Public Health and Preventive Medicine I. lecture	Dept. of Public Health	Dr. Edit Paulik	2	-	-	Examination	3	**P:** AOK-OAK372: Public Health and Preventive Medicine I.
AOK-OAK372	Public Health and Preventive Medicine I. practice	Dept. of Public Health	Dr. Edit Paulik	-	2	-	Signature	-	**P:** AOK-OAK371: Public Health and Preventive Medicine I.
AOK-OAK391	Orthopedics lecture	Dept. of Orthopedics	Dr. Krisztián Sisák	2	-	-	Examination	3	**P:** AOK-OAK392: Orthopedics
AOK-OAK392	Orthopedics practice	Dept. of Orthopedics	Dr. Krisztián Sisák	-	2	-	Signature	-	**P:** AOK-OAK391: Orthopedics
AOK-OAK421	Medical Psychology I. lecture	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	Total 5 (5*1)	-	-	Evaluation(5)	2	**P:** AOK-OAK422: Medical Psychology I.
AOK-OAK422	Medical Psychology I. practice	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 20 (10*2)	-	Signature	-	**P:** AOK-OAK421: Medical Psychology I.
AOK-OAK451	Pulmonology lecture	Dept. of Pulmonolgy	Dr. Csaba Máthé	1	-	-	Examination	2	**P:** AOK-OAK452: Pulmonology
AOK-OAK452	Pulmonology practice	Dept. of Pulmonolgy	Dr. Csaba Máthé	-	2	-	Signature	-	**P:** AOK-OAK451: Pulmonology
AOK-OAK461	Radiology I. lecture	Dept. of Radiology	Dr. Kincses Zsigmond Tamás	1	-	-	Evaluation(5)	2	**P:** AOK-OAK462: Radiology I.
AOK-OAK462	Radiology I. practice	Dept. of Radiology	Dr. Kincses Zsigmond Tamás	-	1	-	Signature	-	**P:** AOK-OAK461: Radiology I.
AOK-OAK471	Surgery I. lecture	Dept. of Surgery	Prof. György Lázár	2	-	-	Evaluation(5)	3	**P:** AOK-OAK472: Surgery I.
AOK-OAK472	Surgery I. practice	Dept. of Surgery	Prof. György Lázár	-	2	-	Signature	-	**P:** AOK-OAK471: Surgery I.
AOK-OAK501	Obstetrics and Gynaecology I. lecture	Dept. of Obstetrics and G.	Dr. Gábor Németh	3	-	-	Examination	4	**P:** AOK-OAK502: Obstetrics and Gynaecology I.
AOK-OAK502	Obstetrics and Gynaecology I. practice	Dept. of Obstetrics and G.	Dr. Gábor Németh	-	2	-	Signature	-	**P:** AOK-OAK501: Obstetrics and Gynaecology I.
AOK-OAK607	Hungarian Language VII.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	3	-	Term Mark(5)	-	-
AOK-OAK401	Doctor-Patient Communication**	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	-	2	Signature	-	**ER:** AOK-OAK421: Medical Psychology I.
AOK-OAK505	Delivery-Room**	Dept. of Obstetrics and G.	Dr. Gábor Németh	-	Total: 72	-	Signature	-	**P:** AOK-OAK501: Obstetrics and Gynaecology I.
Neptun search: Other elective subjects Subject name: From the list made avaiable by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))***	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV161	Basic Biostatistics	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	-
AOK-OAKV131	Introduction to Aviation and Space Medicine	Dept. of Aviation and Space Medicine	Prof. Sándor Szabó	2	-	-	Evaluation(5)	2	-
AOK-OAKV641	Medical Informatics I.	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	-
AOK-OAKV491	Medical Molecular Biology and Genomics	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV431	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	Total: 8	-	-	Evaluation(5)	2	**SR:** AOK-OAK027: Anatomy, Histology and Embryology III., AOK-OAK093: Medical Physiology II., AOK-OAK141: Basic Surgical Skills, **P:** AOK-OAKV432: Microsurgery
AOK-OAKV432	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	-	Total: 20	-	Signature	-	**P:** AOK-OAKV431: Microsurgery
AOK-OAKV471	Nuclear Medicine	Dept. of Nuclear Med.	Prof. László Pávics	1	-	-	Evaluation(5)	1	-
AOK-OAKV272	Pharmacology Cases II.	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	2	-	Evaluation(5)	2	**SR:** AOK-OAKV271: Pharmacology Cases I.
AOK-OAKV621	The Language of Effective Doctor-Patient Communication I.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-OAKV251	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions lecture	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	2	-	-	Evaluation(5)	2	**P:** AOK-OAKV252: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV252	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions practice	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	Total: 6	-	Signature	-	**P:** AOK-OAKV251: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV661	Neuropathological basis of clinical neurosciences	Dept. of Pathology	Prof. László Tiszlavicz	-	-	2	Term Mark(5)	2	**SR**: AOK-OAK223: Pathology II. lecture
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZV011	Self management support for patients with chronic conditions	Dept. of Medical Rehabiliation and Physical Medicine	Dr. István Kósa	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK181 & AOK-OAK182: Basic Principles of Internal Medicine
AOK-OASZVV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZVD	Demonstrator Activity	The Dept. where the student's demonstrator activity application was accepted		-	2	-	Evaluation(5)	2	**SR:** AOK-OAK024: Anatomy, Histology and Embryology II., AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK113: Medical Chemistry II., AOK-OAK153: Cell Biology and Molecular Genetics II., AOK-OAK031: Nursing Practice
AOK-OASZVT	Student Science Study Group	The Dept. where the student's Student Science Study Group application was accepted		-	-	1	Evaluation(5)	2	-
AOK-OASZV751	Basics of Self-Knowledge in Professional Orientation	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 12	-	Term Mark(5)	1	-

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	**Precondition** (**SR**: subject requirement = completion of the precondition subject(s) in a preceding semester is required; **ER**: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; **P**: parallel completion = register for all subjects in the same semester)
8th (spring) semester (9001AK_N_2020)									**CLINICAL MODULE**
Compulsory Subjects *(* The completion of the course is obligatory in the semester given. / ** Only half of the 4th year students can register in each semester. / *** 2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK241	Introduction to the approach to the critically ill patient-the basic bedside clinical skills lecture	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	1	-		Signature	-	**ER:** AOK-OAK271: Internal Medicine II., **P:** AOK-OAK242: Introduction to the approach to the critically ill patient-the basic bedside clinical skills practice
AOK-OAK242	Introduction to the approach to the critically ill patient-the basic bedside clinical skills practice	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	-	2		Term Mark(5)	2	**P:** AOK-OAK241: Introduction to the approach to the critically ill patient-the basic bedside clinical skills lecture
AOK-OAK273	Internal Medicine III. lecture	Dept. of Internal Medicine	Prof. Csaba Lengyel	5	-	-	Examination	5	**ER:** AOK-OAK271: Internal Medicine II., **P:** AOK-OAK274: Internal Medicine III.
AOK-OAK274	Internal Medicine III. practice	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	2	-	Signature	-	**P:** AOK-OAK273: Internal Medicine III.
AOK-OAK341	Clinical Genetics and Genomics	Dept. of Medical Genetics	Prof. Márta Széll	1	-	-	Evaluation(5)	1	**ER:** AOK-OAK273: Internal Medicine III.
AOK-OAK351	Clinical Oncology	Dept. of Oncotherapy	Prof. Judit Oláh	2	-	-	Examination	2	-
AOK-OAK373	Public Health and Preventive Medicine II. lecture	Dept. of Public Health	Dr. Edit Paulik	2	-	-	Comprehensive Exam	3	**ER:** AOK-OAK371: Public Health and Preventive Medicine I., **P:** AOK-OAK374: Public Health and Preventive Medicine II.
AOK-OAK374	Public Health and Preventive Medicine II. practice	Dept. of Public Health	Dr. Edit Paulik	-	2	-	Signature	-	**P:** AOK-OAK373: Public Health and Preventive Medicine II.
AOK-OAK411	Ethics in Medicine lecture	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	Total 7 (7*1)	-	-	Signature	-	**P**: AOK-OAK412: Ethics in Medicine
AOK-OAK412	Ethics in Medicine practice	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total: 20 (10*2)	-	Term Mark(5)	2	**P**: AOK-OAK411: Ethics in Medicine
AOK-OAK431	Medical Psychology II. lecture	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	Total 5 (5*1)	-	-	Signature	-	**P:** AOK-OAK432: Medical Psychology II.
AOK-OAK432	Medical Psychology II. practice	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 15 (5*3)	-	Term Mark(5)	1	**ER:** AOK-OAK421: Medical Psychology I., **P:** AOK-OAK431: Medical Psychology II.
AOK-OAK463	Radiology II. lecture	Dept. of Radiology	Dr. Kincses Zsigmond Tamás	1	-	-	Examination	2	**ER:** AOK-OAK461: Radiology I., **P:** AOK-OAK464: Radiology II.
AOK-OAK464	Radiology II. practice	Dept. of Radiology	Dr. Kincses Zsigmond Tamás	-	1	-	Signature	-	**P:** AOK-OAK463: Radiology II.
AOK-OAK473	Surgery II. lecture	Dept. of Surgery	Prof. György Lázár	2	-	-	Examination	3	**ER:** AOK-OAK471: Surgery I., **P:** AOK-OAK474: Surgery II.
AOK-OAK474	Surgery II. practice	Dept. of Surgery	Prof. György Lázár	-	2	-	Signature	-	**P:** AOK-OAK473: Surgery II.
AOK-OAK503	Obstetrics and Gynaecology II. lecture	Dept. of Obstetrics and G.	Dr. Gábor Németh	3	-	-	Evaluation(5)	4	**ER:** AOK-OAK501: Obstetrics and Gynaecology I., **P:** AOK-OAK504: Obstetrics and Gynaecology II.
AOK-OAK504	Obstetrics and Gynaecology II. practice	Dept. of Obstetrics and G.	Dr. Gábor Németh	-	2	-	Signature	-	**P:** AOK-OAK503: Obstetrics and Gynaecology II.
AOK-OAK611	Family Medicine	Dept. of Family Medicine	Prof. Albert Varga	2	-	-	Examination	2	-
AOK-OAK608	Hungarian Language VIII.*	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	3	-	Comprehensive Exam	-	**SR:** AOK-OAK607: Hungarian Language VII.
AOK-OAK481	Surgery Summer Practice*	-	-	-	Total: 120	-	Signature	-	-
AOK-OAK401	Doctor-Patient Communication**	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	-	2	Signature	-	**SR:** AOK-OAK421: Medical Psychology I.
AOK-OAK505	Delivery-Room**	Dept. of Obstetrics and G.	Dr. Gábor Németh	-	Total: 72	-	Signature	-	**P:** AOK-OAK503: Obstetrics and Gynaecology II.
AOK-OAK361	Examination in Behavioural Sciences*	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	-	-	Comprehensive Exam	-	**ER**: AOK-OAK421-422: Medical Psychology I., AOK-OAK431-432: Medical Psychology II., AOK-OAK411-412: Ethics in Medicine, AOK-OAK401: Doctor-Patient Communication
Neptun search: Other elective subjects Subject name: From the list made avaiable by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))***	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV171	Advanced Biostatistics	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	**SR:** AOK-OAKV161: Basic Biostatistics
AOK-OAKV351	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	1	-	-	Evaluation(5)	2	**SR:** AOK-OAK141 & AOK-OAK142: Basic Surgical Skills **P:** AOK-OAKV352: Advanced Surgical Skills
AOK-OAKV352	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	-	1	-	Signature	-	**SR:** AOK-OAK141 & AOK-OAK142: Basic Surgical Skills **P:** AOK-OAKV351: Advanced Surgical Skills
AOK-OAKV331	Child and Adolescent Psychiatry, Mentalhygiene	Dept. of Child and Adolescent Psychiatry	Dr. Krisztina Kapornai	2	-	-	Evaluation(5)	2	-
AOK-OAKV381	Clinical Immunology	Dept. of Dermatology	Prof. Lajos Kemény	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK271: Internal Medicine II.
AOK-OAKV401	Laboratory Diagnostics: Use of Laboratory Tests in Practice	Dept. of Laboratory Medicine	Dr. Földesi Imre	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK213: Microbiology II.
AOK-OAKV431	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	Total: 8	-	-	Evaluation(5)	2	**SR:** AOK-OAK027: Anatomy, Histology and Embryology III., AOK-OAK093: Medical Physiology II., AOK-OAK141: Basic Surgical Skills, **P:** AOK-OAKV432: Microsurgery
AOK-OAKV432	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	-	Total: 20	-	Signature	-	**P:** AOK-OAKV431: Microsurgery
AOK-OAKV441	Molecular Developmental-Biology	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	**SR**: AOK-OAK153: Cell Biology and Molecular Genetics II.
AOK-OAKV271	Pharmacology Cases I.	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	2	-	Evaluation(5)	2	-
AOK-OAKV591	Social and Health Policy	Dept. of Public Health	Dr. Edit Paulik	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK371: Public Health and Preventive Medicine I.
AOK-OAKV061	The Clinical Basics of Aviation and Space Medicine	Dept. of Aviation and Space Medicine	Prof. Sándor Szabó	2	-	-	Evaluation(5)	2	-
AOK-OAKV622	The Language of Effective Doctor-Patient Communication II.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-OAKV581	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	1	-	-	Evaluation(5)	2	**P:** AOK-OAKV582: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV582	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	1	-	Signature	-	**P:** AOK-OAKV581: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV561	Sports Medicine	Dept. of Sports Medicine	Dr. László Török	2	-	-	Evaluation(5)	2	-
AOK-OAKV181	Foundations of Evidence Based Medicine	Dept. of Public Health	Dr. Edit Paulik	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK121: Medical Sociology, AOK-OAK101 & AOK-OAK102 & AOK-OAK103: Medical Physics I.
AOK-OAKV051	Biochemical Basics of Preventive Medicine	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	-
AOK-OAKV671	Clinical neuropathology of neurodegenerative diseases	Dept. of Pathology	Prof. László Tiszlavicz	-	-	2	Term Mark(5)	2	**SR**: AOK-OAK223: Pathology II. lecture

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (**SR**: subject requirement = completion of the precondition subject(s) in a preceding semester is required; **ER**: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; **P**: parallel completion = register for all subjects in the same semester)
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZVV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZVD	Demonstrator Activity	The Dept. where the student's demonstrator activity application was accepted		-	2	-	Evaluation(5)	2	**SR:** AOK-OAK024: Anatomy, Histology and Embryology II., AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK113: Medical Chemistry II., AOK-OAK153: Cell Biology and Molecular Genetics II., AOK-OAK031: Nursing Practice
AOK-OASZVT	Student Science Study Group	The Dept. where the student's Student Science Study Group application was accepted		-	-	1	Evaluation(5)	2	-
AOK-OASZV411	Chemical Misconceptions	Dept. of Med. Chemistry	Prof. Tamás Martinek	2	-	-	Evaluation(5)	2	-
AOK-OASZV221	Introduction to Toxicology	Dept. of Med. Chemistry	Prof. Tamás Martinek	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK053: Biochemistry II., AOK-OAK093: Medical Physiology II.
AOK-OASZV071	Travel Medicine	Dept. of Aviation and Space Medicine	Prof. Sándor Szabó	Total 30	-	-	Evaluation(5)	2	**SR**: Basic Module
AOK-OASZV181	English and Hungarian Terminology of Doctor-Patient Communication	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-OASZV681	The role of sonography in the critical care	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	-	-	1	Evaluation(5)	1	**SR:** AOK-OAK0271: Head, Neck and Neuroanatomy Lecture, AOK-OAK271: Internal Medicine II.
AOK-OASZV741	Medically Unexplained Physical Symptoms MUPS in Medical Praxis	Dept. of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 24	-	Term Mark(5)	1	**ER**: AOK-OAK361: Examination in Behavioural Sciences
AOK-OASZV751	Basics of Self-Knowledge in Professional Orientation	Dept. of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 12	-	Term Mark(5)	1	-
AOK-OASZV771	3D printing in life sciences	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	-

9th (fall) semester (9001AK_N_2020) **CLINICAL MODULE**

Compulsory Subjects *(*For groups 1, 2, 3 ** for groups 4,5,6 *** The credits for the completion of AOK-OAKVSZ1 Thesis Plan I. count towards the "compulsory elective" subject category. ****2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK243	Anesthesiology and Intensive Therapy I. lecture	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	2	-	-	Evaluation(5)	1	**ER:** AOK-OAK291: Pharmacology and pharmacotherapy II., **P:** AOK-OAK244: Anesthesiology and Intensive Therapy I.
AOK-OAK244	Anesthesiology and Intensive Therapy I. practice	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	-	1	-	Signature	-	**P:** AOK-OAK243: Anesthesiology and Intensive Therapy I.
AOK-OAK275	Infectology - Infectious Diseases	Dept. of Internal Medicine	Prof. Csaba Lengyel	2	-	-	Examination	3	**ER:** AOK-OAK291: Pharmacology and pharmacotherapy II., **P:** AOK-OAK276: Internal Medicine IV. Practice
AOK-OAK276	Internal Medicine IV. Practice	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	2	-	Signature	-	**P:** AOK-OAK275: Infectology - Infectious Diseases
AOK-OAK352	Modern Complex Therapy of Malignant Diseases in Clinical Practice	Dept. of Oncology	Prof. Judit Oláh	-	-	1	Term Mark(5)	2	**SR:** AOK-OAK351: Clinical Oncology
AOK-OAK311	Pediatrics I. Practice	Dept. of Pediatrics	Dr. Csaba Bereczki	-	2	-	Signature	-	**P:** AOK-OAK313: Pediatrics I. Lecture, AOK-OAK312: Pediatrics I. Seminar
AOK-OAK312	Pediatrics I. Seminar	Dept. of Pediatrics	Dr. Csaba Bereczki	-	-	2	Term Mark(5)	5	**ER:** AOK-OAK291: Pharmacology and pharmacotherapy II., AOK-OAK273: Internal Medicine III. **P:** AOK-OAK311: Pediatrics I. Practice, AOK-OAK313: Pediatrics I. Lecture
AOK-OAK313	Pediatrics I. Lecture	Dept. of Pediatrics	Dr. Csaba Bereczki	1	-	-	Signature	-	**P:** AOK-OAK311: Pediatrics I. Practice, AOK-OAK312: Pediatrics I. Seminar
AOK-OAK331	Forensic Medicine I. lecture	Dept. of Forensic Medicine	Dr. Éva Kereszty	1	-	-	Examination	3	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK332: Forensic Medicine I.
AOK-OAK332	Forensic Medicine I. practice	Dept. of Forensic Medicine	Dr. Éva Kereszty	-	2	-	Signature	-	**P:** AOK-OAK331: Forensic Medicine I.
AOK-OAK381	Neurology I. lecture	Dept. of Neurology	Prof. Péter Klivényi	1	-	-	Examination	3	**ER:** AOK-OAK273: Internal Medicine III., AOK-OAK291: Pharmacology and pharmacotherapy II., **P:** AOK-OAK382:
AOK-OAK382	Neurology I. practice	Dept. of Neurology	Prof. Péter Klivényi	-	2	-	Signature	-	**P:** AOK-OAK381: Neurology I.
AOK-OAK441	Psychiatry I. lecture	Dept. of Psychiatry	Prof. János Kálmán	1	-	-	Evaluation(5)	2	**ER**: AOK-OAK273: Internal Medicine III., **P:** AOK-OAK442: Psychiatry I.
AOK-OAK442	Psychiatry I. practice	Dept. of Psychiatry	Prof. János Kálmán	-	1	-	Signature	-	**P:** AOK-OAK441: Psychiatry I.
AOK-OAK475	Surgery III. lecture	Dept. of Surgery	Prof. György Lázár	1	-	-	Evaluation(5)	2	**ER:** AOK-OAK473: Surgery II., **P:** AOK-OAK476: Surgery III.
AOK-OAK476	Surgery III. practice	Dept. of Surgery	Prof. György Lázár	-	1	-	Signature	-	**P:** AOK-OAK475: Surgery III.
AOK-OAK251	Oral and Maxillofacial Surgery, Stomatology lecture	Department of Oral and Maxillofacial Surgery	Prof. József Piffkó	1	-	-	Examination	2	**ER:** AOK-OAK273: Internal Medicine III., **P**: AOK-OAK252: Stomatology and Oral Surgery
AOK-OAK252	Oral and Maxillofacial Surgery, Stomatology seminar	Department of Oral and Maxillofacial Surgery	Prof. József Piffkó	-	-	1	Signature	-	**P:** AOK-OAK251: Stomatology and Oral Surgery
AOK-OAK281	Dermatology lecture*	Dept. of Dermatology	Prof. Lajos Kemény	2	-	-	Examination	4	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK282: Dermatology
AOK-OAK282	Dermatology practice*	Dept. of Dermatology	Prof. Lajos Kemény	-	3	-	Signature	-	**P:** AOK-OAK281: Dermatology
AOK-OAK491	Ophthalmology lecture*	Dept. of Ophthalmology	Dr. Edit Tóth-Molnár	2	-	-	Examination	3	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK492: Ophthalmology
AOK-OAK492	Ophthalmology practice*	Dept. of Ophthalmology	Dr. Edit Tóth-Molnár	-	2	-	Signature	-	**P:** AOK-OAK491: Ophthalmology
AOK-OAK301	Oto-Rhino-Laryngology lecture**	Dept. of Oto-Rhino-Laryngology	Prof. László Rovó	2	-	-	Examination	4	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK302: Oto-Rhino-Laryngology
AOK-OAK302	Oto-Rhino-Laryngology practice**	Dept. of Oto-Rhino-Laryngology	Prof. László Rovó	-	3	-	Signature	-	**P:** AOK-OAK301: Oto-Rhino-Laryngology
AOK-OAK521	Urology lecture**	Dept. of Urology	Dr. Zoltán Bajory	1	-	-	Examination	2	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK522: Urology
AOK-OAK522	Urology practice**	Dept. of Urology	Dr. Zoltán Bajory	-	2	-	Signature	-	**P:** AOK-OAK521: Urology
AOK-OAKVSZ1	Thesis plan I.***	Albert Szent-Györgyi Medical School		-	-	2	Term Mark(5)	5	-
Neptun search: Other elective subjects Subject name: From the list made avaiable by the sport center	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))****	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV161	Basic Biostatistics	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	-
AOK-OAKV291	How to use microbiology laboratory results to diagnose and treat infectious diseases;	Dept. of Clinical Microbiology	Dr. habil Katalin Burián	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK271: Internal Medicine II.
AOK-OAKV131	Introduction to Aviation and Space Medicine	Dept. of Aviation and Space Medicine	Prof. Sándor Szabó	2	-	-	Evaluation(5)	2	-
AOK-OAKV641	Medical Informatics I.	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	-
AOK-OAKV491	Medical Molecular Biology and Genomics	Dept. of Med. Biology	Prof. Zsolt Boldogkői	1	-	-	Evaluation(5)	1	-
AOK-OAKV431	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	Total: 8	-	-	Evaluation(5)	2	**SR:** AOK-OAK027: Anatomy, Histology and Embryology III., AOK-OAK093: Medical Physiology II., AOK-OAK141: Basic Surgical Skills, **P:** AOK-OAKV432: Microsurgery
AOK-OAKV432	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	-	Total: 20	-	Signature	-	**P:** AOK-OAKV431: Microsurgery
AOK-OAKV471	Nuclear Medicine	Dept. of Nuclear Med.	Prof. László Pávics	1	-	-	Evaluation(5)	1	-
AOK-OAKV272	Pharmacology Cases II.	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	2	-	Evaluation(5)	2	**SR:** AOK-OAKV271: Pharmacology Cases I.
AOK-OAKV621	The Language of Effective Doctor-Patient Communication I.	Dept. for Medical Communication and	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-OAKV551	Rheumatology	Dept. of Rheumatology and Immunology	Prof. László Kovács	2	-	-	Evaluation(5)	2	**SR**: AOK-OAK421: Medical Psychology I.
AOK-OAKV251	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions lecture	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	2	-	-	Evaluation(5)	2	**P:** AOK-OAKV252: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV252	Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions practice	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	Total: 6	-	Signature	-	**P:** AOK-OAKV251: Electrophysiology: ion channels and ion transport mechanisms in the regulatin of cell functions
AOK-OAKV661	Neuropathological basis of clinical neurosciences	Dept. of Pathology	Prof. László Tiszlavicz	-	-	2	Term Mark(5)	2	**SR**: AOK-OAK223: Pathology II.

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (**SR**: subject requirement = completion of the precondition subject(s) in a preceding semester is required; **ER**: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; **P**: parallel completion = register for all subjects in the same semester)
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZV011	Self management support for patients with chronic conditions	Dept. of Preventive Medicine	Dr. István Kósa	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK181 & AOK-OAK182: Basic Principles of Internal Medicine
AOK-OASZVV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZVD	Demonstrator Activity	The Dept. where the student's demonstrator activity application was accepted		-	2	-	Evaluation(5)	2	**SR:** AOK-OAK024: Anatomy, Histology and Embryology II., AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK113: Medical Chemistry II., AOK-OAK153: Cell Biology and Molecular Genetics II., AOK-OAK031: Nursing Practice
AOK-OASZVT	Student Science Study Group	The Dept. where the student's Student Science Study Group application was accepted		-	-	1	Evaluation(5)	2	-
AOK-OASZV041	Biophysics of Hearing. Objective and Subjective Audiometry	Dept. of Oto-Rhino-Laryngology	Prof. László Rovó	1	-	-	Evaluation(5)	1	**SR:** AOK-OAK273: Internal Medicine III.
AOK-OASZV141	Diseases of the Temporomandibular System	Dept. of Prosthodontics and Oral Biology	Dr. Márta Radnai	1	-	-	Evaluation(5)	2	**SR:** Pre-Clinical Module **P:** AOK-OASZV142: Diseases of the Temporomandibular System
AOK-OASZV142	Diseases of the Temporomandibular System	Dept. of Prosthodontics and Oral Biology	Dr. Márta Radnai	-	1	-	Signature	-	**P:** AOK-OASZV141: Diseases of the Temporomandibular System
AOK-OASZV131	Sexual Disorders - Gynecological Aspects	Dept. of Obstetrics and G.	Dr. Gábor Németh	1	-	-	Evaluation(5)	1	**SR:** AOK-OAK231: Surgical Propedeutics
AOK-OASZV541	Modern Approach of the Gynecological Laparoscopy	Dept. of Obstetrics and G.	Dr. Gábor Németh	1	-	-	Evaluation(5)	1	**SR:** AOK-OAK231: Surgical Propedeutics
AOK-OASZV701	Medical History Taking in Hungarian I.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	**SR:** AOK-OAK608: Hungarian Language VIII.
AOK-OASZV641	Thesis writing in English-academic language and style	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	**SR**: AOK-OAK373 Public Health and Preventive Medicine II. lecture
AOK-OASZV751	Basics of Self-Knowledge in Professional Orientation	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 12	-	Term Mark(5)	1	-
AOK-OASZV781	Sexual medicine	Dept. of Obstetrics and G.	Dr. Gábor Németh	-	-	2	Evaluation(5)	2	**SR:** AOK-OAK503: Obstetrics and Gynaecology II.
AOK-OASZV801	Cerebrovascular diseases of the central nervous system (stroke, aneurysm, angioma) and their neurosurgical treatment options (surgery, intervention, conservative therapy)	Dept. of Neurosurgery	Prof. Pál Barzó	Total 14	-	-	Evaluation(5)	1	**SR**: Pre-Clinical Module

10th (spring) semester (9001AK_N_2020) **CLINICAL MODULE**

Compulsory Subjects *(* For groups 4, 5, 6 ** For groups 1, 2, 3 *** The credits for the completion of AOK-OAKVSZ2 Thesis Plan II. count towards the "compulsory elective" subject category. ****2 semesters of Physical Education have to be completed until the end of the Clinical Module. Physical Education courses are worth 2 elective credits each, but a maximum of 4 credits can be obtained for students during their studies in this way)*									
AOK-OAK245	Anesthesiology and Intensive Therapy II. lecture	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	2	-	-	Examination	2	**ER:** AOK-OAK243: Anesthesiology and Intensive Therapy I., **P:** AOK-OAK246: Anesthesiology and Intensive Therapy II.
AOK-OAK246	Anesthesiology and Intensive Therapy II. practice	Dept. of Anesthesiology and Intensive Therapy	Prof. Babik Barna	-	1	-	Signature	-	**P:** AOK-OAK245: Anesthesiology and Intensive Therapy II.
AOK-OAK261	Healthcare Management	Dept. of Health Economics	Dr. Norbert Buzás	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK373: Public Health and Preventive Medicine II.
AOK-OAK277	Internal Medicine V. lecture	Dept. of Internal Medicine	Prof. Csaba Lengyel	2	-	-	Examination	3	**ER:** AOK-OAK291: Pharmacology and pharmacotherapy II., **P:** AOK-OAK278: Internal Medicine V.
AOK-OAK278	Internal Medicine V. practice	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	Total 16	-	Signature	-	**P:** AOK-OAK277: Internal Medicine V.
AOK-OAK314	Pediatrics II. Practice	Dept. of Pediatrics	Dr. Csaba Bereczki	-	2	-	Signature	-	**P:** AOK-OAK315: Pediatrics II. Seminar
AOK-OAK315	Pediatrics II. Seminar	Dept. of Pediatrics	Dr. Csaba Bereczki	-	-	2	Term Mark(5)	4	**SR:** AOK-OAK313: Pediatrics I. Lecture, AOK-OAK312: Pediatrics I. Seminar, **P:** AOK-OAK314: Pediatrics II. Practice
AOK-OAK321	Neurosurgery lecture	Dept. of Neurosurgery	Prof. Pál Barzó	1	-	-	Evaluation(5)	2	**SR:** AOK-OAK475: Surgery III. **P:** AOK-OAK322: Neurosurgery
AOK-OAK322	Neurosurgery practice	Dept. of Neurosurgery	Prof. Pál Barzó	-	1	-	Signature	-	**P:** AOK-OAK321: Neurosurgery
AOK-OAK333	Forensic Medicine II. lecture	Dept. of Forensic Medicine	Dr. Éva Kereszty	1	-	-	Examination	3	**ER:** AOK-OAK331: Forensic Medicine I., **P:** AOK-OAK334: Forensic Medicine II
AOK-OAK334	Forensic Medicine II. practice	Dept. of Forensic Medicine	Dr. Éva Kereszty	-	2	-	Signature	-	**P:** AOK-OAK333: Forensic Medicine II.
AOK-OAK383	Neurology II. lecture	Dept. of Neurology	Prof. Péter Klivényi	1	-	-	Signature	-	**P:** AOK-OAK384: Neurology II.
AOK-OAK384	Neurology II. practice	Dept. of Neurology	Prof. Péter Klivényi	-	1	-	Term Mark(5)	2	**ER:** AOK-OAK381: Neurology I., **P:** AOK-OAK384: Neurology II.
AOK-OAK443	Psychiatry II. lecture	Dept. of Psychiatry	Prof. János Kálmán	2	-	-	Examination	3	**ER:** AOK-OAK442: Psychiatry I., AOK-OAK291: Pharmacology and pharmacotherapy II., **P:** AOK-OAK444: Psychiatry II.
AOK-OAK444	Psychiatry II. practice	Dept. of Psychiatry	Prof. János Kálmán	-	1	-	Signature	-	**P:** AOK-OAK443: Psychiatry II.
AOK-OAK511	Traumatology lecture	Dept. of Traumatology	Prof. Endre Varga	2	-	-	Examination	3	**ER:** AOK-OAK475: Surgery III., **P:** AOK-OAK512: Traumatology
AOK-OAK512	Traumatology practice	Dept. of Traumatology	Prof. Endre Varga	-	2	-	Signature	-	**P:** AOK-OAK511: Traumatology
AOK-OAK281	Dermatology lecture*	Dept. of Dermatology	Prof. Lajos Kemény	2	-	-	Examination	4	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK282: Dermatology
AOK-OAK282	Dermatology practice*	Dept. of Dermatology	Prof. Lajos Kemény	-	3	-	Signature	-	**P:** AOK-OAK281: Dermatology
AOK-OAK491	Ophthalmology lecture*	Dept. of Ophthalmology	Dr. Edit Tóth-Molnár	2	-	-	Examination	3	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK492: Ophthalmology
AOK-OAK492	Ophthalmology practice*	Dept. of Ophthalmology	Dr. Edit Tóth-Molnár	-	2	-	Signature	-	**P:** AOK-OAK491: Ophthalmology
AOK-OAK301	Oto-Rhino-Laryngology lecture**	Dept. of Oto-Rhino-Laryngology	Prof. László Rovó	2	-	-	Examination	4	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK302: Oto-Rhino-Laryngology
AOK-OAK302	Oto-Rhino-Laryngology practice**	Dept. of Oto-Rhino-Laryngology	Prof. László Rovó	-	3	-	Signature	-	**P:** AOK-OAK301: Oto-Rhino-Laryngology
AOK-OAK521	Urology lecture**	Dept. of Urology	Dr. Zoltán Bajory	1	-	-	Examination	2	**ER:** AOK-OAK273: Internal Medicine III., **P:** AOK-OAK522: Urology
AOK-OAK522	Urology practice**	Dept. of Urology	Dr. Zoltán Bajory	-	2	-	Signature	-	**P:** AOK-OAK521: Urology
AOK-OAKVSZ2	Thesis Plan II.***	Albert Szent-Györgyi Medical School		-	-	2	Term Mark(5)	5	**SR:** AOK-OAKVSZ1: Thesis plan I.
Neptun search: Other elective subjects Subject name: From the list made avalable by the sport centar	Physical Education (Actual courses are on neptun (e.g., yoga, badminton etc.))****	Sport Center	Dr. Margaréta Tokodi	-	2	-	Signature	spec	-

SUGGESTED STUDY PLAN - MEDICINE - 2024/2025

Course Code	Course	Dept.	Head of Dept.	Theory Hrs/ week	Practice Hrs/ week	Seminar Hrs/ week	Form of exam	Credit	Precondition (SR: subject requirement = completion of the precondition subject(s) in a preceding semester is required; ER: examination requirement = passing the examination of the precondition subject(s) in the same semester is required; P: parallel completion = register for all subjects in the same semester)
Compulsory Elective Subjects *(Complete 45 credits worth of compulsory elective subjects by the end of the Clinical Module.)*									
AOK-OAKV171	Advanced Biostatistics	Dept. of Med. Physics and Informatics	Prof. Ferenc Peták	2	-	-	Evaluation(5)	2	**SR:** AOK-OAKV161: Basic Biostatistics
AOK-OAKV351	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	1	-	-	Evaluation(5)	2	**SR:** AOK-OAK141 & AOK-OAK142: Basic Surgical Skills **P:** AOK-OAKV352: Advanced Surgical Skills
AOK-OAKV352	Advanced Surgical Skills	Inst. of Surgical Research	Prof. Mihály Boros	-	1	-	Signature	-	**SR:** AOK-OAK141 & AOK-OAK142: Basic Surgical Skills **P:** AOK-OAKV351: Advanced Surgical Skills
AOK-OAKV581	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	1	-	-	Evaluation(5)	2	**P:** AOK-OAKV582: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV582	Cardiac Electrophysiology as a Basic Property of Cardiac Function	Dept. of Pharmacology and Pharmacotherapy	Prof. István Baczkó	-	1	-	Signature	-	**P:** AOK-OAKV581: Cardiac Electrophysiology as a Basic Property of Cardiac Function
AOK-OAKV291	How to use microbiology laboratory results to diagnose and treat infectious diseases; interactive; problem-based case discussions	Dept. of Clinical Microbiology	Dr. habil Katalin Burián	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK271: Internal Medicine II.
AOK-OAKV331	Child and Adolescent Psychiatry, Mentalhygiene	Dept. of Child and Adolescent Psychiatry	Dr. Krisztina Kapornai	2	-	-	Evaluation(5)	2	-
AOK-OAKV381	Clinical Immunology	Dept. of Dermatology	Prof. Lajos Kemény	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK271: Internal Medicine II.
AOK-OAKV401	Laboratory Diagnostics: Use of Laboratory Tests in Practice	Dept. of Laboratory Medicine	Dr. Földesi Imre	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK213: Microbiology II.
AOK-OAKV431	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	Total: 8	-	-	Evaluation(5)	2	**SR:** AOK-OAK027: Anatomy, Histology and Embryology III., AOK-OAK093: Medical Physiology II., AOK-OAK141: Basic Surgical Skills. **P:** AOK-OAKV432: Microsurgery
AOK-OAKV432	Microsurgery	Inst. of Surgical Research	Prof. Mihály Boros	-	Total: 20	-	Signature	-	**P:** AOK-OAKV431: Microsurgery
AOK-OAKV441	Molecular Developmental-Biology	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK153: Cell Biology and Molecular Genetics II.
AOK-OAKV591	Social and Health Policy	Dept. of Public Health	Dr. Edit Paulik	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK371: Public Health and Preventive Medicine I.
AOK-OAKV061	The Clinical Basics of Aviation and Space Medicine	Dept. of Aviation and Space Medicine	Prof. Sándor Szabó	2	-	-	Evaluation(5)	2	-
AOK-OAKV622	The Language of Effective Doctor-Patient Communication II.	Dept. for Medical Communication and	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-OAKV561	Sports Medicine	Dept. of Sports Medicine	Dr. László Török	2	-	-	Evaluation(5)	2	-
AOK-OAKV501	Rehabilitation medicine – basics of theory and daily practice	Dept. of Medical Rehabiliation and Physical Medicine	Dr. István Kósa	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK181: Basic Principles of Internal Medicine (Basics of Haematology)
AOK-OAKV181	Foundations of Evidence Based Medicine	Dept. of Public Health	Dr. Edit Paulik	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK121: Medical Sociology, AOK-OAK101 & AOK-OAK102 & AOK-OAK103: Medical Physics I.
AOK-OAKV051	Biochemical Basics of Preventive Medicine	Dept. of Biochemistry	Dr. Tamás Csont	2	-	-	Evaluation(5)	2	-
AOK-OAKV671	Clinical neuropathology of neurodegenerative diseases	Dept. of Pathology	Prof. László Tiszlavicz	-	-	2	Term Mark(5)	2	**SR**: AOK-OAK223: Pathology II.
Elective Subjects *(Complete 18 credits worth of elective subjects by the end of the Clinical Module.)*									
AOK-OASZVV	Clinical Voluntary Work	Departments of the Albert Szent-Györgyi Medical School		-	2	-	Term Mark(5)	2	-
AOK-OASZVD	Demonstrator Activity	The Dept. where the student's demonstrator activity application was accepted		-	2	-	Evaluation(5)	2	**SR:** AOK-OAK024: Anatomy, Histology and Embryology II., AOK-OAK104 & AOK-OAK105 & AOK-OAK106: Medical Physics II., AOK-OAK107 & AOK-OAK108: Medical Statistics, AOK-OAK113: Medical Chemistry II., AOK-OAK153: Cell Biology and Molecular Genetics II., AOK-OAK031: Nursing Practice
AOK-OASZVT	Student Science Study Group	The Dept. where the student's Student Science Study Group application was accepted		-	-	1	Evaluation(5)	2	-
AOK-OASZV702	Medical History Taking in Hungarian II.	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	**SR:** AOK-OAK608: Hungarian Language VIII.
AOK-OASZV411	Chemical Misconceptions	Dept. of Med. Chemistry	Prof. Tamás Martinek	2	-	-	Evaluation(5)	2	-
AOK-OASZV071	Travel Medicine	Dept. of Aviation and Space Medicine	Prof. Sándor Szabó	Total 30	-	-	Evaluation(5)	2	**SR**: Basic Module
AOK-OASZV221	Introduction to Toxicology	Dept. of Med. Chemistry	Prof. Tamás Martinek	2	-	-	Evaluation(5)	2	**SR:** AOK-OAK053: Biochemistry II., AOK-OAK093: Medical Physiology II.
AOK-OASZV181	English and Hungarian Terminology of Doctor-Patient Communication	Dept. for Medical Communication and Translation	Dr. Csilla Keresztes	-	2	-	Term Mark(5)	2	-
AOK-OASZV741	Medically Unexplained Physical Symptoms MUPS in Medical Praxis	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 24	-	Term Mark(5)	1	**ER**: AOK-OAK361: Examination in Behavioural Sciences
AOK-OASZV751	Basics of Self-Knowledge in Professional Orientation	Dept.of Behavioural Sciences	Dr. Oguz Kelemen	-	Total 12	-	Term Mark(5)	1	-
AOK-OASZV791	Clinical neonatology	Dept. of Pediatrics	Dr. Csaba Bereczki	-	-	Total 14	Evaluation(5)	1	**SR**: AOK-OAK312: Pediatrics I. Seminar

*******Without the completion of the every compulsory subject in the clinical module, you cannot take any compulsory subjects from the final module below.*******

Clinical Module completion requirements: completion of all basic, pre-clinical, clinical module compulsory subjects--including two semesters of physical education--, 45 credits worth of compulsory elective subjects and 18 credits worth of elective subjects over the basic, pre-clinical and clinical module

(9001AK_N_2020) **FINAL MODULE**

Compulsory Subjects									
AOK-OAKSZE	Preparation of the Thesis	Albert Szent-Györgyi Medical School	-	-	-	2	Term Mark(5)	10	**SR:** AOK-OAKVSZ2: Thesis Plan II.
AOK-OAK531	Internal Medicine	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	240	-	Comprehensive Exam	10	-
AOK-OAK532	Oncological Module in Internal Medicine Practice	Dept. of Oncotherapy	Prof. Judit Oláh	-	30	-	Signature	-	-
AOK-OAK533	General Practice	Dept. of Internal Medicine	Prof. Csaba Lengyel	-	30	-	Signature	-	-
AOK-OAK541	Pediatrics	Dept. of Pediatrics	Dr. Csaba Berecki	-	210	-	Comprehensive Exam	8	-
AOK-OAK542	District Pediatric Consultation	Dept. of Pediatrics	Dr. Csaba Berecki	-	30	-	Signature	-	-
AOK-OAK551	Neurology	Dept. of Neurology	Prof. Péter Klivényi	-	120	-	Comprehensive Exam	4	-
AOK-OAK561	Psychiatry	Dept. of Psychiatry	Prof. János Kálmán	-	120	-	Comprehensive Exam	4	-
AOK-OAK571	Surgery	Dept. of Surgery	Prof. György Lázár	-	180	-	Comprehensive Exam	9	-
AOK-OAK572	Oncological Module in Surgery Practice	Dept. of Oncotherapy	Prof. Judit Oláh	-	30	-	Signature	-	-
AOK-OAK573	Traumatology	Dept. of Traumatology	Prof. Endre Varga	-	30	-	Signature	-	-
AOK-OAK574	Emergency Medicine	Dept. of Emergency Medicine	Dr. Zoltán Pető	-	30	-	Signature	-	-
AOK-OAK581	Obstetrics and Gynaecology	Dept. of Obstetrics and Gynaecology	Dr. Gábor Németh	-	120	-	Comprehensive Exam	5	-
AOK-OAK582	Oncological Module in Obstetrics and Gynaecology Practice	Dept. of Oncotherapy	Prof. Judit Oláh	-	30	-	Signature	-	-

6 th year (11th and 12th semester)
Academic year 2024/2025

The internships should be accomplished principally at the clinics and hospitals of the University; however, they can be also accomplished abroad, provided the students submit the acceptance letter of the clinic/hospital and have the permission of the department concerned before starting the practice. The accomplishment of the practices must be verified officially to the Secretariat as the precondition for starting the next practice.

Two practices can be accomplished continuously and the final examinations can be taken in the week following the accomplishment of the practices. In the sixth year interns can be assigned to duty service as physicians.

If the student fails an examination, it must be repeated together with the half of the practice period.

If the student fails to submit the thesis by the deadline given - or fails to submit it by the deadline of postponement, his/her internships and examinations must be suspended.

The State Board Examination consists of: Thesis defence, Test (Multiple Choice Questions), Oral examination (theory) and Practical examination (bedside examination).

Further details are available in the relevant Internship Guide.

COMPULSORY PRACTICES IN SUMMER

Summer practice:
1st, 3rd and 4th year students are required to complete a four-week compulsory summer practice in a hospital or clinic which must be accredited by the country concerned. At the completion of the practice an "Evaluation form" should be filled in, signed, stamped and sent directly from the hospital/clinic or submitted by the student in a sealed envelope. (The form can be downloaded from our website). A "Letter of Acceptance" issued by the hospital/clinic, furthermore a certificate that the hospital/clinic is accredited by the country concerned has to be presented at the Foreign Students' Secretariat **until May 2025. Please check the relevant Info Sheet for the exact date.**

Students should register for completing a practice at least one month before its beginning. Practice fee must be paid before starting the practice.

1st year medical students have to perform a four-week Nursing practice.

Departments at the University of Szeged:

1st Department of Internal Medicine
2nd Department of Internal Medicine
Obstetrics and Gynecology Department
Department of Surgery
Neurosurgery Department
Neurology Department
Psychiatry Department
Pediatrics Department
Ophthalmology Department
Oto-Rhino-Laryngology and Head-Neck Surgery Department
Urology Department
Pulmonology Department
Traumatology Department
Department of Oral and Maxillofacial Surgery

3rd year medical students have to perform a four-week Internal Medicine practice.

Departments at the University of Szeged:

1st Department of Internal Medicine
Division of Endocrinology
2nd Department of Internal Medicine

4th year medical students have to perform a four-week General Surgery practice.

Departments at the University of Szeged:

Department of Surgery

INTERIM PRACTICE

4th year medical students have to complete a two-day Obstetrics and Gynaecology Delivery-Room Practice in one semester.

EXTRACURRICULAR SCIENTIFIC ACTIVITY

Department of Anatomy, Histology and Embryology Department

1. Fostering the regenerative processes in the central nervous system
Prof. Antal Nógrádi

2. Regenerative capacity of neural stem cells
Dr. Krisztián Pajer

3. Molecular mechanisms leading to axon degeneration
Dr. Róbert Adalbert

4. Cellular and molecular changes in hippocampal sclerosis
Prof. András Mihály

5. Cellular and molecular changes in hippocampal sclerosis
Prof. András Mihály

6. Pain mechanisms: role of gangliosides in nociceptor function
Dr. Péter Sántha, Prof. Gábor Jancsó

7. Mechanisms of neuropathic pain: structural and other neuroplastic changes following peripheral nerve injuries
Dr. Péter Sántha, Prof. Gábor Jancsó

Department Medical Biology

1. ***Host-Microbe Interactions in Obesity and Comorbidities***
   Prof. Dr. Zsolt Boldogkői (MSc, PhD, DSc) and Dr. habil. Dóra Tombácz (MSc, PhD)
2. ***Transcriptional analysis of herpesviruses***
   Prof. Dr. Zsolt Boldogkői (MSc, PhD, DSc) and Dr. habil. Dóra Tombácz (MSc, PhD)
3. ***Analysis of Transcriptional Interference Networks (TINs)***
   Prof. Dr. Zsolt Boldogkői (MSc, PhD, DSc) and Dr. habil. Dóra Tombácz (MSc, PhD)
4. ***Virome and aging: a longitudinal multi-OMICS study using dog as a model***
5. ***Organization principles of the transcriptome: an integrated study using virus models***

Department for Medical Communication and Translation Studies

Supervisor	Topic
Eszter Asztalos-Zsembery	Neuroimaging of second-language reading comprehension
Eszter Asztalos-Zsembery in collaboration with dr. Attila Nagy, Assistant Professor (Department of Medical Physics and Informatics)	Language localization of 3D Slicer image computing platform
Gergely Brandl	History of Medicine and the Healthcare System with Special Regards to Modern Times
Réka Csenki-Bozsó	Medical students' mother tongue, second language and early start in foreign language(s)
dr. Endre Hamvas	Magical backgrounds of misconceptions of modern pseudo-medical theories
dr. Csilla Keresztes	Barriers in doctor-patient communication
Margit Skadra	Communication barriers in the German healthcare system
Andrea Stötzer	Surveying learning strategies among Medical Students

Department of Nuclear Medicine

1. Theranostics in Oncology, Dr. László Pávics, Professor of Nuclear Medicine.

2. Hybrid Imaging (PET/CT; SPECT/CT) in clinical praxis, Dr. Zsuzsanna Besenyi MD, PhD

3. New Nuclear Medicine investigations in oncology, Dr, Besenyi Zsuzsanna MD, PhD

Department of Otolaryngology and Head & Neck Surgery

1. **Pathogenesis and treatment of laryngeal tumors**
2. **Pathophysiology and treatment of vocal cord functional disorders**

Department of Behavioural Sciences

1. **The role of culture in reactions to disease**
   Prof. Bettina Pikó MD. Dsc.

Department of Oto-Rhino Laryngology and Head & Neck Surgery

Supervisor	Topic
Prof. Dr. habil. László Rovó Ph.D., head of department	Objective and subjective functional examination methods of the therapy of laryngeal diseases
Prof. Dr. habil. László Rovó Ph.D., head of department	Evaluation of the efficiency of modern implantable hearing aids
Dr. habil. József Géza Kiss Ph.D, scientific advisor	Methods of objective audiometry / Brainstem evoked response tests

Dr. habil. József Géza Kiss Ph.D, scientific advisor	Methods of objective audiometry/ Examination of P300
Dr. habil. József Géza Kiss Ph.D, scientific advisor	Methods of objective audiometry/ Otoacoustic emission
Dr. habil. József Géza Kiss Ph.D, scientific advisor	Methods of objective audiometry/ Diseases of the inner ear, cochlear implantation
Dr. László Iván Ph.D., associate professor	Surgical therapy of pharyngeal-laryngeal tumors
Dr. László Iván Ph.D., associate professor	Function-sparing surgery of the larynx
Dr. László Iván Ph.D., associate professor	Complex oncological therapy of patients with head and neck malignancies
Dr. Miklós Csanády Ph.D., associate professor	Endolaryngeal laser surgery
Dr. Miklós Csanády Ph.D., associate professor	Partial resection of the larynx and the pharynx
Dr. Miklós Csanády Ph.D., associate professor	Evaluation of the oncological therapy of patients with head and neck malignancies
Dr. Zsolt Bella Ph.D., senior lecturer	Endoscopic surgery of the skullbase
Dr. Zsolt Bella Ph.D., senior lecturer	Endoscopic surgery of the paranasal sinuses
Dr. Zsolt Bella Ph.D., senior lecturer	Evaluation and therapy of sleep related breathing disorders
Dr. Balázs Sztanó Ph.D., senior lecturer	Modern evaluation of upper airway stenoses
Dr. habil. József Géza Kiss Ph.D, scientific advisor / Roland Nagy., research assistant	Cochlear implant fitting
Dr. habil. József Géza Kiss Ph.D, scientific advisor / Balázs Dimák., research assistant	Objective electrophysiological examinations in audiology
Dr. János Jarabin senior lecturer	Audiological examinations of bone anchored hearing aid systems
Dr. János Jarabin senior lecturer	Differential diagnostics of vestibular disorders
Dr. Gábor Vass senior lecturer	Surgical methods of the tumors of the sinuses with covert approaches „ the facial degloving technique”.
Dr. Gábor Vass senior lecturer	Disturbed wound healing following the surgeries of implantable hearing aid systems – surgical methods and the possibilities of prevention
Dr. Diána Szabó – senior lecturer	New therapentie options in peripherae n. facialis palsy
Dr. Ádám Perényi – senior lecturer	Implanted devices and imaging diagnostics in ENT – what examinations can be performed with what expectations and limitations?
Dr. Ádám Perényi – senior lecturer	Speech discrimination, directional hearing, quality of life, social status and satispaction of patients with cochlear implants
Dr. Ádám Perényi – senior lecturer	Speech discrimination, directional hearing, quality of life, social status and satispaction of patients with middle ear implants

Dr. Zsófia Bere senior lecturer	Surgical Techniques of Bone Conductive Hearing Implants — Introduction of Minimally Invasive Surgical Procedures.
Dr. Zsófia Bere senior lecturer	Audiological examination of Bone Conduction Hearing Aided patients
Dr. Zsófia Bere senior lecturer	Health and Quality of Life Outcomes of Bone Conduction Hearing Aided patients
Dr. Roland Nagy research fellow	Pupillometry in audiology
Dr. Roland Nagy research fellow	Sound localization test for implantable hearing aid patients
Dr. Roland Nagy research fellow	Electrophysiology measurents of Cochlear Implant (CI)
Dr. Roland Nagy research fellow	3D reconstruction in ear surgery
Dr. Balázs Dimák research fellow	Objective electrophysiological measurements on implantable hearing aids
Dr. Balázs Dimák research fellow	Software development of hungarian speechtest
Dr. Balázs Dimák research fellow	Construction and validation of hungraian speechtest
Rebeka Anna Schulcz psychologist	Quality of life among hearing aid users
Rebeka Anna Schulcz psychologist	Quality of life among cochlear implant users

Department of Family Medicine

1. The implementation of Point-of-care ultrasound in family medicine
2. Point-of-care ultrasound in the differential diagnosis of dyspnoea in general practice

Department of Forensic Medicine

1. Illegal drug use
Éva Sija PhD., Katalin Kovács MD.

2. Laboratory investigation of drug abuse
László Institóris Phar.D, PhD.

3. Drunk driving
Éva Kereszty MD.

4. Heart-brain crosstalk in cranial injuries
Beáta Havasi MD.

5. Thanatochemistry *(postmortem detection of metabolic disorders; estimation time of death)*
Beáta Havasi MD., Éva Sija PhD

6. Forensic histopathology
Roland Weiczner MD. PhD

7. Evaluation of permanent disability
Beáta Havasi MD.

8. Fitness to drive
Beáta Havasi MD

9. Problems of the health legislation
Éva Kereszty MD.

10. Death detection in the clinical practice

Éva Kereszty MD.

11. Sudden cardiac death
Alíz Hernádi MD.

12. Identification
Árpád Szabó MD.

13. Unnatural death *(e.g. traffic accidents, suicide, family violence, drowning*)
Árpád Szabó MD., Katalin Kovács MD. Beáta Havasi MD.

14. Medical law (*e.g. informed consent, assisted suicide, malpractice*)
Éva Kereszty Dr., Máté Julesz Dr.

Department of Health Economics

1. The role of health behavior in the therapeutic efficacy of type 2 diabetes and the rehabilitation of cardiometabolic patients
2. Health literacy, technology adoption, and peer support in the management of type 1 diabetes in children
3. Readiness and difficulties of young adults with type 1 diabetes transitioning from child to adult care
4. Sustainable financing of healthcare

Department of Internal Medicine (Western Division)

prof. Dr. Tamás Takács M.D. Ph.D., Dsc Dr. Zoltán Rakonczay Jr MD. Ph D., DSc prof. dr. Péter Hegyi MD. Ph.D. Dsc	The pathomechanism of pancreatitis
Dr. Zoltán Rakonczay Jr. MD. Ph.D, DSc prof. dr. Péter Hegyi MD. Ph.D. DSc	The structure and function of gastrointestinal epithelial cells
Dr. Zoltán Rakonczay Jr MD. Ph.D., DSc prof. dr. Péter Hegyi MD. Ph.D.DSc	Modern intracellular imaging techniques in gastrointestinal tumours
prof. Dr. Tamás Takács MD. Ph.D., DSc Dr. Zoltán Rakonczay Jr MD. Ph.D., DSc prof. dr. Péter Hegyi DSc	The physiology and phatophysiology of pancreatic ductal bicarbonate secretion
Dr. Zoltán Rakonczay Jr MD. Ph.D., prof. dr. Péter Hegyi	The role of stromal cells in gastrointestinal tumours
prof. dr. László Czakó MD. Ph.D., D.Sc.	Therapeutic endoscopic retrogade cholangiopancreatography, The diagnostic accuracy of endoscopic ultrasonography – guided fine needle aspiration The role of endoscopic ultrasonography in the management of gastric lymphom The endoscopic therapy of difficult bile duct stones Screening for pancreatic cancer in newly discovered diabetes mellitus The prognostic value of serum calcitonine in acute necrotizing pancretaitis
	Liver diseases in chronic pancreatittis The effect of metformin on pancreatic steatosis and exorcine pancreatic function in type 2 diabetes mellitus Exocrine pancreatic dysfunction in type 2 diabetes mellitus

prof. dr. László Czakó MD. Ph.D., D.Sc.	Pathomechanism of hypertriglycerimedia – induced acute pancreatitis
prof. dr Tamás Molnár MD. Ph.D., D.Sc.	Diagnostic and prognostic biomarkers in inflammatory bowl diseases. Breath analysis and stool examination. Interobserver evaluation of endoscopic examinations in inflammatory bowel disease
dr. Klaudia Farkas MD. Ph.D.	Inflammatory bowel diseases and pregnancy
Dr. Edit Hajdú MD. Ph.D.	Evaluation of Streptococcus agalactiae positive newborn baby's data Analysis of device – associated infections on an intensice care unit Evaluation of the data of the gastroenteriris patients caused by Clostridium difficile Ifection control during dental procedures
Dr. Róka Richárd, MD. Ph.D. Dr. Orsolya Inczefi MD. Ph.D.	Novel pathophysiological factors in irritable bowel sy.
prof. Dr. Csaba Lengyel MD. Ph.D. , Dr. Anna Vágvölgyi MD. Ph.D.	Evaluation of short term QT variability in different manifestations of clinical disorders.
Dr. Anna Vágvölgyi MD. Ph.D.	Investigation of the effect of weight loss on cardiovascular autonomic and peripheral sensory nervous system functions.
Dr. Zoltán Szepes MD. Ph.D., Dr. Renáta Bor MD. Ph.D.	Palliative esophageal self-expandable metal stent (SEMS) placement in the management of tracheo-esophageal fistula and esophageal obstruction. Evaluation of malignancy risk of colorectal polyps according to size and morphological feature. The impact of pre-procedure (indication, lining preparation) and completeness of procedure quality indicators of colonoscopy on the outcome of examination. Operative upper gastrointestinal endoscopy. The efficacy of colorectal screening in Csongrád-Csanád county (quality indicators, outcome indicators, safety, adherence, morphological evaluation of polyps).
Dr. Zoltán Szepes MD. Ph.D. , Dr. Anna Fábián MD. Ph.D.	Palliative duodenal self-expandable metal stent (SEMS) placement in the management of gastric outlet obstruction. Self-expandable metal stent placement (SEMS) placement in the management of benign and malignant lower gastrointestinal obstruction. Endoscopic treatment of early rectal cancers. Assessment of quality indicators of endoscopic examinations in daily practice. Operative lower gastrointestinal endoscopy. Endoscopic ultrasound in the hepatobiliary system. Evaluation of the first step of colorectal cancer screening program based on the patients adherence, sensitivity, positive and negative predictive value of method.
Dr. Balász Kui MD. Ph.D.	Clinical examination of acute pancreatitis. Clinical examination of chronic pancreatitis. Clinical examination of pancreatic tumors.
Dr. András Rosztóczy MD. Ph.D.	Clinical and experimental studies in esophageal motility disorders. Barrett's esophagus. Eosinophilic esophagitis.
Dr. Klaudia Farkas MD. Ph.D.	Inflammatory bowel diseases. Colorectal carcinomas.
prof. Dr. György Ábrahám MD. Ph.D. , Dr. Nikolett Gajdán MD.	The value of the 24-hour blood pressure monitoring in the prediction of the progression of the cardiovascular target organ damage.

Dr. Zuszsanna Valkusz MD. Ph.D., Dr. Rea Nagy MD. Ph.D.	Primary and secondary osteoporosis. MEN syndrome. Pituitary disase
Dr. Krisztián Sepp MD. Ph.D.	Thyroid gland cancers. Examination of endocrine disruptor effects.
Dr. Sándor Magony MD. Ph.D.	Investigations of neuropathic conditions in endocrine diseases. Acromegaly.
Dr. Balázs Németh MD. Ph.D.	The genetics of chronic pancreatitis. Family studies in pancreatitis. Risk factors of infectious pancreatitis.
prof. Dr. Tamás Várkonyi MD. Ph.D. , Dr. Szabolcs Nyiraty MD. Ph.D.	Assessment of autonomic neuropathy (etiology, manifestations).
Dr. József Maléth MD. Ph.D.	Epthelial signaling and secretion in physiology and pathophysiology. The role of redox sensitive calcium channels in the pathogenesis of acute pancreatitis. Organoid cultures in the gastrointestinal research.
Dr. Petra Pallagi MD. Ph.D.	Investigation of etiological background of inflammatory bowel disease-associated pancreatic damage.
Dr. Edit Hajdú MD. Ph.D.	Assessment of urinary tract infections. Outpatient treatment of acute coronavirus infection with favipiravir. A retrospective study. Analysis of clinical data from patients after SARS-CoV-2 infection by retrospective study. Epidemiological examination of Lyme-disease.
Dr. Éva Csajbók MD. Ph.D.	Lipodystrophies. Examination of cognitive function in diabetic and obese patients. Obesity as systemic inflammation.

Department of Internal Medicine (Southern Division)

Prognostic factors in multiple myeloma
Szabolcs Modok, MD, PhD

Pharmacologic and interventional treatment of atrial fibrillation
Dr. Róbert Pap

Atrial flutter after open heart surgery
Dr. Attila Makai

Long-term efficacy of slow pathway ablation for atrioventricular nodal reentrant tachycardia
Dr. László Sághy

Heart failure and pacemaker therapy
Dr. Gábor Bencsik

Department of Pharmacology and Pharmacotherapy

Supervisor	Topic
Dr. Andrea Orosz, MD, PhD	Investigation of cardiac ventricular repolarization parameters in different clinical conditions
Dr. habil. Norbert Nagy, PhD	Investigation of Ca^{2+}-dependent arrhythmogenesis in ventricular myocardium
Dr. habil. Norbert Nagy, PhD	Investigation of the sinus-node pacemaking
Dr. habil. Norbert Nagy, PhD	Investigation of the positive inotropic effect of selective Na/Ca exchanger inhibition in ventricular myocardium

Dr. habil. Péter Bencsik, MD, PhD	Cardioprotection induced by ischemic pre- or postconditioning in acute myocardial infarction and in chronic heart failure models
Dr. habil. Péter Bencsik, MD, PhD	Investigation of cardioprotective mechanisms against ischemia/reperfusion injury after myocardial infarction
Dr. habil. Péter Bencsik, MD, PhD Dr. habil. Anikó Görbe, MD, PhD	Effects of hyperlipidemia on ischemic adaptation of the heart
Dr. habil. Péter Bencsik, MD, PhD Dr. habil. Anikó Görbe, MD, PhD	Role of matrix metalloproteinases in adaptation of the heart and in disease models
Dr. habil. Péter Bencsik, MD, PhD Dr. habil. Péter Ferdinady, MD, DSc	Exploration of microRNA network and target analysis is cardiovascular disease models
Dr. habil. Anikó Görbe, MD, PhD	Cardiocytoprotection in in vitro cell culture models
Dr. Zoltán Husti, MD, PhD Dr. Tibor Hornyik, MD, PhD	Investigation of hidden cardiotoxicity of different compounds on rabbit right ventricular papillary muscle
Dr. Tibor Hornyik, MD, PhD Dr. Zoltán Husti, MD, PhD	Investigation of the mechanisms of athlete's sudden cardiac death using training induced canine athlete's heart model
Dr. habil. Róbert Gáspár, MPharm,PhD	Investigation of drugs affecting the pregnant uterine contractions in rats
Dr. Kálmán Szűcs, MPharm, PhD Dr. habil. Róbert Gáspár, MPharm, PhD	Electromyographic investigation of the gastrointestinal motility is anesthetized and awake rats
Dr. habil Viktória Venglovecz, DSc	Effect of alcohol on ion transport processes of esophageal epithelial cells
Dr. habil Viktória Venglovecz, DSc	Investigation of exocrine and endocrine interactions in the pancreas under normal and pathological conditions
Dr. habil Viktória Venglovecz, DSc	Investigations of ion transport processes of esophageal organoids

Department of Medical Physics and Informatics

Supervisor	Topic
Prof. Ferenc Peták	Respiratory consequences of mechanical ventilation in experimental models
Prof. Ferenc Peták	Respiratory consequences of cerebral hypoperfusion in experimental models
Prof. Ferenc Bari	Experimental modelling of cerebral hypoperfusion
Prof. Ferenc Bari	Nanomedicine as therapeutic option for stroke
Prof. Tibor Nyári	Investigation of the pattern of deaths in Hungary
Dr. József Tolnai	Monitoring of physiological processes with telemedicine tools
Dr. Gergely Fodor	Respiratory mechanical investigations in small animal models
Dr. Tibor Szabó	Redox proteins for biosensor application
Dr. László Égerházi and Dr. Tibor Szabó	3D printed microfluidic devices for biophotonic applications
Dr. László Égerházi and Dr. Ferenc Rárosi	Evaluating the capabilities of generative artificial intelligence validating the accuracy of medical documentations
Dr. Ferenc Rárosi	Application of classification methods and prediction models in biomedical research
Dr. Ferenc Rárosi	Statistical hypothesis testing in biomedical research

Dr. János Lückl	The electrophysiological analysis of the ictal-interictal continuum in acute and subacute encephalopathies
Dr. János Lückl	Analysis of the spreading depolarizations with electrophysiological methods in animal and clinical research
Dr. Péter Makra assistant professor	Data collection and analysis problems in respiratory mechanics
Dr. Péter Makra assistant professor	Haemoglobin correction in the multimodal imaging of the cortex
Dr. Árpád Márki and Dr. Attila Nagy	Applications of 3D printing in medicine
Mónika Szűcs	Application of statistical methods in biological and medical research

Department of Cell Biology and Molecular Medicine

1. **Neuroprotection in ischemic stroke: mechanisms and potential targets**
Dr. Eszter Farkas

2. **The role of carbohydrate binding proteins in neuroinflammation**
Dr. Ádám Légrádi

3. **The mechanisms of impaired post-ischemic reperfusion**
Dr. Ákos Menyhárt

4. **Cerebral blood flow responses in the ischemic and aging brain**
Dr. Szilvia V. Kecskés

5. **Brain edema models in live brain slice preparations**
Dr. Rita Frank

Department of Medical Chemistry

1. **Blocking of protein-protein interactions, development of novel potential drug molecules**
Prof. Tamás Martinek

2. **Cell delivery of therapeutic macromolecules**
Prof. Tamás Martinek

3. **Development of novel antimicrobial strategies and potential therapeutics**
Prof. Tamás Martinek, Dr. Edit Wéber

4. **Posttranslational modification of natural peptides by chemical methods**
Prof. Gábor Tóth

5. **Synthesis of peptide toxins with multiple disulfide bridges**
Prof. Gábor Tóth, Dr. Zsolt Bozsó

6. **Antibiotic adjuvants: mechanism of action and development**
Dr. Anasztázia Hetényi

7. **Synthesis and examination of multiple disulfide bond-containing antifungal peptides and proteins**
Dr. Györgyi Váradi

8. **Investigation of structure-activity relationships of antifungal proteins**
Dr. Györgyi Váradi

9. **Synthesis of nucleosides**
Dr. Lajos Kovács

10. Synthesis and investigation of highly-ordered, guanine-containing structures
Dr. Lajos Kovács

11. Synthesis of modified nucleosides
Dr. Zoltán Kupihár

12. Investigation of peptides and proteins by mass spectrometry
Dr. Zoltán Kele

13. Identification of protein biomarkers using the methods of proteomics
Dr. Zoltán Szabó

14. Development of liquid chromatography and mass spectrometry methods for the quantitative determination of proteins
Dr. Zoltán Szabó

Institute of Surgical Research

1. Protective effects of biological gases in circulatory disorders
Prof. Mihály Boros, M.D., Ph.D., D.Sc.
Dr. Gabriella Varga, Ph.D.
Dr. Dániel Érces, Ph.D.

2. Acting mechanism and interplay of biologically active gases in sterile inflammation and *in vitro* systems.
Prof. Mihály Boros, M.D., Ph.D., D.Sc.

Dr. Szabolcs Péter Tallósy, Ph.D.

3. Therapeutic possibilities of the microcirculatory and mitochondrial dysfunction in septic condition
Dr. László Juhász, Ph.D.
Dr. Attila Rutai, Ph.D.

4. Assessment of mitochondrial function in local and systemic inflammatory diseases
Dr. László Juhász, Ph.D.

5. Assessment and modulation of the biochemical and microcirculatory consequences of urogenital diseases
Dr. Andrea Szabó, M.D., Ph.D.
Dr. Marietta Zita Poles, Ph.D.

6. Assessment and modulation of the injury of endothelial glycocalyx caused by circulatory disorders.
Dr. Andrea Szabó, M.D., Ph.D.
Dr. Marietta Zita Poles, Ph.D.

7. Non-bacterial methane production: molecular mechanism and significance in clinical diagnostics
Prof. Mihály Boros, M.D., Ph.D., D.Sc.
Dr. Szabolcs Péter Tallósy, Ph.D.

8. Examination of the complications of extracorporeal circulation on a large animal model.
Dr. Gabriella Varga, Ph.D.
Dr. Dániel Érces, Ph.D.

9. Non-invasive investigation of the lung and gastrointestinal microcirculation.
Dr. Gabriella Varga, Ph.D.
Dr. Dániel Érces, Ph.D.

10. Formation of neutrophil extracellular traps and therapeutic influence in circulatory failure
Dr. Szabolcs Péter Tallósy, Ph.D.
Dr. Attila Rutai, Ph.D.

11. State-of-the-art assessment methods for quantification of surgical skills
Dr. Andrea Szabó, M.D., Ph.D.
Dr. Marietta Zita Poles, Ph.D.

12. Changes in cerebral mitochondrial function in tryptophan metabolism deficient mice.
Dr. Marietta Zita Poles, Ph.D.
Dr. László Juhász, Ph.D.

Department of Physiology

After successful completion of the Medical Physiology I course, interested students can inquire about available student research projects by the principal investigators of departmental research units found at https://www.phys.szote.u-szeged.hu/index.php?lap=20&id=en.

Department of Pathophysiology

Student research program consultant: Dr Krisztina Anna Csabafi
telephone number: + 36 62 545 993
E-mail: *csabafi.krisztina@med.u-szeged.hu*

Thesis & scientific circle Topics (TDK)	
Tutor	**Topic**
Júlia Szakács M.D., Ph.D.	Study of the behavioral effects of neuropeptides
Miklós Jászberényi, M.D., Ph.D., D.Sc.	The Pathophysiology of Alzheimer's Disease
	The role of neuropeptide mediators in the control off affective, emotional and cognitive processes
	The Effect of Neuropeptides on the Hypothalamus-Pituitary-Adrenal system
Zsolt Bagosi, M.D., Ph.D.	The role of CRF and urocortins in anxiety, depression and social interaction
	The effects of urocortins and its fragments in anxiety and depression
	The hypothalamic and extra hypothalamic regulation of CRF
	The role of CRF and urocortins in alcohol, nicotine and cannabis addiction
Krisztina Anna Csabafi, M.D., Ph.D.	The effect of kisspeptin on amyloid-beta neurotoxicity
	Effect of neuropeptides on nociception and morphine induced analgesia, tolerance
Krisztina Anna Csabafi, M.D., Ph.D. Katalin Eszter Ibos, M.D.	Role of neuropeptides in anxiety and the development of anxious phenotype
Zoltán Rakonczay, M.D., Ph.D. D.Sc. Lóránd Kiss Ph.D.	The pathomechanism of experimental acute pancreatitis and therapeutic investigations
Márta Sárközy, M.D., Ph.D.	Experimental investigation of the molecular mechanisms and potential therapeutic targets of uremic cardiomyopathy
	Experimental investigation of the mechanisms and potential therapeutic targets of chemotherapeutic-induced chronic cardiotoxicity

	Experimental investigation of mechanisms and potential therapeutic targets of heart failure as a chronic side effect of radiotherapy
István Koncz, M.D., Ph.D.	Mechanisms of Cardiac Arrhythmia
Any topic in pathophysiology agreed by the supervisor	

Department of Public Health

1. Lifestyle and health literacy during pregnancy, Prof. Edit Paulik MD, PhD, head of department
2. Stereotypes among medical students regarding their future professional and family roles, Regina Molnár PhD, assistant professor
3. Knowledge and attitudes on climate change, Zsuzsanna Máté PhD, assistant professor
4. Quality of life survey among cancer patients, Mária Markó-Kucsera PhD, assistant lecturer

Department of Trauma and Orthopaedics

Dr. habil. Krisztián Sisák Ph. D.	Long term follow-up on the Proxima short stem
Dr. habil. Krisztián Sisák Ph. D.	Uncemented total hip replacement in the elderly, advantages and risks
Dr. habil. Krisztián Sisák Ph. D.	The treatment of periprosthetic joint infection of the hip – the results of two-stage revision
Dr. habil. Gellért Sohár Ph. D.	Role of obesity in the survivor of unidondylar knee prosthesis
Dr. Ernest Nagy clinical doctor	Is hypoproteinemia a pre-op risk factorfor septic infection in elective knee (TKR) & hip (THR) surgery?
Dr. Arany László assistant lecturer	The effect of tranexamic acid on transfusion rate after lowerlimb arthroplasty
Dr. Gálity Hristifor assistant lecturer	Analysis of TKA revisions due to aseptic loosening at our department
Dr. Gombár Csaba senior lecturer	Estimating component sizes in hip and knee arthroplasty using anthropometric methods

Department of Laboratory Medicine

The scientific activity at the Department of Laboratory Medicine mainly focuses on the evaluation of CYP19 aromatase enzyme expression in different cell types such as ovarian granulosa cells and microglial cells. In both cell types aromatase plays a key role in the steroidogenesis (estradiol biosynthesis). In granulosa estrogens are responsible for follicle maturation and in microglial cells estrogens are deeply involved in cell-cell communications and cellular repair mechanisms. We investigate the basic endocrine mechanisms and the effects of different molecules (e.g. aromatase inhibitors) on aromatase in primary cell cultures. We apply different techniques (e.g. immunohistochemistry, western blot, PCR, ELISA) for the investigation. It is possible to join us to perform experimental work in the frame of student science study group project or to write your diploma work (theoretical or experimental topics are offered).

RECOMMENDED TEXTBOOKS FOR MEDICAL STUDENTS

FIRST YEAR

It is recommended to purchase the latest edition of the following textbooks!

ANATOMY, HISTOLOGY AND EMBRYOLOGY

- Richard L. Drake, A. Wayne Vogl, Adam W. M. Mitchell: Gray's Anatomy For Students (ELSEVIER, 14th Edition, 2020) ISBN: 978-0-323-39304-1
- Leslie P. Gartner, James L. Hiatt: Concise Histology (SAUNDERS ELSEVIER, 2011) ISBN: 978-0-702031114-4
- F. Hajdu, Gy. Somogyi: Histology - Practical Manual (Semmelweis Publisher, 5th Corrected Edition, 2014) ISBN 978-963-331-244-5
- T.W. Sadler: Langman's Medical Embryology (Williams § Wilkins, 13th Edition) ISBN-13: 978-1451191646
- M. Schuenke, E. Schulte, Udo Schumacher: Thieme Atlas of Anatomy: General Anatomy and Musculoskeletal System, Head and Neuroanatomy, Internal Organs (Thieme)

CELL BIOLOGY AND MOLECULAR GENETICS

Obligatory:

- William K. Purves, Gordon H. Orians: Life: The Science of Biology,W.H. Freeman and Company, New York
- J. Darnell H. Lodish D. Baltimore: Molecular Cell Biology, W.H. Freeman and Company, New York
- B. Alberts, D.B.J. Lewis, M. Raff. K. Roberts, J.D. Watson: Molecular Biology of the Cell, Garland Publishing, Inc. New York

Recommended:

- Bruce Alberts et al: Essential Cell Biology with Ebook, Smartwork5, and Animations, 9780393680393

BASIC LIFE SUPPORT

- Brent, Karren: First Aid for Colleges and Universities, Brady Morton Series

INTRODUCTION TO MEDICINE

- Bettina Pikó : Introduction to Medicine. Basic Principles of Behavioral Sciences and, Preventive Medicine. University of Szeged

INTRODUCTION TO PSYCHOLOGY, COMMUNICATION

- Nolen-Hoeksema S., Fredrickson B.L., Loftus G.R., Wagenaar W.A.: *Atkinson and Hilgard's Introduction to Psychology*. Cengage Learning EMEA, 2009.
- János Pilling (ed): *Medical Communication*. Medicina, 2011

LATIN BASED MEDICAL TERMINOLOGY

- Gergely Brandl – Imre Áron Illés – Márta Marancsik – Edit Vágvölgyi: *Latin Based Medical Terminology,* JPress Szeged, 2021

MEDICAL CHEMISTRY

Obligatory:

- Ebbing-Hart: General Chemistry /Organic Chemistry, Houghton Mifflin Company

Recommended:

- Harold Hart: Organic Chemistry (A Short Course), Houghton Mifflin Company, Boston
- P. Gergely: Organic and Bioorganic Chemistry for Medical Students, University Medical School of Debrecen
- John McMurry: Fundamentals of Organic Chemistry, Brooks/Cole Publishing Company, ITP, An International Thomson Publishing Company

MEDICAL PHYSICS

- S Damjanovich, J Fidy and J Szöllősi (eds): Medical Biophysics. Medicina, 2009.
- Paul Davidovits: Physics in Biology and Medicine. Fourth edition. Academic Press, 2013.

MEDICAL STATISTICS

Students can download course material (handouts, lecture notes, R scripts) from the Coospace.

Suggested textbook:
• Michael J. Campell – David Machin – Stephen J. Walters: Medical Statistics. A Textbook for the Health Sciences (2012) ISBN: 978-1-118-30061-9

MEDICAL DICTIONARIES
- Mosbey's: Mosbey's Medical, Nursing and Allied Health, Mosbey
- Stedmans: Medical Dictionary, Williams and Wilkins

HUNGARIAN LANGUAGE
- Erzsébet Balogh & Margit Skadra: Multikulti Magyar nyelv külföldieknek – Hungarian for foreigners. ISBN: 978 963 226 599 5. Medicina, 2016

SECOND YEAR

ANATOMY, HISTOLOGY AND EMBRYOLOGY

I. **Obligatory textbooks:**

- K. Won Chung: **Gross Anatomy**, Lippincott Williams & Wilkins
- Douglas J. Gould; James D. Fix: **BRS Neuroanatomy 5th;** Lippincott Williams & Wilkins **ISBN 13:** 9781451176094
- Crossman & Neary: **Neuroanatomy: an Illustrated Colour Text**; *ELSEVIER*
- Mtui, Gruener & Dockery: Fitzgerald's **Clinical Neuroanatomy and Neuroscience;** *ELSEVIER*
- **Sobotta Atlas of Human Anatomy: Volume 1, 15th ed., English;** *ELSEVIER*
- **Sobotta Atlas of Human Anatomy: Volume 2, 15th ed., English;** *ELSEVIER*
- **Sobotta Atlas of Human Anatomy: Volume 3, 15th ed., English;** *ELSEVIER*
- M. Loukas, B. Benninger, R. S. Tubbs : **Gray's Clinical Photographic Dissector of the Human Body;** *ELSEVIER*
- L. P. Gartner,J. L. Hiatt: **Concise Histology;** *ELSEVIER*
- K. Moore & T. V. N. Persaud: **The Developing Human**; *ELSEVIER*

II. **Recommended textbooks:**

- W. Platzer: **Color Atlas of Human Anatomy, Volume 1**: Locomotor System;*THIEME*
- H. Fritsch, W. Kuehnel: **Color Atlas of Human Anatomy, Volume 2**: Internal Organs; *THIEME*
- W. Kahle, M. Frotscher: **Color Atlas of Human Anatomy, Volume 3**: Nervous System and Sensory Organs; *THIEME*
- M. Schuenke, E. Schulte, U. Schumacher: **THIEME Atlas of Anatomy, Head and Neuroanatomy**; *THIEME*
- M. Schuenke, E. Schulte, U. Schumacher: **THIEME Atlas of Anatomy, General Anatomy and Musculoskeletal System**; *THIEME*
- M. Schuenke, E. Schulte, U. Schumacher: **THIEME Atlas of Anatomy, Neck and Internal Organs**; *THIEME*
- Junqueira, Carneiro, Kelley: **Basic Histology**, Prentice Hall, International Student Edition, Mc Graw-Hill
- Netter, Frank H.: **Atlas of Human Anatomy**, Icon Learning Systems; *ELSEVIER*
- L. R. Cochard: **Netter's Atlas of Human Embryology;** *ELSEVIER*
- Sadler: **Langman's Medical Embryology**, with Simbryo CD, *Lippincott Williams & Wilkins*
- Moore, Persaud & Torchia: **Before We Are Born**, Essentials of Embryology and Birth Defects; *ELSEVIER*
- Cochard: **Netter's Atlas of Human Embryology**; *ELSEVIER*

BIOCHEMISTRY, BIOCHEMISTRY SEMINAR

Obligatory:
- Robert K.Murray, Daryl K. Ganner, Peter A. Mayers, Vicot W. Rodwell: Harper's Illustrated Biochemistry 29th Edition 2012 ISBN: 978-0-07-176576-3

Recommended for 1st semester:

- W. J. Marshall, S. K. Bangert: Clinical Chemistry
  6th Edition 2008 ISBN:9780723434559
- P.C. Champe, R. A. Harvey: Lippincott's Illustrated Reviews Biochemistry
  4th Edition 2008 ISBN-13: 978-07817-6960-0
- J.W. Baynes, M. H. Dominiczak: Medical Biochemsitry
  4th Edition, 2014-06-04 ISBN: 978-1-4557-4580-7

BIOCHEMICAL BASICS OF PREVENTIVE MEDICINE

- Janet Christian and Janet Greger: Nutrition for Living, Addison-Wesley

CARDIAC ELECTROPHYSIOLOGY AS A BASIC PROPERTY OF CARDIAC FUNCTION

- Macfarlane PW, van Oosterom A, Janse MJ, Camm J, Kligfield P, Pahlm O, eds. Comprehensive Electrocardiology, 2nd Ed. Springer, London

IMMUNOLOGY

- Abul Abbas Andrew Lichtman Shiv Pillai: Basic Immunology (Elsevier, 2019)
- Abul Abbas Andrew Lichtman Shiv Pillai: Cellular and molecular immunology (Elsevier, 2017)
- Janeway: Immunbiology (Taylor&Francis, 2007)

MATHEMATICAL AND STATISTICAL MODELLING IN MEDICINE

- Mark Woodward: Epidemiology –Study design and Data analysis, Chapman & Hall/CRC 1999
- Interesting mathematical problems in every-day life. Electronic handout in Teaching Mathematics and Statistics in Sciences HU-SRB/0901/221/088

MEDICAL ANTHROPOLOGY

- C.G.Helman: Culture, Health and Illness, Oxford University Press

MEDICAL PHYSIOLOGY

We recommend obtaining ONE of the following modern textbooks:

- Arthur C.Guyton, John E. Hall: Textbook of Medical Physiology, Elsevier Science
- Kim Barrett, Heddwen Brooks, Scott Biotano, Susan Barman: Ganong's Review of Medical Physiology, McGraw Hill Publishers
- Walter F. Boron, Emile L. Boulpaep: Medical Physiology, Saunders Elsevier
- William F. Ganong: Review of Medical Physiology by The McGraw-Hill Companies Inc.
- Fonyó Attila: Principles of Medical Physiology, Medicina Kiadó Zrt.
- Albert Szent-Györgyi Medical University, Department of Physiology, Physiology Laboratory Manual, (handout)
- Linda S Costanzo Physiology Elsevier

MEDICAL SOCIOLOGY

- *Obligatory*:
  - Molnár Regina, Erdős Csaba: Guide for studying medical sociology. 2022. University of Szeged, Department of Public Health
- *Recommended*:
  - Cockerham W.C. (2021). Medical Sociology. University of Alabama at Birmingham, Routledge. (5th e.)
  - Giddens, A. & Sutton, P. W. (2017). Sociology. (8th ed.). Polity Press

HUNGARIAN LANGUAGE

- Erzsébet Balogh & Margit Skadra: Multikulti Magyar nyelv külföldieknek – Hungarian for foreigners. ISBN: 978 963 226 599 5. Medicina, 2016
- Margit Skadra: Elsősegély a magyar orvosi nyelvhez - First Aid for Medical Hungarian. ISBN: 978 963 226 846 0 Medicina, 2022

THIRD YEAR

HUNGARIAN LANGUAGE

- Hungarian for medical purposes (Csilla Keresztes, Marietta Kiss, Eszter Asztalos-Zsembery, Andrea Stötzer, Rita Vástyán, Zsuzsanna Szűcs, Krisztina Helle, Bernadett Borda – University of Szeged; Gabriella Hild, Zoltán Krommer, Gabriella Nagy, Judit Sávay, Tímea Németh – University of Pécs; Medical editor: Attila Farkas, MD) Tiszapress, Szeged 2023

INTERNAL MEDICINE (CLINICAL DIAGNOSTICS)

Obligatory:

- Barbara Bates': A Guide to Physical Examination and History Taking, 13th ed. Lynn S. Bickley, Peter G. Szilagyi, Richard M. Hoffman, Rainier P. Soriano Publication date: 2023 ISBN: 978-1496398178

Recommended:

- Harrison's Principles of Internal Medicine (2 Volume Set), Authors: Loscalzo, Fauci, Kasper, Hauser, Longo, Jameson, ISBN: 9781264268504, Publication Date: 2022, Edition: 21
- Te-Chuan Chou: Chou's Electrocardiography Clinical Practice, 6th ed., Borys Surawicz, 2008., ISBN: 1416037748
- Brostoff: Clinical Immunology – An Illustrated Outline, Mosby, 1994, ISBN: 1563756641
- Kumar, Parveen, Clark, Michael: Clinical Medicine, 5th ed., W. B. Saunders, 2002, ISBN: 0702025798
- Current Medical Diagnosis and Treatment 2023, Author(s): Maxine A. Papadakis, Stephen J. McPhee, Michael W. Rabow, Kenneth R. McQuaid ISBN: 1264687346, Publication date: 2022
- Stone: Current Emergency Diagnosis & Treatment, 8th ed., McGraw Hill / Medical, 2017., ISBN: 0071840613

MICROBIOLOGY

- Murray et al., Medical Microbiology, Elsevier, Mosby; 9th Edition, 2020
- Medical Microbiology 19th Edition , Elsevier Michael Barer Will Irving 2020

MICROSURGERY

- Szabó, A., Vass, G., Zádor, Z., Boros, M.: Basics of Microsurgery. Manual for Medical Students, Szeged, 2004. (handout)

PATHOLOGY

- Kumar, Abbas, Aster, Deyrup - Robbins & Kumar Basic Pathology, Elsevier, 2023, 11th Edition, ISBN: 9780323790185

PATHOPHYSIOLOGY

Obligatory

- Gary D. Hammer, Stephen J. McPhee. **Pathophysiology of Disease: An Introduction to Clinical Medicine** 8th Edition, (2019) LANGE McGraw-Hill Education.
- Krisztina Csabafi et al. ECG guide, (2020) - notes

Recommended

- Vinay Kumar, Abul K. Abbas, Jon C. Aster. Robbins and Cotran Pathologic basis of disease 9th edition, (2014) Elsevier Books.
- Malcolm S. Thaler. Only EKG book you'll ever need, (2018) Wolters Kluwer Health.

SURGERY (CLINICAL DIAGNOSTICS)

- Ed.: Norton, Barie, Bollinger, Chang, Lowry, Mulvihill, Pass, Thompson, Shirazi: Surgery: Basic Science and Clinical Evidence (Book with CD-ROM), Springer, 2000., ISBN: 038798447X
- Ed. Norton, Barie, Bollinger, Chang, Lowry, Mulvhill, Pass, Thompson, Shirazi: Surgery: Basic Science and Clinical Evidence 2nd ed. 2008 Edition, Springer 2008, ISBN-13: 978-0387308005 /ISBN-10: 0387308008

SURGICAL PROPEDEUTICS

- Towsend CM.: Sabiston Textbook of Surgery. The Biological Basis of Modern Surgical Practice. 21st Edition, Elsevier, 2021
  Hardback ISBN: 9780323640626 Other ISBN: 9780323640640

BASICS OF EMERGENCY MEDICINE

- Boros, M. (Ed.): Monitoring in Medical Practice. Basic Medical Skills. Innovariant Ltd., Szeged, 2007. ISBN 963-482-787-X
- Boros, M. (Ed.): Practical Skills Syllabus. Innovariant Ltd., Szeged, 2007. ISBN 978-963-482-840-2

MICROSURGERY

- Szabó, A., Vass, G., Zádor, Z., Boros, M.: Basics of Microsurgery. Manual for Medical Students. Szeged, 2004. (handout)

BASIC SURGICAL SKILLS, ADVANCED SURGICAL SKILLS

- Boros, M. (Ed.): Surgical Techniques. Textbook for medical students. Innovariant Ltd., Szeged, 2006. ISBN 963 482 785 3.
- Boros, M. (Ed.): Practical Skills Syllabus. Innovariant Ltd., Szeged, 2008.

BASIC IMMUNOPATHOLOGY

- Abbas, A. K., Lichtman, A. H., Pillai, S (eds): Cellular and Molecular Immunology. 10th Edition. Elsevier, Saunders, Philadelphia, 2021. ISBN: 978-0-8089-2425-8----

LABORATORY MEDICINE

- William J. Marshall: Clinical Chemistry, 4th, 5th or 6th Edition, MOSBY – Harcourt Publishers Ltd. 2008, ISBN 0-72-34-3159-0

FOURTH AND FIFTH YEAR

ANAESTHESIOLOGY AND INTENSIVE THERAPY

Obligatory for fifth year students:

- Zsolt Molnár (Edited by): Anaesthesiology and Intensive Therapy (Medicina Könyvkiadó Zrt., 2013)

Recommended for fifth year students:

- Smith and Aitkenhead's Textbook of Anaesthesia
- Morgan and Mikhail's Clinical Anesthesiology

Recommended:

- Keith G. Allman, Iain H. Wilson: Oxford Handbook of Anaesthesia, Oxford University Press, 2006. ISBN 0-19-856606-3
- Tim Craft, Jerry Nolan, Mike Parr: Critical Care, BIOS Scientific Publishers Ltd. 2009. ISBN 1-85996-2229-7

CHILD AND ADOLESCENT PSYCHIATRY

- Robert Goodman and Stephen Scott, Child Psychiatry, 1998

CLINICAL IMMUNOLOGY

Oxford Handbook of Clinical Immunology and Allergy, Oxford University Press, 2019, ISBN: 9780199603244; Online ISBN: 9780191742705

CLINICAL ONCOLOGY

- The principles of the complex management of cancer. Lecture notes University of Szeged, Faculty of Medicine Department of Oncotherapy, Edition 3, 2018.

CLINICAL GENETICS

***Obligatory textbooks*:**

1. Lecture notes
2. *Emery's Elements of Medical Genetics. Peter Turnpenny, 15th edition, Elsevier, 2017*

***Recommended textbooks*:**

1. SMITH'S: Recognisable patterns of human malformation 2006
2. Human *Genetics.* A problem-based *approach.* Korf BR, 2nd ed, 2000, 2007.
3. Thompson and Thompson Genetics in Medicine by Robert L. Nussbaum, M.D. , Ada Hamosh, M.D. (Contributor), Huntington F. Willard, Ph.D., Margaret W. Thompson, Roderick R. McInnes, M.D.,

Paperback, Elsevier Science Health Science div 2007

DERMATOLOGY
- James Dinulos: Habif's Clinical Dermatology 7th Edition. A Color Guide to Diagnosis and Therapy. eBook ISBN: 9780323612708. Free access with ClinicalKey through the Klebelsberg Library.

FAMILY MEDICINE
- The Color Atlas and Synopsis of Family Medicine, 3rd Edition by Richard P. Usatine
- Bratton's Family Medicine Board Review 5th Edition by Robert A. Baldor

FORENSIC MEDICINE

Compulsory:
- Reinhard B. Dettmeyer, M.A. Verhoff, Harald F. Schütz Forensic Medicine Fundamentals and Perspectives, Springer-Verlag Berlin Heidelberg 2014 ISBN 978-3-642-38817-0, ISBN 978-3-642-38818-7 (eBook)

Recommended:
- Jason Payne-James ed.: Simson's Forensic Medicine 14th Edition, 2019 CRC Press ISBN-9781498704298
- Lecture Notes of Forensic Medicine (Ed.: P. Sótonyi, E. Keller), Semmelweis Publisher, 2008. ISBN 978 963 9656 92 5

HUNGARIAN LANGUAGE
- Hungarian language for 4th year medical students (Csilla Keresztes, Marietta Kiss, Andrea Stötzer, Rita Vástyán – University of Szeged; Gabriella Hild, Zoltán Krommer, Gabriella Nagy, Judit Sávay, Tímea Németh – University of Pécs) Jpress, Szeged 2022

INTERNAL MEDICINE

Obligatory:
- Hoffbrand, Moss: Essential Haematology, Wiley, 8th edition
- Harrison's Principles of Internal Medicine (2 Volume Set), Authors: Loscalzo, Fauci, Kasper, Hauser, Longo, Jameson, ISBN: 9781264268504, Publication Date: 2022, Edition:21
- Gibson, Costabel: Respiratory Medicine (2 Volume Set), 3rd ed., W. B. Saunders, 2002., ISBN: 0702026131
- Te-Chuan Chou: Chou's Electrocardiography Clinical Practice, 6th ed., Borys Surawicz, 2008., ISBN: 1416037748
- Forster T., Csanády M.: Atlas of Colour Doppler Echocardiography, Szeged, 1991.,
- I.J. Mazza: Manual of Clinical Hematology, Oxford Textbook of Nephrology JS Cameron, AM Davison et al, Oxford University Press, 2001., ISBN: 078172907
- The Merck Manual of Diagnosis and Therapy, Merck and Co. Inc. 2018., ISBN: 0911910425

Recommended:
- Harrison's Principles of Internal Medicine (2 Volume Set), Authors: Loscalzo, Fauci, Kasper, Hauser, Longo, Jameson, ISBN: 9781264268504, Publication Date: 2022, Edition:21
- Brostoff: Clinical Immunology – An Illustrated Outline, Mosby, 1994, ISBN: 1563756641
- Stone: Current Emergency Diagnosis & Treatment, 8th ed., McGraw Hill / Medical, 2017., ISBN: 0071840613
- Cheitlin: Clinical Cardiology, 7th ed. (to be published in January 2006), Appleton & Lange, ISBN: 0838513859
- Current Medical Diagnosis and Treatment 2023, Author(s): Maxine A. Papadakis, Stephen J. McPhee, Michael W. Rabow, Kenneth R. McQuaid ISBN: 1264687346, Publication date: 2022

LABORATORY DIAGNOSTICS: USE OF LABORATORY TESTS IN PRACTICE
- William J. Marshall: Clinical Chemistry, 4th, 5th or 6th Edition, MOSBY – Harcourt Publishers Ltd., 2008, ISBN: 0-72-34-3159-0

MEDICAL PSYCHOLOGY
- *Lecture handouts* (will be posted on the homepage of the Behavioral Sciences Institute)
- Márta Csabai – Péter Molnár: *Health, Illness, and Care. A textbook of medical psychology.* Budapest, 2000. Springer (available in the library of the Behavioral Sciences Institute)
- Suls J.M. – Davidson, K. – Kaplan, R.M. (eds): *Handbook of Health Psychology and Behavioral Medicine.* The Guilford Press, 2010. (available in the library of the Behavioral Sciences Institute)
- János Pilling (ed): *Medical Communication.* Budapest, 2011. Medicina (available in the library of the Behavioral Sciences Institute)

NEUROLOGY

Literature:

- Mumenthaler, M.: Neurology. Thieme (latest edition)

Suggested books:

- Rowland, L.P.: Merritt¢s Textbook of Neurology. Lea and Febiger, Philadelphia, London (latest edition)
- Simon, R.P., Aminoff, M.J., Greenberg, D.A.: Clinical Neurology. Appleton and Lange (latest edition)
- Adams, R.D., Victor, M.: Principles of Neurology.McGraw Hill (latest edition)

NEUROSURGERY

- Andrew Kaye: Essential Neurosurgery, Churchill Livingstone, ISBN: 0443043507, available online: https://archive.org/details/EssentialNeurosurgery
- Mark S. Greenberg – Handbook of Neurosurgery (ISBN: 978-1-60406-326-4)

NUCLEAR MEDICINE

Recommended textbooks for fourth and fifth year medical students

- Biersack-Freeman: Clinical Nuclear Medicine (May 6, 2020 2nd edition), Publischer Springer,ISBN 9783030394554
- European Nuclear Medicine Guide, 2020 edition; The European Nuclear Medicine guide is a joint publication by the EANM and Nuclear Medicine Section of the European Union of Medical Specialists (UEMS/EBNM). Access the free online version here: nucmed-guide.app,
- Nuclear Medicine Clinical Decision Support, EANM, 2018; Free access via: nucmed-cds.app

OBSTETRICS AND GYNAECOLOGY

- Hacker & Moore's Essentials of Obstetrics and Gynecology (Elsevier - Health Sciences Division, 2015)
- Williams Gynecology, 4TH Edition (McGraw-Hill Education, 2020)
- Williams Obstetrics 26TH Edition (McGraw-Hill Education, 2022)
- Oxford Handbook of Obstetrics and Gynaecology, 4TH Edition

ORTHOPAEDICS

- Miklós Szendrői: Orthopedics. Semmelweis, Budapest 2008 ISBN: 9789639656932

Recommended:

- Miller's Review of Orthopaedics, 8th Ed., November 8, 2019 Publisher: Elsevier, ISBN-10: 0323609783
- Comprehensive Board Review in Orthopaedic Surgery, 1 Ed., September 21, 2016 Publisher: Thieme, ISBN-10: 9781604069044
- Apley and Solomon's Concise System of Orthopaedics and Trauma, 4th Ed., June 20, 2014 Publisher: CRC Press, ISBN-10: 1138456179

OPHTHALMOLOGY

- The Wills Eye Manual: Office and Emergency Room Diagnosis and Treatment of Eye Disease, Edition: 8, Author(s): Kalla Gervasio, Travis Peck ISBN/ISSN: 9781975160753 Publication Date: June 4, 2021

OTO-RHINO-LARYNGOLOGY

- W. Becker, H.H. Naumann, C.R. Pfaltz: Ear, Nose and Throat Diseases, A Pocket Reference, Georg Thiemes Verlag Stuttgart, New York 1996., ISBN 3-13671201-3
- Sziklai: Oto-Rhino-Laryngology Lecture notes 1994. (handout), Order from: Semmelweis Orvostudományi Egyetem Képzéskutató, Oktatástechnológiai és Dokumentációs Központ, Budapest
- Carl RudolfPfaltz: Ear, Nose and Throat Diseases –A Pocket Reference, Thieme Medical Publishers, Inc., 1994., ISBN: 3136712021
- Simson Hall, Bernard H. Colman: Diseases of the Nose, Throat and Ear, A Handbook for Students and Practitioners, 1992., ISBN: 0443045631

PHARMACOLOGY AND PHARMACOTHERAPY

- Katzung: Basic & Clinical Pharmacology 15e, 2021
- Rang & Dale’s Pharmacology 9e 2020
- Dale's Pharmacology Condensed 3e 2021
- Lippincott’s Illustrated Reviews: Pharmacology 8e 2022

PUBLIC HEALTH AND PREVENTIVE MEDICINE

Obligatory:

- Paulik E (ed.): Public Health and Preventive Medicine. Medicina Publishing House, Budapest, 2013

Recommended:

- Tulchinsky TH, Varavikova EA: The New Public Health. 2nd ed. Elsevier Academic Press, 2009, ISBN: 978-0-12-370890-8
- Donaldson LJ, Donaldson RJ: Essential Public Health. 2nd ed. Petroc Press, 2003, ISBN:1900603B7X
- Matthew L. Boulton, Robert Wallace: Maxcy-Rosenau-Last Public Health and Preventive Medicine: Sixteenth Edition 16th Edition, McGraw Hill / Medical, 2021, ISBN-10 1259644510, ISBN-13 978-1259644511

PULMONOLOGY

- Paolo Palange, Anita K. Simonds: ERS Handbook of Respiratory Medicine, 3rd Edition, 2019
- S.J. Bourke: Lecture Notes On Respiratory Medicine, Sixth Edition, Blackwell Publishing, 2003

PAEDIATRICS

- Tom Lissauer, Will Carroll: Illustrated textbook of Paediatrics, 6th Edition, 2021, (Paperback) ISBN: 9780702081811
- Karen Marcdante and Robert M. Kliegman and Abigail M. Schuh: Nelson Essentials of Pediatrics, 9th Edition 2022

PSYCHIATRY

- Donald W. Black, Nancy C. Andreasen: Introductory Textbook of Psychiatry – Sixth Edition, ISBN: 9789386217899

REHABILITATION MEDICINE – BASICS OF THEORY AND DAILY PRACTICE

Obligatory textbooks:

- Ward AB, Barnes MP, Stark SC, Ryan S: Oxford Handbook of Clinical Rehabilitation, 2nd edition. Oxford University Press, 2010. ISBN 978 0 19 955052 4, DOI:10.1093/med/9780199550524.003.0001 – also available online

Recommended textbooks:

- Cifu DX. Braddom's Physical Medicine and Rehabilitation, 5th edition, Elsevier, 2015. ISBN: 9780323280464 – also available as e-book
  or:
  Cifu DX. Braddom's Physical Medicine and Rehabilitation, 6th edition, Elsevier, 2021. ISBN: 9780323625395

RHEUMATOLOGY

The Department has prepared a handbook-sized handout which is an extended format of the lecture presentations. This is updated annually, contains lots of Figures, Tables, follows the list of topics for the end-semester exam and is sufficient and necessary for the exam.

RADIOLOGY

- Richard B. Gunderman, Essential Radiology, 3rd edition, Thieme, New Yorik, Stuttgart, 2007

SURGERY

- Ed.: Norton, Barie, Bollinger, Chang, Lowry, Mulvihill, Pass, Thompson, Shirazi: Surgery: Basic Science and Clinical Evidence (Book with CD-ROM), Springer, 2000., ISBN: 038798447X
- Ed. Norton, Barie, Bollinger, Chang, Lowry, Mulvhill, Pass, Thompson, Shirazi: Surgery: Basic Science and Clinical Evidence 2nd ed. 2008 Edition, Springer 2008, ISBN-13: 978-0387308005 /ISBN-10: 0387308008

UROLOGY

- Smith: General Urology, Appleton and Lange, 14th ed. 1994., ISBN: 0838586139

TRAUMATOLOGY

- The Trauma Manual: TRAUMA AND ACUTE CARE SURGERY
  Third edition, Editors: Andrew B. Peitzman, Michael Rhodes, C. William Schwab, Donald M. Yealy, Timothy C. Fabian, Publisher: Wolters Kluwer / Lippincott Williams & Wilkins
- James D. Hardy: Hardy's Textbook of Surgery, J.B. Lippincott Company, Philadelphia, 1990, ISBN: 0397508182
- Dr. Endre Varga, Dr. Kristóf Boa: Traumatology - concept of the first hour of management (https://elearning.szte.hu)
- Klaus Dresing, Peter Trafton, Jos Engelen (Cast Technician): Casts, Splints, and Support Bandages - Nonoperative Treatmnet and Perioperative Protection, Thieme, ISBN: 9783131753410
- Joseph Schatzker, Marvin Tile: The Rationale of Operative Fracture Care, Second Edition, Springer, 1996, ISBN: 3-540-59388-2

TROPICAL DISEASES

- Manson's Tropical Diseases Edited by G. C. Cook and A. I. Zumla, 23rd Edition.
- Atlas of Tropical Medicine and Parasitology, By Wallace Peters and Geoffrey Pasvol, 6th Edition

THE LANGUAGE OF EFFECTIVE DOCTOR-PATIOENT COMMUNICATION

- Keresztes, Cs., Demeter, É., Borda, B. 2017. The language of effective doctor–patient communication. Part 1. Szeged: JATEPress. ISBN:978-963-315-322-2

THESIS WRITING IN ENGLISH-ACADEMIC LANGUAGE AND STYLE

- Keresztes, Cs. (2017): Medical English genres and text types. Szeged: JATEPress. ISBN: 978-963-315-316-1
- Keresztes, Cs. (2020) Writing and Publishing in English – The Linguistic Aspects of Writing a Scientific Paper, (Széchenyi 2020 pályázat alapján SZTE Repozitóriumban elérhető)

BASIC MODULE SYLLABUS

Academic English for medical students I.

Semester:	1st or 3rd	**Code:**	AOK-OASZV761
Course type:	Practice	**Category:**	elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Term Mark

topic

* Placement test and Breaking news;
* Introduction to scientific and medical language use: note-taking techniques and word formation (definitions, word order, collocations);
* Understanding a text: reading (scan/skim/read for detail);
* Writing with a purpose: essays (with special attention to paragraphs, topic sentences and hedging) and descriptions (graphs, figures, tables);
* Oral skills: ppt and presentation (including all knowledge gained with special attention to signposting and presentation skills).

Academic English for medical students II.

Semester:	2nd or 4th	**Code:**	AOK-OASZV762
Course type:	Practice	**Category:**	elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Term Mark

topic

* An introduction to medical English
* Cohesion and coherence in written language: essay writing
* Nouns and noun combinations in medical English
* Reading for data (graphs and tables)
* Comparison in scientific language
* Cause and effect in medical language use
* Most practical verb tenses in science
* Modal verbs in medicine
* Linking words and meaning construction in writing

Anatomy, Histology and Embryology I. (+Dissection Practice I. & Histology Practice I.)

Semester:	1st	**Code:**	AOK-OAK0211/OAK0221/OAK0231
Course type:	Lecture/Practice/Practice	**Category:**	compulsory
Hours/week:	2/3/2(16 hrs total)	**Department:**	Anatomy
Credit:	5/3/-	**Form of Exam:**	Exam/Term Mark/Signature

week	**Anatomy I. (90-min lecture/week)**	**Anatomy I. (45-min lecture/week, held on every 2nd week online)**	**Dissection I. topic**	**Histology I. topic**
1.	Introduction to human anatomy (anatomical nomenclature, planes, directions, axes). General osteology. General syndesmology.	Basic tissues, part 1: Epithelial tissues	*General information on the classes and exams.* *Injury preventive rules and dissecting room regulations.* Bones of the upper limb.	Use of light microscope. Introduction to histological methods. Interpretation of histological preparations.
2.	General myology. General angiology.		Joints of the upper limb (UL). Cross-sectional anatomy of UL.	**Epithelial tissues, part 1** Kidney (HE) Jejunum (HE) Trachea (HE)
3.	General neuroanatomy. Spinal cord segment. Formation of the plexuses from the spinal nerves.	Basic tissues, part 2: Connecting and supporting tissues	Dissection of the muscles of the upper limb. Cross-sectional anatomy of UL.	**Epithelial tissues, part 2** Oesophagus (HE) Finger pad (HE) Unicellular gland (PAS+H) Submandibular gland (HE)
4.	Nerves of the upper limb.		Blood vessels of the upper limb. Cross-sectional anatomy of UL.	**Connective tissues** Finger pad (HE) Tendon (HE) Adipose tissue (HE) Adipose tissue (frozen section, Sudan Red)
5.	Functional anatomy of the upper limb.	Basic tissues, part 3: Muscle tissues	Nerves of the upper limb. Cross-sectional anatomy of UL.	**Supporting tissues** Hyaline cartilage (HE) Elastic cartilage (orcein) Fibrocartilage (HE) Bone (ground section) Endochondral ossification (HE)
6.	Nerve tissue, part 1.		**1st practical assessment** Anatomy of the upper limb.	**Muscle tissue** Smooth muscle (HE) Skeletal muscle (cross section, HE) Skeletal muscle (longit. section, HE) Cardiac muscle (HE) Cardiac muscle (iron hematoxylin)
7.	Nerve tissue, part 2.	Formed elements of blood. Haematopoiesis.	Bones of the pelvis and the free lower limb. Joints of the pelvis and the free lower limb.	**Nerve tissue, part 1** Sensory ganglion (HE) Spinal cord (HE) Cerebral cortex (HE) Cerebellum (HE) Vegetative ganglion (Ag)

8.	Structure (bone, joints, muscles) of the trunk. Layers of the thoracic wall. Surface projections of the thoracic organs.		Muscles of the pelvis and the free lower limb (LL). Cross-sectional anatomy of LL.	**Nerve tissue, part 2** Peripheral nerve (longit. section, HE) Peripheral nerve (cross section, HE) Peripheral nerve (longit. section, Os) Peripheral nerve (cross section, Os) Astrocyte (GFAP IHC)
9.	Biomechanical features of the trunk. Functional and sectional anatomy of the thorax.	Immune and lymphatic systems. Thymus: anatomy and histology.	Blood vessels and nerves of the lower limb. Cross-sectional anatomy of LL.	**1st practical assessment** Basic tissues.
10.	Mediastinum: divisions, layers, contents. Heart: chambers and valves.		**2nd practical assessment** Anatomy of the lower limb.	**Blood vessels:** Aorta (HE) Aorta (resorcin-fuchsin) Artery, vein (HE) Artery, vein (Orcein) Spermatic cord (HE)
11.	Intrinsic vessels of the heart. Impulse generating and conducting system of the heart. Innervation of heart. Anatomy of the pericardium.	Vegetative nervous system.	Bones, joints of the trunk. Anatomy of the thoracic cage. Superficial and deep back muscles. The diaphragm. Related cross-sectional anatomy.	**Blood** Blood smear (MGG) **Haematopoiesis** Red bone marrow (HE) **Lymphoid organs, part 1** Thymus (HE)
12.	General embryology. Development of the embryo: gastrulation and neurulation.		Superior mediastinum. Surface projections of the heart and the thoracic organs onto anterior thoracic wall. External features of the heart. The absolute and relative cardiac dullness.	**Lymphoid organs, part 2** Spleen (HE) Lymph node (HE) Palatine tonsil (HE) Root of tongue (HE)
13.	Development of the amnion and the yolk sacs. Fetal blood circulation.	Radiology of the limbs and chest.	Middle mediastinum. Dissection of the heart, cardiac vessels and pericardium. The interior of the opened heart. Posterior mediastinum. Related cross-sectional anatomy.	**Embryology** Spermatic cord (HE) Placenta (HE) Chicken embryo (HE)
14.	Embryology of heart and great vessels.		**3rd practical assessment** Anatomy of the trunk, thorax, mediastinum and heart.	**1st practical assessment** Histology of circulation, blood smear, haematopoiesis, lymphoid organs and embryology.

Anatomy, Histology and Embryology II. (+Dissection Practice II. & Histology Practice II.)

Semester:	2nd	**Code:**	AOK-OAK0241/OAK0251/OAK0261
Course type:	Lecture/Practice/Practice	**Category:**	compulsory
Hours/week:	2/3/2	**Department:**	Anatomy
Credit:	3/3/2	**Form of Exam:**	Exam/Term Mark/Term Mark

week	**Anatomy II. (90-min lecture/week)**	**Anatomy II. (45-min lecture/week, held on every 2nd week online)**	**Dissection II. topic**	**Histology II. topic**
1.	Anatomy of the upper airways.	Anatomy of the lower airways. Development of the respiratory system.	Summary of mediastinum: divisions and contents. Related cross-sectional anatomy.	**Recapitulation.**
2.	Anatomy, histology and development of the oral cavity, teeth and tongue.		Nasal cavity, paranasal sinuses, larynx, trachea, lungs and the pleura.	**Respiration** Trachea (HE) Lung (HE) Lung (orcein+H)
3.	Anatomy, histology and development of the oropharyngeal isthmus, pharynx and esophagus.	Anatomy, histology and development of the large salivary glands.	Cross-sectional anatomy of the nasal cavity, paranasal sinuses, larynx, trachea, lungs	**Digestive system** Lip (HE) Dorsum of tongue (HE) Circumvallate papilla (HE) Parotid gland (HE) Submandibular gland (HE) Sublingual gland (HE)
4.	Blood supply, lymphatic drainage, innervation and topographical relationships of the abdominal organs.		Muscles of the abdominal wall, rectus sheath. Surface projections of the abdominal organs. Topographic division of the abdominal cavity. Peritoneum, omental bursa.	*General structure of the alimentary tract.* Esophagus (HE)
5.	Anatomy of the stomach, small and large intestines.	Histology and embryology of the stomach, small and large intestines.	Midsagittal plane section of the head: oral cavity, pharynx, esophagus.	Cardia (HE) Fundus, corpus (HE) Pylorus (HE) Duodenum (HE) Jejunum (HE) Jejunum (HE+PAS) Ileum (HE)
6.	Anatomy, histology and development of the liver, extrahepatic duct system, gall bladder and pancreas.		Stomach. Blood supply to the abdominal organs. Branches of the abdominal aorta. Related cross-sectional anatomy.	Large intestine (HE) Vermiform appendix (HE) Anal canal (HE)
7.	Anatomy of the retro-peritoneum. Anatomy and histology of the urinary system.	Investigation of the alimentary system by means of imaging techniques.	Topography and anatomy of the small and large intestines. Related cross-sectional anatomy.	Liver (HE) Liver (Ag) Liver (Kupffer cells) Gallbladder (HE) Pancreas (HE)

8.	Anatomy of the female genital organs.		Anatomy of the liver, extrahepatic ducts, pancreas and spleen. Anatomy of the hepatic portal vein and the inferior vena cava. Related cross-sectional anatomy.	**1st practical assessment** Respiratory and digestive systems.
9.	Anatomy of the male genital organs. The sacral parasympathetic system.	Anatomy of the female and male genitalia.	**1st practical assessment** Respiratory and digestive systems, spleen and abdominal wall.	**Urogenital systems** Kidney (HE) Ureter (HE) Urinary bladder (HE) Penile urethra (HE)
10.	Development of the urogenital system.		Posterior abdominal wall. Retroperitoneal organs and their surface projections. Anatomy and topography the of kidneys and ureters.	Ovary (HE) Uterine tube (HE) Uterus (HE) Cervix of uterus (HE)
11.	Pelvic connective tissue structures (subperitoneal spaces). The perineum.	Endocrine organs, part 1	Female genital organs. Study of mid-sagittal plane-cut preparations of the female pelvis and perineum. Related cross-sectional anatomy.	Testis-epididymis (HE) Spermatic cord (HE) Seminal vesicle (HE) Prostate (HE) Penis (HE)
12.	Endocrine organs, part 2		Male genital organs. The inguinal canal. Study of mid-sagittal plane-cut preparations of the male pelvis and perineum. Related cross-sectional anatomy.	**Endocrine organs** Diencephalon (oxytocin IHC) Hypophysis (HE) Pineal gland (HE)
13.	Endocrine organs, part 2	Investigation of uropoietic system by means of imaging techniques.	Female and male perinea, ischioanal fossa, pudendal canal. Related cross-sectional anatomy.	Thyroid gland (HE) Parathyroid gland (HE) Suprarenal gland (HE) Pancreas (HE) Corpus luteum (HE)
14.	Investigation of the female and male genitalia by means of imaging techniques.		**2nd practical assessment** Urogenital organs, lesser pelvis and perineum.	**2nd practical assessment** Urogenital and endocrine organs.

Head, Neck and Neuroanatomy Lecture

(+Head, Neck and Neuroanatomy- Dissection Practice & Histology of the Nervous System and Sense Organs)

Semester:	3rd	**Code:**	AOK-OAK0271/OAK0281/OAK0291
Course type:	Lecture/Practice/Practice	**Category:**	compulsory
Hours/week:	2/3/2	**Department:**	Anatomy
Credit:	3/3/2	**Form of Exam:**	Comprehensive Exam/Term Mark/Term Mark

week	**Lecture topic**	**Dissection prac. topic**	**Histology topic**
1st	Anatomy and blood supply of the spinal cord. Fine structure of the grey matter and white matter. Rexed's laminae and corresponding nuclei. Arrangement of the spinal cord tracts. Reflex arcs of the spinal cord.	*Injury preventive rules and dissecting room regulations.* Cerebral hemispheres: gyri and sulci. Blood supply to the brain, the cerebral arterial circle.	*General information, rules and regulations.* Peripheral nerve (longit. & cross sections, HE) Peripheral nerve (longit. & cross sections, Os)
2nd	Neuroanatomy and blood supply of the medulla oblongata, pons and mesencephalon. Cranial nerve nuclei and the reticular formation.	Vertebral canal, meninges of the spinal cord and spinal cord preparation. Duplications of the dura mater, meningeal spaces. Cross-sectional anatomy of CNS.	Sensory nerve ending (HE) Sensory nerve ending (Ag) Motor end-plate (AChE) Sensory ganglion (HE) Vegetative ganglion (Ag)
3rd	Diencephalon: organization. Thalamus and hypothalamus. Blood supply to the diencephalon.	Structure of the brainstem, the fourth ventricle, rhomboid fossa. Exits of the cranial nerves (from the brainstem and the skull). Cross-sectional anatomy of CNS.	Spinal cord (HE) Spinal cord (myelin staining) Medulla oblongata (Loyez)
4th	Anatomy, histology and synaptology of the cerebellum. Neuroanatomy of the cerebellar movement regulation. Morphological and functional bases of the regulation of the blood circulation in the brain: the blood-brain barrier and the CSF.	Diencephalon. Lateral and third ventricles. Flechsig's cut. The extreme, external and internal capsules. Basal nuclei (ganglia). Cross-sectional anatomy of CNS.	Diencephalon (oxytocin IHC) Astrocytes (GFAP IHC) Microglia (CD11b IHC)
5th	Neuroanatomy of the cerebral cortex. The 'module concept' in the cerebral cortex architecture. The limbic system incl. the hippocampus.	Cerebellum: topography, parts and blood supply. Cerebellar nuclei. Cerebellar peduncules. Hippocampal formation. Cross-sectional anatomy of CNS.	Cerebellum (HE) Cerebellum (Ag) Hippocampus
6th	Basal forebrain: amygdaloid complex. Basal nuclei: anatomy and their functions in the movement regulation.	**1st practical assessment** Macroscopic anatomy of the CNS.	Neocortex (HE) Neocortex (parvalbumin IHC)
7th	Development of the nervous system.	Skull, part 1: Temporal and sphenoid bones. Maxilla and mandible. The cranial base: external and internal surfaces. The facial (frontal) and lateral aspects of the skull.	**1st practical assessment** The nervous systems.

8th	The cranial nerves V, VII, VIII, IX, X, XI and XII: ganglia and peripheral branches.	Skull, part 2: Calvaria. Bony nasal and oral cavities. Infratemporal and pterygopalatine fossae.	Meninges. Cranial nerves: ganglia and peripheral branches
9th	Anatomy and histology of the eye. Parts, layers and blood supply of the retina. Accessory visual structures: eyelids, lacrimal apparatus and extraocular muscles.	Muscles of the neck. Cervical triangles. Fascial system of the neck. Masticatory and facial muscles. Related cross-sectional anatomy.	Finger pad (HE) Hairy skin (HE) Lacrimal gland (HE)
10th	Neuroanatomy of the visual pathway. Light reflex of the pupil. Accomodation reflex. Horizontal and vertical gaze control.	Regions of the head and neck; their arterial supply, venous, lymphatic drainage and lymph nodes.	Eye (HE) Eyelid (HE)
11th	Anatomy and histology of the external and middle ears. Anatomy of the inner ear: osseous and membranous labyrinths.	Topography of the orbit. Anatomy of the eye.	Resting mammary gland (HE) Lactating mammary gland (HE)
12th	Organ of Corti. Fine structures of the cristae and maculae. Auditory and vestibular pathways.	Anatomy of the middle and inner ears. Cross-sectional anatomy of the orbit and ears.	Cochlea (HE) Tympanic cavity
13th	Development of the eye and ear.	Cervical plexus. Cervical part of the sympathetic trunk. Organization of the peripheral parasympathetic system in the head. Pterygopalatine fossa. Thyroid gland. Cross-sectional anatomy of neck.	**2nd practical assessment**
14th	The branchial apparatus: formation, development and derivatives of the pharyngeal arches, pouches and grooves.	**2nd practical assessment** Skull. Regions of the head and neck.	Recapitulation

Basic Immunopathology

Semester:	4th ,6th, 8th, 10th	**Code:**	AOK-OASZV171
Course type:	Lecture	**Category:**	elective
Hours/week:	1	**Department:**	Institute of Surgical Research
Credit:	1	**Form of Exam:**	Evaluation(5)

topic

* General informations. Introduction to immunopathology. Transplantation immunology: transplantation antigens, allogeneic recognition, effector mechanisms of graft rejection
* Histocompatibility testing. Immunological investigations before and after transplantation.

* Immunological aspects of organ transplantation. Immunology of bone marrow transplantation: graft-versus-host disease. Immunological aspects of xenogeneic transplantation.
* Immunosuppressive therapy
* Histocompatibility testing. Immunological investigations before and after transplantation.
* Reproductive immunology
* Tumor immunology: tumor antigens, antitumor immune responses. Evasion of immune responses by tumors. Immunotherapy for tumors
* Immunological tolerance. Self tolerance: central and peripheral tolerance. Mehanisms of T and B cell tolerance
* Pathomechanisms of autoimmunity: failure of self tolerance, genetic factors, role of infections and other factors; effector mechanisms. Immunological bases of systemic and organ-specific autoimmune diseases
* Written test exam

Basic Life Support

Semester:	1st	**Code:**	AOK-OAK011
Course type:	Practice	**Category:**	compulsory
Hours/week:	2	**Department:**	Emergency Medicine
Credit:	2	**Form of Exam:**	Term Mark

week	**topic**
1.	Principles of first aid. Emergency situations. Victim assessment routine. Assessing respiration and pulses. Normal and abnormal pulse rates per minute.
2.	The unresponsive patient. Terms of position. Extrication of the injured patient (Rautek manoeuvre).
3.	Basic life support. Victim assessment and positioning. Determine unresponsiveness. Assess for breathlessness. Provide rescue breathing. Circulation. Esmarch-Heiberg manoeuvre.
4.	BLS (one-person CPR, two-person CPR)
5.	Obstructed airway emergencies. Heimlich manoeuvre.
6.	Paediatric basic life support.
7.	Bleeding (haemorrhage). Bleeding from an artery, from a vein. General procedures for controlling bleeding. Direct and indirect pressure. Arterial pulse points.
8.	Recognition of patients with shock condition. Body positioning for preventing shock.
9.	Classification of open wounds. Bandaging.
10.	Burn injuries. Electrical injuries. Heat and cold emergencies. Water accident.
11.	Mechanism of injury. Types of injury to joints and bones. Splints. Head injuries. Injuries to the spine. Injuries to the chest. Injuries to the abdomen.
12.	Poisoning.
13.	Heart attack. Respiratory emergencies.
14.	Revision of BLS.

Basic Principles of Internal Medicine

Semester:	6th	**Code:**	AOK-OAK181/AOK-OAK82
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Internal Medicine
Credit:	4/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	Case history, documentation	Practical aspects of history taking and documentation.
2.	Inspection, palpation	The role of inspection in the physical diagnosis. What can be determinded by inspection? Palpation of different organs.
3.	Fever, pulse, blood pressure, evaluation of the periferic vessels	Determination of the body temperature, the measurement of the blood pressure, evaluation techniques of the periferial vessels.
4.	Physical examination of the chest and the lungs.	Inspection, palpation, percussion and auscultation of the chest.
5.	Heart sounds, murmurs, physical findings in heart diseases	Physical examination (Inspection, palpation, percussion and auscultation) of the heart.
6.	Electrocardiography, clinical presentation of left and right ventricular failure	Technical implementation of electrocardiography (ECG). The normal ECG.
7.	Imaging techniques in cardiology	Basics of imaging techniques in cardiology (echocardiograpgy, CT, MRI, coronary angiography)
8.	Physical examination of the musculoskeletal system	Physical examination of the musculoskeletal system
9.	Physical signs of endocrine disorders	Physial examination of patients with endocrine disorders.
10.	Physical examination of the abdomen, acute abdomen, abdominal sonography	Physical examination (inspection, palpation, percussion and auscultation) of the abdomen. Principles of adbominal sonography.
11.	Physical examination in neurology	Neurological examination of the patients.
12.	Physical and laboratory investigation in clinical haematology	Evaluation of patients with hematological diseases. Phsical
13.	Introduction to gastrointestinal endoscopy and function testing	The principles of gastrointestinal endoscopy and tests of the gastrointestinal function.
14.	Facultative consultation	Evaliation of a patient (history taking and complete physical examination)

Basic Surgical Skills

Semester:	4th	**Code:**	AOK-OAK141/AOK-OAK142
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Institute of Surgical Research
Credit:	3/-	**Form of Exam:**	Exam/Signature

	Lecture	**Practice**
*	Asepsis and antisepsis. Historical background. Surgical infections, sources of infections. Types, classification, risks and prevention of wound contaminations. Sterilization, disinfection. Preparation of the patient before operation: scrub preparation and isolation of the surgical site. Scrubbing, disinfection, gowning and gloving of the operating team. Personnel attire and movement. Basic rules of asepsis in the operating room. Postoperative wound management. Surgical antisepsis. Design and equipments of the operating room, basic technical background. Operating room personnel and their duties. Positioning of the patient on the operating table. Positioning.	1. General information. Scrubbing, gowning and gloving. Practical rules of asepsis in the operating room. Behavior and movement in the operating room
*	Surgical instruments. Basic surgical instruments, special surgical tools and technologies, suture materials. Wound closure (sutures, clips, adhesive strips). Imperfections of suturing techniques. Removal of sutures. Drainage.	2. Basic surgical instruments, suture materials, textiles. Scrubbing, gowning and gloving. Scrub preparation and draping of the surgical site. Making incisions (on skin pad), wound closure with sutures or clips. Practicing instrument knots by means of the Suture Tutor program.
*	The operation. Basic surgical interventions. Indications for an operation, informed consent, operative risk, the surgeon's responsibility. Preoperative investigations. Preoperative preparation of the patient. Basics of minimally invasive surgical interventions. Historical background. Components of the laparoscopic tower, laparoscopic instruments. Local anesthesia (drugs, types of local anesthesia, complications). Perioperative fluid balance, fluid requirements and fluid therapy.	3. Tying surgical knots. Tying surgical knots (hand and instrument knots). Knotting under tension and in cavities.
*	Wounds. Types and classification of accidental wounds. Wound healing, scar formation. Surgical wounds. Wound closure and its complications. Management of accidental wounds. Dressings, types of bandages. Innovations in wound treatment.	4. Cleansing and isolation of the operative field.
*	Bleeding. Types and classification of hemorrhage. Signs and consequences of blood loss. Bleeding in surgery (pre-, intra- and postoperative bleeding). Factors influencing operative blood loss. Surgical hemostasis (mechanical, thermal, chemical-biological methods). Blood replacement in surgery, autotransfusion.	5. Management of accidental wounds. Dressing, types of dressing. Changing dressing under aseptic conditions. Removal of sutures. Handling surgical bleeding.

* Complications. Definition and classification of complications. Complications of anaesthesia. Complications of wound healing. Complications related to surgery. Haemorrhagic complications. Pathophysiology, signs and treatment of hemorrhagic shock.	6. Basics of minimally invasive surgery. Components of the laparoscopic tower, laparoscopic instruments. Eupractic movements, handling of laparoscopic instruments, knotting.
* Basics of minimally invasive surgical interventions. Historical background. Components of the laparoscopic tower, laparoscopic instruments. Basic procedures, pathophysiological background. Complications.	7. Suturing of tissue under sterile circumstances
	8-9. Practical exam. (1) Surgical scrubbing and gowning (2) Knotting under tension and in a deep cavity (3) Surgical suture (mounting of a needle holder, closure of a 5 cm-long incision with Donati-stitches, instrumental knotting.

Biochemistry I.

Semester:	3rd	**Code:**	AOK-OAK051/AOK-OAK052
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	4/2	**Department:**	Biochemistry
Credit:	6/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	Biochemistry of the blood. RBC Biochemistry of the blood. White blood cells	PRACTICE: General information, refresment
2.	Biochemistry of the blood. blood plasma	PRACTICE: Determination of bilirubin.
3.	Biomembranes.	SEMINAR: Blood, membranes
4.	Biochemistry of the muscle	PRACTICE: electrophoresis of serum proteins
5.	Biochemistry of the connective tissue. Adhesive glicoproteins	PRACTICE: ion det. by colorimetry, blood gas analyis
6.	Biochemistry of cell adhesion, cytoskeleton. Biochemistry of liver. First pass metabolism, LFT	PRACTICE: Diagnosis of heart attack and determination of cardiovascular risk factors (chol,TG, lipoproteines)
7.	Biochemistry of liver. Biotransformation. Biochemistry of the nervous tissue. Neurotransmitters.	SEMINAR: (connective tissue, cell adhesion and cytoskeleton, nutrition)
8.	Biochemistry of the nervous tissue. Neurotransmitters. Biochemistry of the nervous tissue. Neurotransmitters.	PRACTICE: Biochemistry of liver Determination of ALAT and ASAT
9.	Biochemistry of the endocrine system.	SEMINAR: liver, muscle, nervous tissue
10.	holiday	PRACTICE: Cholinerg neurotransmission Determination of cholinesterase enzyme activity

11.	Biochemistry of the endocrine system. Regulation of gene expression.	PRACTICE: Cholinerg neurotransmission Determination of cholinesterase enzyme activity
12.	Regulation of gene expression	PRACTICE: determination of blood glucose and HbA1c
13.	Biological signalization, second messenger systems.	PRACTICE: determination of mRNA isoform levels by RT-PCR
14.	Biological signalization, second messenger systems. General principles of biochemical adaptation, limits of adaptation.	SEMINAR: endocrine system, cell signalling

Biochemistry II.

Semester:	4th	**Code:**	AOK-OAK053/AOK-OAK054
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	4/2	**Department:**	Biochemistry
Credit:	6/-	**Form of Exam:**	Comprehensive Exam/Signature

week	**Lecture**	**Practice**
1.	Proteins and bioenergetics: structure and function of proteins, thermodynamics of living systems	General information, work safety, principles of lab work
2.	Enzymology: enzyme classes, coenzymes, characterisation of enzymes, isoenzymes, multienzyme systems	**Determination of protein concentration**
3.	Enzymology: molecular mechanism of catalysis, enzyme kinetics, modulation and regulation of enzyme activity	Substrate specificity and temperature optimum of amylase enzyme activity
4.	Carbohydrate metabolism: Digestion and absorption of carbohydrates, glycolysis, pyruvate dehydrogenase enzyme complex, gluconeogenesis	**SEMINAR (proteins, enzymes)**
5.	Carbohydrate metabolism: Fructose and galactose metabolism, glycogen metabolism, pentose phosphate cycle and glucuronide shunt	**Assay of activity of alkaline phosphatase**
6.	Carbohydrate metabolism: regulation of blood glucose level, glycoproteins Lipid metabolism: Eicosanoids, digestion and absorption of lipids, lipoprotein metabolism	**SEMINAR (carbohydrate metabolism)**
7.	Lipid metabolism: lipid mobilisation, oxidation of fatty acids, ketone bodies, diabetes mellitus	**Determination of glucose-6-phosphatase activity**
8.	Lipid metabolism: Synthesis of fatty acids, synthesis of triacyl glycerols and phospholipids, sphingolipids, cholesterol and steroid metabolism	**1st MTO**
9.	Amino acid metabolism: Digestion and absorption of proteins, catabolism of essential amino acids, fate of amino group, urea cycle	SEMINAR (lipid metabolism)
10.	Amino acid metabolism: metabolism of non-essential amino acids, fate of carbon skeleton of amino acids, one-carbon units, glutathione	Determination of triacyl glycerol and cholesterol

11.	Amino acid metabolism: **Synthesis of hem and porphyrine, enterohepatic circulation of hem degradation products**	SEMINAR (amino acid metabolism)
12.	Citric acid cycle: steps and regulation of the cycle, relationship between the cycle and other metabolic pathways	**SEMINAR (citric acid cycle, respiratory chain, oxidative phosphorylation)** 2nd MTO
13.	Mitochondrial transport systems, mechanism of respiratory chain and oxidative phosphorylation	**Investigation of the oxygen consumption of isolated mitochondria**
14.	Nucleotide metabolism: synthesis and degradation of purine and pirimidine nucleotides, salvage pathways, synthesis of deoxyribonucleotides	Nucleotide metabolism Determination of uric acid concentration

Cell Biology and Molecular Genetics I.

Semester:	1st	**Code:**	AOK-OAK151/AOK-OAK152
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Medical Biology
Credit:	4/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	Structure and operation of the cell	Handling of technical devices
2.	The DNA	Microscopy-1
3.	Transcription, translation & proteins	Microscopy-2
4.	Mutation &jumping genes	DNA and RNA purification
5.	Bacterial genetics	Genetic exercises
6.	Genetic regulation in eukaryotes	Separation techniques
7.	Mendelian and non-Mendelian genetics	Lac operon & consultation
8.	Epigenetics	
9.	Genes and traits	
10.	Genetic diseases	
11.	Evolution	
12.	Cytoskeleton & membrane processes	
13.	Molecular biology of viruses	
14.	Frontiers of molecular and cell biology	

Cell Biology and Molecular Genetics II.

Semester:	2nd	**Code:**	AOK-OAK153/AOK-OAK154
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Medical Biology
Credit:	4/-	**Form of Exam:**	Exam/Signature

week	Lecture	Practice
1.	Human genome	Molecular cloning
2.	Genetically modified organisms & cloning	PCR & DNA sequencing
3.	Cell cycle & tumor formation	Detection of DNA and RNA
4.	Molecular medicine	Detection of proteins
5.	Cell signalling-1	DNA and protein chips, DNA finger printing
6.	Cell-signalling-2	Genetic exercises
7.	Cell communication & tissue differentiation	Reporter genes & consultation
8.	Genetic regulation of ontogenesis	
9.	Neural communication & consciousness	
10.	Molecular biology of sensation	
11.	Immunogenetics	
12.	Molecular evolution	
13.	Genetics of behaviour	
14.	Genetic disease of brain and psyche	

Chemical Misconceptions

Semester:	2nd-10th	**Code:**	AOK-OASZV411
Course type:	Lecture	**Category:**	elective
Hours/week:	2	**Department:**	Medical Chemistry
Credit:	2	**Form of Exam:**	Evaluation(5)

week	topic
1.	Fear of the Unknown: Chemicals. Life as a Risky Business. Natural Products: a Delusion of Safety.
2.	Man-Made Commodities and Safety Issues. The Cholera Pandemonium: the Blind Leading the Blind. Regulating Chemicals: Maybe or Maybe Not.
3.	Biowaste: Biotechnology in Perspective. Vedic Wisdom: Lead and Ayurveda. Manipulating Weather: Ocean Fertilization.
4.	Test Your Cranberry Pie: Vitamin C and Benzoates. Food Dyes: the Good, the Bad, and the Ugly. To Add or Not to Add? Food Additives.
5.	The Organic Vegetable Hype. Fat Matters: Margarine vs. Butter. Fake Food and Kidney Stones.
6.	The Coming Shortage: Vanilla and Menthol. Red Alert: Meat Colors. Moldy Business: Whole-Grain Cereals.
7.	Sweet Dreams without Sugar: Artificial Sweeteners. Sweet as Birch: Xylitol. The Thickening Stuff: Guar Gum Gumbo.
8.	Is Caffeine Free of Risk? Perfect Timing: Egg Cooking. The Biofuel Dilemma.
9.	Food Fraud: Then and Now. The Vitamin that Never was: B17. Joint Efforts: Glucosamine and Chondroitin.

10.	Is the Use of Cyanogen Bromide Forbidden in Hospitals? Poison in Groundwater: Arsenic. Was Napoleon Murdered with Arsenic?
11.	Don't Touch the Spilled Mercury! Was DDT of More Harm Than Use? Could Dioxin be the Most Toxic Substance?
12.	The Great Hungarian Red Mud Deluge. The Erin Brockovich Mystery: Chromium Salts. The Fluoride War. Nonsense du jour: Food Babe
13.	What Was the Gulf War Syndrome? The Strange Case of Bisphenol A. Is grapefruit a medicinal plant?

Cytomorphology and Microtechnics

Semester:	1st, 3rd or 5th	**Code:**	AOK-OAKV211
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Cell Biology
Credit:	2	**Form of Exam:**	Evaluation(5)

week	**topic**
1.	Evolution of cellular organisms. General morphology of the eukaryotic cell: size, shape. Research methods for structural cell biology.
2.	Intracellular compartmentalization. Structure of the cell membrane. The endomembranes. Membrane dynamics (membrane fusion and fission).
3.	Membrane modifications: cell surface modification (microvilli, stereocilia, cilia), coupling structures (belt-, spot-, hemidesmosome), impermeable junction (tight junction), communication junctions (gap junction, chemical synapse).
4.	Structure and functions of the extracellular matrix. The lamina basalis. Cell adhesion molecules.
5.	Structure and functions of the cytoskeleton. General characteristics of cytoskeletal proteins. Actin filaments/microfilaments. Microtubules and intermedier filaments.
6.	Light- and electron microscopic structure of the cell nucleus and nucleolus. Organization of the chromatin. Chromosomes.
7.	The cell cycle. Growth and division of the cell. Mitotic and meiotic cell divisions.
8.	The endomembranes: endoplasmic reticular systems, Golgi complex. Targeted intracellular transport of ptoteins. The vesicular transport and secretion.
9.	Transport across membranes. Internalization of macromolecules and viruses. Phagocytosis. Receptor-indiced endocytosis, exocytosis, transcytosis. The lysosomes.
10.	Mitochondria: general characteristics and types.
11.	Cyto- and histotechnics I. Nuclear / chromatin staining methods. Light- and electron microscopic enzyme histochemical methods.
12.	Cyto- and histotechnics II. Light- and electron microscopic immunocytochemical and – histochemical methods.
13.	Scanning electron microscopic techniques (freeze-etching, freeze-fracturing, etc.).

Fundamentals of Medical Physics

Semester:	1st	**Code:**	AOK-OASZV191
Course type:	Seminar	**Category:**	elective
Hours/week:	1 (2 hrs/2 w)	**Department:**	Medical Physics
Credit:	1	**Form of Exam:**	Evaluation (5)

topics

1. **Mathematical foundations.** Normal form of numbers. The SI system of units: base units and prefixes. The use of symbols. Angles. Functions: linear functions, powers, exponential, logarithmic and trigonometric functions. Derivative and integral. Geometry: circumference, area, surface area and volume.
2. **Kinematics and dynamics.** Vectors. Kinematics: uniform motion and circular motion. Dynamics: interactions, Newton's laws, inertial systems, types of forces.
3. **Oscillations.** Fundamental concepts: amplitude, period, frequency, angular frequency. Harmonic oscillations. Damped oscillations. Natural angular frequency. Driven oscillations and resonance.
4. **Waves.** Fundamental concepts: wavelength, (angular) wave number, speed of propagation. Types of waves: longitudinal and transverse. Wave propagation: reflection and refraction (Snell's law). Interference, standing waves. Diffraction. Linear polarisation. Fundamentals of acoustics.
5. **Energy, work.** Kinetic energy. Potential energy: gravitational, elastic. Mechanical energy and its conservation. Power.
6. **Optics.** Reflexion and refraction: dispersion and total internal reflexion. Polarisation. Image formation of mirrors and lenses.
7. **Hydrostatics**. Density. Pressure. Hydrostatic pressure.
8. **Thermodynamics**. Heat and temperature. Temperature scales. Thermal expansion. Heat capacity, specific heat and latent heat. Determination of the thermal equilibrium. The equation of state for an ideal gas. Thermodynamic processes. Equipartition theorem. The first law of thermodynamics.
9. **Electricity**. Stationary charges, electrostatics: Coulomb's law, electric field, electric field lines. Electric potential and voltage. Dipole. Accumulating charges: capacitance, capacitors in series and in parallel. Moving charges, electric current: Ohm's law, resistance and conductance, resistors in series and in parallel, Kirchhoff's laws. Electric power. Direct current and alternating current, capacitors in alternating current circuits.
10. **Magnetism**. Magnetic field and magnetic field vector. Interaction between moving charges (currents) and the magnetic field (Lorentz force). Magnetic properties of matter: permanent magnets, ferro-, para- and diamagnetic substances. Magnetic moment, intrinsic magnetic moment of charged particles (electron and proton spin). Magnetic effects of currents. Electromagnetic induction: magnetic flux, Faraday's law, Lenz's law. Electric motor and electric generator. Self-inductance, inductors in an alternating current circuit.

Hungarian Language I.

Semester:	1st	**Code:**	AOK-OAK601
Course type:	Practice	**Category:**	compulsory
Hours/week:	4	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Term Mark

week **topic**

1. Introduction. Basic expressions. Vowels, consonants, vowel harmony. The Hungarian alphabet.
2. Definite and indefinite articles. Numbers. Money and measurements.
3. Personal pronouns; to be present tense; the –nak, -nek ending. Nationalities, jobs, adjectives. Greetings, address forms.
4. Usage of the verb van; the –ban, -ben ending; the –n, -on, -en, -ön ending; telling the time. Buildings, places and venues; expressions with the verb van.
5. Revision 1
6. Indefinite conjugation 1 (present tense)
7. the –t ending; yes-no questions.

8. Subjects, food, drinks, vegetables, fruits.
9. Indefinite conjugation 2
10. the –val, -vel ending. Cooked food. Some Hungarian dishes.
11. Revision 2
12. Verb formation; the infinitive –ni and its usage; the –ul, -ül ending; the –lak, -lek ending.
13. Verbs, modal verbs. Festivals, fairs, events.
14. Oral tests

Hungarian Language II.

Semester:	2nd	**Code:**	AOK-OAK602
Course type:	Practice	**Category:**	compulsory
Hours/week:	4	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Term Mark

week **topic**

1. General revision
2. Conjugation of jönni and menni (present tense); the –ba, -be and –ra, -re endings; the –ból, -ből and –ról, -ről endings.
3. Means of transportation, other words in connection with transportation. Public transport in cities, travelling in Hungary.
4. Revision 3.
5. The possessive endings. Body parts, time expressions (past tense).
6. The verb fáj(t); to be past tense.
7. Past tense (first person singular only, indefinite conjugation)
8. the –kor ending; the –tól, -től and the –ig endings.
9. The –s, -os, -as, -es, -ös ending
10. linking words. Word formation. Holidays.
11. Revision 4
12. Question words; ordinal numbers. The house.
13. The –n, -on, -en, -ön ending (meaning on). Rooms and furniture.
14. Oral tests

Hungarian Language III.

Semester:	3rd	**Code:**	AOK-OAK603
Course type:	Practice	**Category:**	compulsory
Hours/week:	4	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Term Mark

week **topic**

1. General revision
2. Indefinite conjugation (past tense). Postpositions.
3. Usage of postpositions of place and time. Geography.
4. Revision 5

5. The –nál, nél, -hoz, -hez, -höz, -tól, -től endings.
6. Jobs, family.
7. Comparative and superlative forms of adjectives. Clothing, colours.
8. The possessive structure; the plural –k ending. Describing what somebody looks like.
9. Verbs
10. Definite conjugation (present tense).
11. Verbal prefixes.
12. Usage of verbal prefixes.
13. Revision 7
14. Oral tests

Hungarian Language IV.

Semester:	4th	**Code:**	AOK-OAK604
Course type:	Practice	**Category:**	compulsory
Hours/week:	4	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Preliminary Examination

week **topic**

1. General revision
2. Definite conjugation (past tense). Accusative case of personal pronouns.
3. Telling the date, the weather, the school year
4. Revision 8
5. Body parts, organs, bones
6. Symptoms
7. Health care workers, buildings and places
8. Medicaments
9. Expressions of time
10. Question words
11. Doctor's instruction
12. Parts of the medical history
13. Pain, at the doctor's, at the dentist's, at the pharmacy
14. Practising role-play
15. Practising role-play

Immunology

Semester:	4th	**Code:**	AOK-OAK061
Course type:	Lecture	**Category:**	compulsory
Hours/week:	2	**Department:**	Immunology
Credit:	2	**Form of Exam:**	Exam

topic

1. The structure and working principle of the immune system. Central and peripheral lymphoid organs. (Definition of antigen, epitope, hapten, pathogen)
2. Characteristics of innate immunity. The relationship between innate and adaptive immunity.
3. Complement system. Cell types and mediators involved in inflammation and acute phase response.
4. The structure of MHC molecules, polymorphism. Antigen presentation. Development of T and B cells.
5. Antigen recognition function of T lymphocytes. The T cell mediated immune response. T cell types, their effector functions.
6. B lymphocytes. B cell activation, antigen-dependent differentiation of B cells. The structure of antibodies, antibody-mediated effector functions.
7. TEST FOR RECOMMENDED GRADE (1. MTO)
8. Immune responses against extracellular pathogens. Immune responses against intracellular pathogens. Immunescape. Immunological memory. Vaccination.
9. Autoimmunity. Peripheral and central immune tolerance.
10. Types and characteristics of hypersensitivity reactions. Allergic reactions.
11. Transplantation, pregnancy immunology, immunodeficiency pathology.
12. 2. TEST FOR RECOMMENDED GRADE (2. MTO)
13. Tumor immunology. Immunotherapies and their role in tumor therapy.
14. Basic immunology methods. Monoclonal antibodies, Immunodiagnostics.

Introduction to Medical Chemistry

Semester:	1st	**Code:**	AOK-OAKV141/AOK-OAKV142
Course type:	Lecture/Practice	**Category:**	compulsory elective
Hours/week:	1/1	**Department:**	Medical Chemistry
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week	Lecture	Practice
1.	Review of course requirements. Summary of the program	Basic terms: symbols and formulas, chemical equations, stoichiometry, the mole concept, Avogadro's number, atomic and mass numbers, and isotopes.
2.	Structure of atoms. Quantum mechanical model of atoms, quantum numbers. Practicing quantum numbers and electron configurations.	The periodic table, the relationship between electron configuration and the periodic table. Periodic properties.
3.	Chemical bonds and intermolecular forces.	Geometry of molecules. Practicing structural formulas. The polarity of molecules.
4.	The most important monatomic and polyatomic ions: charges and nomenclature. Formula writing and nomenclature of salts. The most important acids and bases.	Practicing metathesis reactions involving precipitate or gas formation.
5.	Solutions. Types of solutions. Solubility, effects of temperature and pressure on solubility. Expressing composition of solutions.	Practicing calculations on the composition of solutions.
6.	Chemical equilibrium. Equilibrium constant. LeChatelier's principle.	Application of LeChatelier's principle.
7.	Calculating the pH of strong acid and base solutions.	Calculating the pH of weak acid and base solutions.

8.	Acid-base titration.	Acid-base titration problems.
9.	Buffers.	Buffer problems.
10.	Basic terms in thermodynamics.	Practicing redox reaction equations. The spontaneity of redox reactions.
11.	Voltaic cells. Types of electrodes.	Calculations involving the Nernst equation.
12.	General principles of organic chemistry. Classification of organic compounds, functional groups, isomerism.	Practicing nomenclature, structural formulas, and chemical reactions of alkanes, alkenes, and alkynes.
13.	Inductive and conjugative effects.	Structure and chemical reactions of aromatic hydrocarbons.
14.	Hydroxyl group-containing organic compounds: alcohols, phenols, and enols. Chemical reactions of these compounds.	Ethers and sulfur-containing organic compounds.

Introduction to Medical Informatics

Semester:	1st	**Code:**	AOK-OAKV481/AOK-OAKV482
Course type:	Lecture/Practice	**Category:**	compulsory elective
Hours/week:	1/2	**Department:**	Medical Physics
Credit:	3/-	**Form of Exam:**	Evaluation(5)/Signature

week	**Lecture**	**Practice**
1.	Informatics revolutionized medicine and medical research	General information, hardware and software environment of the practice, CooSpace, eduID, Office 365, MS Teams
2.	Computer architecture: from personal computers to supercomputers and smart devices	Smart telemedicine devices and applications in practice (data collection)
3.	Computer software, Operating Systems, viruses	Introduction to spreadsheets using MS Excel (data input, data validation, autofill, references)
4.	Medical image processing	Evaluation of medical data with spreadsheets (calculations, functions, basic statistics)
5.	Integrated hospital information systems (MedSol), standards, medical digital image networks	Evaluation of medical data with spreadsheets (advanced functions, charts, sorting, filtering)
6.	Computer networks, Internet	Evaluation of medical data with spreadsheets (regression, large tables, pivot table)
7.	Cloud computing and data security	1st practical test
8.	Basics of Artificial intelligence and Deep Learning	Medical data on the web. Creating online medical surveys and forms.
9.	Artificial intelligence in life sciences	How do we use AI in life sciences? (ChatGPT, Goole Colab)
10.	Data presentation	Creating scientific presentation (PowerPoint, Prezi, Mentimeter)
11.	Perspectives of telemedicine	Documents, formatting large documents (styles, table of contents, figures and captions, list of figures)

12.	Medical applications of 3D design and printing	Advanced document editing (header, footer, footnote, endnote, cross reference, references)
13.	3D bioprinting	2nd practical test
14.	Medical applications of virtual and augmented reality	MedSol demonstration

Introduction to Medicine

Semester:	1st	**Code:**	AOK-OAK041/AOK-OAK042
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/1	**Department:**	Behavioural Sciences
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week	**topic (lectures)**
1.	Introduction
2.	Modern concept of health and illness
3.	What influences health?
4.	Community diagnosis and descriptive epidemiology
5.	Analytic epidemiology, concept of risk
6.	Prevention, screening
7.	Health promotion, behavioral medicine, stress management
8.	History of Medicine I. Earliest medicine, antique times
9.	History of Medicine II. Medicine in middle ages, Renaissance, Enlightenment
10.	History of Medicine III. Science and technology in the 19th-20th centuries
11.	Medical Ethics I. Basic principles of bioethics
12.	Medical Ethics II. Medical profession and the Hippocratic oath
13.	Medical Ethics III. Ethics, morality and ethical theories

topic (practices)

* Introduction I-II.
* Health and illness I-II.
* What influences health? Stress and lifestyle I-II.
* Epidemiology I-II.
* Prevention and health promotion I-II.
* Basic principles and practice of medical ethics I-II.
* Consultation

Introduction to Psychology, Communication

Semester:	2nd	**Code:**	AOK-OAK131/AOK-OAK132
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1(total 7)/2(total 14)	**Department:**	Behavioural Sciences
Credit:	1/-	**Form of Exam:**	Evaluation(5)/Signature

week	**Lecture**	**Practice**
1.	Scope of psychology. Contemporary themes, perspectives of psychology	Levels and elements of the communication process
2.	Sensation, perception, top-down processes /Attention and memory	Factors that influence communication
3.	Intelligence, Memory	Verbal and nonverbal communication
4.	Personality theories I.	CLASS-model: setting up the context
5.	Personality theories II.	Situational exercises I.
6.	The psychology of social interactions	Situational exercises II.
7.	Motivation. Emotions /Attitudes and cognitive dissonance	Consultation

Latin Based Medical Terminology I.

Semester:	1st	**Code:**	AOK-OAK071
Course type:	Practice	**Category:**	compulsory
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Signature

week	**topic**
1.	General course description. Basic information about the typical issues of the language. Phonological aspects of the language, writing and pronunciation. The general features of the Latin noun (number, case and gender).
2.	Major rules of the declensions. The dictionary forms of the Latin nouns in all declensions. General features of different medical texts. General information about medical phrases containing Greek elements. Anatomical terminology: the body parts
3.	Latin words and Greek elements used parallel in medical terminology. Translation of possessive phrases with the usage of dictionary forms (the usage of sing. nom. and sing. gen.). Anatomical terminology: the skeletal system
4.	Typical endings of the dictionary forms and irregularities of the usages. Construction of possessive phrases in all declensions with multiple elements. Anatomical terminology: the muscular system
5.	Irregularities of the declensions. The typical endings of the third declension. Usage of the pluralis nominativus in all declensions. Greek elements of diseases.

6. Usage of the pluralis genitivus in all declensions. Translating and constructing possessive phrases in plural with multiple elements. The special usage of the third declension. Practising for the midterm test. Anatomical words.
7. Midterm test.
8. Basic information about the adjectives. Dictionary form and usage of the 3 ending adjectives. Translation and construction of adjective phrases with the usage of the agreement rule in the singular. Anatomical terminology: the arteries and veins
9. General information about the 2 ending adjectives. Irregularities of the 2 ending adjectives. Construction of phrases with 1 and 2 ending adjectives. Anatomical terminology: the respiratory system
10. The practice of adjective phrases and combining them with possessive structures. Translating and constructing adjective phrases in the plural.
11. Constructive complex phrases with the combination of adjective and possessive phrases.
12. Translational practices (diagnoses, processes, diseases and reports)
13. Exercise and summary. Overview of the trial test for the final.
14. Final exam

Latin Based Medical Terminology II.

Semester:	2nd	**Code:**	AOK-OAK072
Course type:	Practice	**Category:**	compulsory
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Signature

week **topic**

1. General course description. Repetition: Usage of the I-II and III. declension adjectives. Practice of the rule of agreement. Basic features of the Greek elements in Medical Latin and elements connecting to the abdominal organs and upper body. Anatomical terminology: the heart
2. Repetition: Constructing complex phrases with adjective and possessive phrases. Translation of basic diagnoses. Basic features of the Greek elements in Medical Latin. and elements connecting to genitals and general expressions. Anatomical terminology: the digestive system
3. General features of the accusative case. Usage of prepositions with accusative. Usage of the neutral rule of the Latin nouns.
4. Constructing complex phrases with prepositions, translating medical reports with prepositions with accusative. Greek and Latin elements about general clinical terms.
5. General features of the ablative case. Usage of prepositions with ablative. Different roots of the third declension, the appearance of the “i” root. Construction and translation of phrases combining ablatives and accusative case prepositions. Practice of Greek and Latin elements.
6. Exercise and summary. Completion and discussion of a sample test.
7. Midterm test.

8. General features of the Latin numerals. Practice of phrases with the usage of Latin ordinals and cardinals. Translation and construction of adjective phrases with the usage of the agreement rule in the singular. Anatomical terminology: the reproductive system
9. Basic information about the prescriptions. Construction of basic prescriptions and terms of basic materials. Anatomical terminology: the urinary system
10. Construction and translation of complex prescriptions. Typical abbreviations, pharmaceutical phrases, and clinical terms of prescriptions. Translation of different short prescriptions. Anatomical terminology: the endocrine system
11. Construction of complex prescriptions. Basic information about medical reports. Translation of medical reports and improvement of Latin reading skills.
12. Translational practices (diagnoses, processes, diseases, and reports)
13. Exercise and summary. Overview of the trial test for the final. Practice of the grammatical basics. Practice of the Greek and Latin elements of medical Latin.
14. Final exam.

Measurements in medical physics I.

Semester:	1st	**Code:**	AOK-OAK103
Course type:	Practice	**Category:**	compulsory
Hours/week:	1 (2 hrs/2 w)	**Department:**	Medical Physics
Credit:	1	**Form of Exam:**	Term mark

1. Occupational health and fire safety training
2. Anthropometric measurements. Fundamental aspects of measurements: derived quantities, measurement error
3. Sound as a mechanical wave
4. Optics of the eye
5. Blood pressure measurement principles and their application
6. Analysis of blood pressure data
7. Practical skills test

Measurements in medical physics II.

Semester:	2nd	**Code:**	AOK-OAK106
Course type:	Practice	**Category:**	compulsory
Hours/week:	1 (2 hrs/2 w)	**Department:**	Medical Physics
Credit:	1	**Form of Exam:**	Term mark

1. Occupational health and fire safety training
2. Electrocardiography
3. The physical principles of spectroscopy
4. Introduction to nuclear medicine
5. Measurements with ultrasound
6. Tomographic image reconstruction
7. Practical skills test

Medical Anthropology

Semester:	4th	**Code:**	AOK-OAK081
Course type:	Seminar	**Category:**	compulsory
Hours/week:	2 (14 hrs total)	**Department:**	Behavioural Sciences
Credit:	1	**Form of Exam:**	Evaluation(5)

week	**topic**
1.	Introduction to cultural and medical anthropology
2.	Cultural anthropology of anatomy and physiology (lay beliefs)
3.	Medical anthropology of stress and stress-related disease
4.	Medical anthropology of pain and nutrition
5.	Medical anthropology of sexuality and gynecology
6.	Cultural aspects of health care
7.	Medical anthropology of death and dying

Medical Chemistry I.

Semester:	1st	**Code:**	AOK-OAK111/AOK-OAK112
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/1	**Department:**	Medical Chemistry
Credit:	6/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	Basic terms. The mole concept. The basic structure of atoms. Electronic structure of atoms. Atomic theories. The periodic table. Explanation of periodic properties.	Important terms: atomic mass, molar mass, moles, chemical formulas, chemical reactions, stoichiometry.
2.	Chemical bonding. Octet rule. Ionic, covalent, and metallic bondings. Intermolecular forces: hydrogen bonding, van der Waals forces (dipole-dipole and London forces).	Atomic models, electronic configuration of atoms. The periodic table.
3.	Introduction to inorganic chemistry. Properties of the most important elements and their compounds. Biological importance and usage. Types of metathesis reactions: precipitation and gas formation, neutralization.	Chemical bonds and intermolecular forces.
4.	States of matter. The gaseous state: gas laws, The liquid state: properties of liquids, the dependence of phase changes on pressure and temperature. The solid-state: properties of solids, types of crystalline lattice. Homogenous and heterogeneous systems. Colloids.	Inorganic chemistry. Complexes. Summary of inorganic chemical reactions.
5.	Solutions. Types of solutions. The solution process. Ways of expressing concentration. Osmosis and its biological importance.	Solutions. Calculations involving the concentration of solutions.

6.	Chemical equilibrium. LeChatelier's principle. Equilibrium in electrolytes, pH, and pOH. Acid-base ionization equilibrium. Salts.	Chemical equilibrium. Application of LeChatelier's principle.
7.	Electrolytic dissociation, strong and weak electrolytes. Acid-base concepts. Acid-base titration. Buffers and their biological importance.	Acid-base concepts. The pH concept. pH calculations.
8.	Thermodynamics. Basic terms. First, second, and third laws of thermodynamics. Entropy and disorder. Change in Gibbs free energy and spontaneity of a reaction. Electrochemistry. Oxidation-reduction reactions.	Acid-base titration. Acid-base titration problems.
9.	Voltaic cells, types of electrodes. Glass electrodes, measurement of pH. Reaction kinetics. Rate, order, molecularity, and mechanism of reactions. Complex chemical reactions. Catalysis. Enzymes as biocatalysts.	Buffers. Calculations involving buffers.
10.	General principles of organic chemistry. Classification of organic compounds. Functional groups. Types of organic chemical reactions: substitution, addition, and elimination. Alkanes (paraffin hydrocarbons). Cycloalkanes.	A brief summary of thermodynamics. Electrochemistry. The spontaneity of redox reactions.
11.	Alkenes. Alkynes. Conjugated dienes, isoprene. Terpenes, vitamin A. The photochemistry of vision.	Voltaic cells. Calculations involving the Nernst equation. A brief summary of reaction kinetics.
12.	Aromatic hydrocarbons. Structure and stability of benzene and its derivatives. Chemical reactions of aromatic compounds.	Types of organic chemical reactions. Saturated and unsaturated hydrocarbons.
13.	Organic halogen compounds. Hydroxyl group-containing organic compounds: alcohols, enols, and phenols. Classification, nomenclature, and chemical properties of alcohols. Some important alcohols.	Inductive and conjugative effects in organic compounds. Aromatic hydrocarbons.
14.	Phenols. The acidity of phenols. Nomenclature and chemical reactions of phenols. Oxidation of phenols, quinones. Ethers. Sulfur-containing organic compounds: thioalcohols and thioethers.	Organic halogen compounds. Alcohols and phenols. Ethers and sulfur-containing organic compounds.

Medical Chemistry II.

Semester:	2nd	**Code:**	AOK-OAK113/AOK-OAK114
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/3	**Department:**	Medical Chemistry
Credit:	6/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice (seminar 1hr, practice 2hrs/w)**
1.	Classification and nomenclature of amines. Basicity of amines, salt formation. Reactions of amines. Biologically important amines and aminoalcohols. Amines as neurotransmitters. Classification and nomenclature of heterocyclic compounds. Three- and four-membered heterocycles. Five-membered heterocycles with one and two heteroatoms.	seminar: Review of organic chemical reactions practice: Review of requirements. Fire and safety precautions. The principle of photometry, Lambert-Beer law.

2.	Six-membered heterocycles with one heteroatom. Six-membered heterocycles with two heteroatoms. Polycyclic heterocyclic compounds.	seminar: Amines practice: Volumetric analysis. Using a pipette and a burette, measuring pH. Acid-base titration, titration curve.
3.	Oxo compounds. Structure of the carbonyl group. Chemical reactions of aldehydes and ketones. Important oxo compounds. Classification and nomenclature of carboxylic acids. Homologous series of carboxylic acids. Acidity, salt formation, and other chemical reactions.	seminar: Heterocyclic compounds practice: Graded practice
4.	Three-dimensional structure of molecules: constitution, configuration, and conformation. Optical isomerism. Enantiomers, racemates. Configuration: D-L and R-S systems. Molecules with more than one chiral center. Diastereomers.	seminar: Oxo compounds practice: Graded practice
5.	Dicarboxylic acids. Unsaturated and hydroxy carboxylic acids. Oxo acids, "ketone bodies". Derivatives of carbonic acid. Carboxylic acid derivatives: esters, thioesters, acyl halides, anhydrides, and amides. Acylation reaction, acylating agents.	seminar: Chirality, optical isomerism practice: Modeling of chirality
6.	Lipids. Triglycerides. Fatty acids. Saponification. Glycerophospholipids. The structure of biological membranes.	seminar: Carboxylic acids. Dicarboxylic acids. Substituted carboxylic acids practice: Graded practice
7.	Classification and nomenclature of amino acids. Proteinogenic amino acids. Amphoteric character: isoelectric points. Chemical properties. Peptides. Stereochemistry of the peptide bond. Biological importance. Naturally occurring peptides. Important peptide hormones, analogs, and peptide antibiotics.	seminar: Carboxylic acid derivatives. Lipids practice: Graded practice
8.	Proteins. Classification of proteins by structure and function. The three-dimensional structure of proteins. Protein folding. Denaturation of proteins. Biological importance of proteins.	seminar: Amino acids practice: Graded practice
9.	Classification of carbohydrates. Monosaccharides. Configuration, cyclic structures. Chemical properties of monosaccharides. Important monosaccharides.	seminar: Peptides and proteins practice: Graded practice
10.	Structure of disaccharides. Reducing and nonreducing disaccharides. Oligosaccharides. Polysaccharides.	seminar: Monosaccharides practice: Graded practice
11.	Steroids. Classification of steroids. Cholesterol. Vitamin D3. Bile acids and their detergent effect. Steroid hormones.	seminar: Di-, oligo- and polysaccharides practice: Graded practice
12.	Structure and properties of nucleosides and nucleotides. Nucleotide coenzymes. Nucleic acids: RNA and DNA. Biological importance of nucleic acids.	seminar: Nucleosides, nucleotides, and nucleic acids practice: Examination of some important functional groups
13.	Vitamins. Water-soluble vitamins and their coenzymes. Fat-soluble vitamins. Hypo- and hypervitaminosis. Alkaloids: definition, occurrence. The most important representatives.	seminar: Steroids practice: Make-up laboratory practice

14.	Antibiosis. Classification and the most important representatives of antibiotics. Porphin-ring-containing compounds. Heme, hemoglobin, myoglobin, and chlorophyll.	seminar: Vitamins practice: Make-up laboratory practice

Note: In the 3rd, 4th, 6th, 7th, 8th, 9th and 10-11th weeks of the semester students work in rotation and conduct the following graded practices:

- Bromatometric determination of ascorbic acid content of vitamin C powder
- Quantitative determination of cholesterol by enzymatic colorimetric method
- Complexometric determination of calcium ions
- Determination of Fe^{3+} with UV/VIS spectrophotometry
- Determination of acid dissociation constant and buffer capacity by titration
- Determination of concentration of monosaccharides by polarimetry
- Photometric determination of proteins

Medical Hungarian Language I.

Semester:	2nd	**Code:**	AOK-OASZV711
Course type:	Practice	**Category:**	elective
Hours/week:	1	**Department:**	Med. Comm. and Translation
Credit:	1	**Form of Exam:**	Term mark

week **topic**

Communication-centered revision and practice of topics learnt in general Hungarian lessons with minor extensions to specialize for medical communication:

* greetings,
* numbers,
* questions regarding personal data,
* adjectives describing physical condition,
* healthy food and drink,
* body parts, possessives, common complaints,
* directions inside a building (hospital).

Medical Physics I.

Semester:	1st	**Code:**	AOK-OAK101/OAK102
Course type:	Lecture/Seminar	**Category:**	compulsory
Hours/week:	1/1 (2 hrs/2 w each)	**Department:**	Medical Physics
Credit:	2/-	**Form of Exam:**	Exam/Signature

Medical physics I. lecture

Biomechanics. Muscle function. Deformations, elasticity, viscoelasticity. Biomechanics of muscle function: relationships between muscle length and tension; force, velocity and power in skeletal muscles. A mechanical model of skeletal muscles. Surface forces in biomaterials: surface tension, wall tension in hollow bodies.
Fundamentals of the senses: hearing. Reflexion and refraction of sound at boundaries between media; acoustic resistance; Doppler effect; sound level; subjective loudness. Frequency dependence of human hearing. The role and function of the outer, middle and inner ear.

Fundamentals of the senses: vision. Reduced eye model, accommodation, adaptation, molecular mechanisms of vision, colour vision. Vision defects; the limits of visual acuity.
Flow of fluids. Equation of continuity, Bernoulli's law. Laminar and turbulent flow; Reynolds number. Viscosity of fluids: Newton's law of friction, the viscosity of blood, Hagen–Poiseuille law.
Diffusion and other transport processes. Fick's laws. Transport across membranes. Osmosis: Starling equilibrium.
Thermodynamics. Heat balance of the human body. Basal metabolic rate. Newton's law of cooling.
Signal analysis. Analogue and digital signals. Digitisation. Shannon's sampling theorem. Aliasing. Spectral analysis: the Fourier transform.

Medical physics I. seminar
Biomechanics.
Oscillations and waves. Hearing
Optics. Vision.
Flow of fluids.
Thermodynamics.
Consultation.

Medical Physics II.

Semester:	2nd	**Code:**	AOK-OAK104/OAK105
Course type:	Lecture/Seminar	**Category:**	compulsory
Hours/week:	2/1 (2 hrs/1 w)	**Department:**	Medical Physics
Credit:	3/-	**Form of Exam:**	Exam/Signature

Medical physics II. lecture
- Electricity, magnetism and electromagnetism.
- Bioelectric phenomena.
- Quantum physical phenomena in life sciences.
- Spectroscopy and laboratory medicine
- Principles of lasers. Medical applications of lasers.
- Microscopy (optical-, scanning-, electron-). Mass spectrometry.
- X-rays: general properties, use in diagnostics. Absorption of X-radiation. Producing X-rays, interaction with living substances.
- Nuclear physics. Radioactivity. Nuclear radiation, dosimetry.
- Practical application of radioactive isotopes. Particle accelerators in medical practice.
- Medical imaging techniques: ultrasound, CT, MRI/NMR, PET, infrared diagnostics.
- Physical basis of therapeutic methods: laser-, light, radio- and heat therapy; therapeutic use of electricity.
- Molecular and cellular diagnostics: sedimentation, electrophoretic methods, flow cytometry

Medical physics II. seminar
- Electricity, magnetism.
- Bioelectricity.
- The electromagnetic spectrum. Spectroscopy. Lasers.
- X-rays.
- Nuclear physics; radioactivity.
- Consultation.

Medical physics remedial course

Semester:	2nd	**Code:**	AOK-OASZV551
Course type:	Seminar	**Category:**	elective
Hours/week:	1	**Department:**	Medical Physics
Credit:	1	**Form of Exam:**	Evaluation (5)

topics

1. Orientation
2. Sample examination test
3. Electricity, magnetism
4. Bioelectricity
5. Spectroscopy
6. Lasers
7. Microscopy
8. X-ray physics
9. Nuclear physics
10. Nuclear medicine
11. Imaging methods
12. Therapeutic methods
13. Sample examination test

Medical Physiology I.

Semester:	3rd	**Code:**	AOK-OAK091/AOK-OAK092
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	4/4	**Department:**	Physiology
Credit:	8/-	**Form of Exam:**	Exam/Signature

	Lecture	**Practice**
*	Membrane physiology: membrane transport, signalling systems, cellular electrophysiology	Introduction to Physiology labs Membrane electrophysiology
*	Nerve and muscle physiology: primary sensory neurons, autonomic nervous system, motor neurons, striated muscle and smooth muscle.	Electromyography (EMG)
*	Blood physiology: fluid compartments, blood plasma, erythropoesis and degradation of red blood cells, ABO and Rh blood groups	Blood tests: haematocrit, haemoglobin concentration, cell counts, ABO/Rh blood groups Blood tests: hemostasis
*	Respiratory physiology: ventilation, gas exchange, regulation	Human spirometry
*	Cardiovascular physiology: the cardiac cycle, cellular electrophysiology and ECG, hemodynamics, the microcirculation, autonomic and hormonal regulation of the systemic and local circulation.	Circulation: Cardiac cycle Circulation: ECG Circulation: Hemodynamics
*	Renal physiology	Renal clearance of test substances

Medical Physiology (Seminar) I.

Semester:	3rd	**Code:**	AOK-OAKV261
Course type:	Seminar	**Category:**	compulsory elective
Hours/week:	4	**Department:**	Physiology
Credit:	4	**Form of Exam:**	Evaluation(5)

description

The course serves to discuss the study material lectured on the Medical Physiology I. course, in an interactive small study group environment. In this semester, the discussed topics include nerve
and muscle physiology, blood, respiration, cardiovascular and renal function.

Medical Physiology II.

Semester:	4th	**Code:**	AOK-OAK093/AOK-OAK094
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	6/4	**Department:**	Physiology
Credit:	10/-	**Form of Exam:**	Comprehensive Exam/Signature

	Lecture	**Practice**
*	Physiology of the gastrointestinal tract	Urine tests.
*	Metabolism and nutrition.	Gastrointestinal tract: study of digestion and nutrition.
*	Endocrine systems: hypophysis, thyroid gland, adrenal gland endocrine pancreas	Endocrinology: Oral glucose tolerance test, pregnancy test
*	Integrative physiology: regulation of energy metabolism, osmoregulation, volume regulation, potassium, calcium, pH homeostasis, Thermoregulation.	pH regulation, evaluation of arterial blood gas
*	Sports physiology	Study of cardiovascular adaptation to physical exercise.
*	Reproductive physiology: sexual function, physiology of pregnancy, parturition, growth and development.	Study of human EEG, mini mental test
*	CNS physiology: introduction, the cerebral circulation	Study of the cerebral circulation
*	Sensory systems: somatosensory system, pain, vision, hearing, olfaction and taste:	Tests of somatosensory systems Test of hearing Tests of vision
*	Motor systems: spinal, brainstem, cortical integration of motor functions. The vestibular system. The role of the cerebellum and the basal ganglia in motor functions.	Study of human motor functions
*	Sleep/wake cycle, the EEG. Circadian rhythms.	Cognitive tests and study of sleep-wake cycling
*	Physiology of emotions, motivation, reward and punishment.	
*	Physiology of learning and memory. Physiology of speech	

Medical Physiology (Seminar) II.

Semester:	4th	**Code:**	AOK-OAKV262
Course type:	Seminar	**Category:**	compulsory elective
Hours/week:	4	**Department:**	Physiology
Credit:	4	**Form of Exam:**	Evaluation(5)

description

The course serves to discuss the study material lectured on the Medical Physiology II. course, in an interactive small study group environment. In this semester, the discussed topics include gastrointestinal physiology, metabolism and nutrition, thermoregulation, homeostasis of inorganic substances, sports physiology, reproductive physiology, special senses and the central nervous system.

Medical Sociology

Semester:	3rd	**Code:**	AOK-OAK121
Course type:	Seminar	**Category:**	compulsory
Hours/week:	2	**Department:**	Public Health
Credit:	2	**Form of Exam:**	Exam

week	topic
1.	Description of requirements. Sociology in the medical curriculum.
2.	How to study the society?
3.	Where sociology and medicine meets.
4.	Doctors as professionals. Becoming a doctor.
5.	Doctors and patients. Health experience.
6.	The society we live in.
7.	How does society affect our health?
8.	Sociopoly
9.	Poverty around us.
10.	Who is disabled? The individual or the society?
11.	The power of social stigma.
12.	Rule breakers.
13.	Our little family.
14.	Consultation.

Medical Statistics

Semester:	2nd	**Code:**	AOK-OAK107/AOK-OAK108
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Medical Physics
Credit:	1/2	**Form of Exam:**	Exam/Term Mark

Week	Lecture	Practice
1.	Basics of probability theory. The concept of probability, rules of probability calculus. Diagnostic tests and conditional probabilities.	Basics of probability theory. The concept of probability, rules of probability calculus. Diagnostic tests and conditional probabilities.
2.	Population, statistical sample. The distribution of categorical and continuous variables, the density function.	Population, statistical sample. The distribution of categorical and continuous variables, the density function.
3.	Density function, normal distribution. The normal distribution. Standardization, practical examples.	Density function, normal distribution. The normal distribution. Standardization, practical examples.
4.	Binomial distribution. Odds ratio	Binomial distribution. Odds ratio
5.	Statistical estimation, confidence interval. The standard error of mean. The use of Student's t-table	Statistical estimation, confidence interval. The standard error of mean. The use of Student's t-table
6.	Statistical inference, one-sample t-test. Significance test by confidence interval, t-statistics or p-value. Type I and II error, statistical power.	1st MTO.
7.	T-tests (one-sample, paired, Student and Welch two-sample t-test)	T-tests (one-sample, paired, Student and Welch two-sample t-test)
8.	Analysis of variance (principle of one-way ANOVA, F-test, pairwise comparisons)	Analysis of variance (principle of one-way ANOVA, F-test, pairwise comparisons)
9.	Correlation-regression analysis	Correlation-regression analysis
10.	The chi-squared test for independence (assumptions, Fisher exact test)	The chi-squared test for independence (assumptions, Fisher exact test)
11.	Measure of agreement; 2x2 tables in epidemiology (Cohen-Kappa, relative risk)	Measure of agreement; 2x2 tables in epidemiology (Cohen-Kappa, relative risk)
12.	Survival analysis (Kaplan-Meier product limit; log-rank test)	Survival analysis (Kaplan-Meier product limit; log-rank test)
13.	Nonparametric methods based on ranks (Wilcoxon-test, Mann-Whitney test, Kruskal-Wallis test)	2nd MTO
14.	Summary	Nonparametric methods; Summary

Molecural Medicine

Semester:	5th	**Code:**	AOK-OAKV451
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Cell Biology
Credit:	2	**Form of Exam:**	Evaluation(5)

topic

* Molecular genetic and cell biology methods in diagnosis and therapy.
* Diagnostic methods based on immunological techniques (RIA, ELISA, Western blot analysis, immunocytology, citotoxicity tests, etc.).
* Diagnostic methods beased on nucleic acid hybridization (Northern and Southern analysis, in situ hybidization, DNA chip technology, etc.).
* Diagnostic methods based on specific endonuclease activity (fragment length polymorphism, pedigree analysis, etc.).

* Gene sequencing and analysis, genomic and proteomic techniques. Cell and tissue culture methods.
* Antisense pharmacology. RNA interference/silencing. Small interfering RNAs. Molecular chaperons.
* Gene therapy, viral vectors, DNA-liposome complexes.
* Molecular markers in human disorders. Biomarkers for neurological and psychiatric disorders.
* Molecular interactions between pathogens and host.
* Stem cell therapy. Embryonal and adult stem cells. Induced pluripotent stem cells. Neuronal stem cells.
* In vitro differentiation of stem cells to the desired phenotype. Transfection of stem cells.
* Regulation of cell cycle and cell differentiation. Regulation of transcriptional and translational control of gene expression.
* Telomerase-directed molecular therapy.
* Immunotherapy. Antitumour immune responses.
* Bioinformatic and computer-assisted methods in diagnosis and therapy: functional genomics and proteomics.

Terminologie

Semester:	3rd	**Code:**	AOK-ONKV691
Course type:	Practice	**Category:**	elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	1	**Form of Exam:**	Signature

topic

1. Linguistic basics of medical terminology
2. The human body
3. The musculoskeletal system
4. Cardiovascular system: heart, blood circulation, cardiology, angiology
5. Blood, blood formation, hematology
6. Lymphatic and immune system
7. Respiratory system, respiratory system, thorax, pneumonology
8. Gastrointestinal system, digestive system, abdomen, gastroenterology
9. Endocrine system, hormonal system, endocrinology
10. Urinary organs, urology
11. Female genitalia, gynecology, obstetrics, neonatology
12. Male genitalia, andrology
13. Nervous system, neurology

14 Written exam

PRECLINICAL MODULE SYLLABUS

Advanced Surgical Skills

Semester:	5th, 7th, 9th	**Code:**	AOK-OAKV351/AOK-OAKV352
Course type:	Lecture/Practice	**Category:**	compulsory elective
Hours/week:	1/1	**Department:**	Institute of Surgical Research
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

Lecture	**Practice (6 x 2 hours)**
* Surgical asepsis and basic surgical techniques (recap)	Scrubbing. Basic knotting and suturing techniques. (2 hours) (Surgical theatre)
* Minor surgical procedures. Incisions, excisions, biopsies, local anaesthesia. Minor surgical procedures: Principles of ambulatory surgery, sterility, surgical instrumentation. Possibilities of incisions and excisions. Biopsy techniques, indications. Basics of local anaesthesia (anaesthetics, types of anaesthesia, complications).	The Minor Skin Procedures Local anesthesia. Ellipse excision of skin. Removal of encapsulated structures (cysts, tumors). Incision of abscesses. (2 hours) (Surgical theatre)
* Basics of abdominal surgery, incisions, laparotomy. Principles, and indications of laparotomy, risks and complications. Closure of laparotomy.	Advanced suturing techniques. Enterotomy. Intestinal and vessel anastomosis. (2 hours) (Surgical theatre)
* Advanced surgical techniques: enterotomy, bowel- and vessel anastomoses. Advanced surgical suturing techniques. Definition, characteristics, indications methods and possible complications of enterotomy. Indications and methods vessel anastomoses.	Minimally invasive surgery. (2 hours) (Surgical theatre)
* Advanced laparoscopic procedures. Types of laparoscopic surgery. Consequences of pneumoperitoneum (pathophysiological aspects, complications). LC appendectomy, cholecystectomy. Conicotomy, tracheostomy. Principles, indications of tracheostomy and conicotomy, risks and responsibility.	Laparoscopy: repetition practice. Basics of microsurgery: microsurgical instruments and basic microsurgical techniques (2 hours) (Surgical theatre, Microsurgery)
* Basics of thoracic and cardiac surgery. Historical background. Technical principles. Instruments. Pathophysiological aspects, complications. Basics of microsurgery. Indications, tools and suturing basics of microsurgery.	Advanced forms of surgical hemostasis and suturing techniques on a large animal model. Tracheostomy. Laparotomy. (4 hours) (Surgical theatre)

Biochemical Basics of Preventive Medicine

Semester:	4th	**Code:**	AOK-OAKV051
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Biochemistry
Credit:	2	**Form of Exam:**	Evaluation(5)

week	topic
1.	Introduction to preventive medicine (importance of nutrition, physical activity and stress in the development of „civilization diseases")
2.	Biochemistry of oxidative stress and its importance in physiological and pathological processes (formation of free radicals and their effects)
3.	Antioxidant mechanisms (vitamins, vitaminlike substances, enzymes and their cofactors involved in antioxidant protection)
4.	Stress adaptation of the heart (early and late preconditioning)
5.	General importance of balanced nutrition (macro- and micronutrients, alimentary fibers; additives)
6.	Pathobiochemistry of atherosclerosis and possibilities of prevention
7.	Role of oxidative stress in respiratory diseases
8.	Role of free radicals and antioxidant protective mechanisms in physiological and pathological brain function
9.	Background and prevention of obesity, metabolic syndrome and diabetes mellitus
10.	Altered requirements for nutrients in physiological and pathological conditions; diets (theory and practice)
11.	Sport biochemistry: general importance of physical activity (oxidative stress and role of antioxidants; changes in blood plasma parameters)
12.	Psychological stress, oxidative stress, and importance of stress management
13.	Biochemical basics of preventive medicine in the light of the most recent medical literature (interactive seminar and test)
14.	Biochemical basics of preventive medicine in the light of the most recent medical literature (interactive seminar and test)

Cardiac Electrophysiology as a Basic Property of Cardiac Function

Semester:	4th or 6th	**Code:**	AOK-OAKV581/OAKV582
Course type:	Lecture/Practice	**Category:**	compulsory elective
Hours/week:	1/1	**Department:**	Pharmacology
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week	topic
1.	Introduction.
2.	Basic principles of electrophysiology, the impulse propagation in the heart I.
3.	Basic principles of electrophysiology, the impulse propagation in the heart II.
4.	The action potential of myocytes and the ionic channels determining the action potential I.
5.	The action potential of myocytes and the ionic channels determining the action potential II.
6.	Methods and techniques in cardiac electrophysiology.
7.	Electro-mechanical coupling in the heart I.
8.	Genetic background of ion-channel disturbances in the heart.

9. Electro-mechanical coupling in the heart II.
10. The mechanism of developing cardiac arrhythmias
11. Electrophysiological changes after the disturbances in blood supply to the myocardium.
12. Experimental methods and clinical relevance to investigate cardiac arrhythmias.
13. Investigational techniques in cardiac cellular electrophysiology
14. Practical and consultation

Cerebral Blood Flow and Metabolism

Semester:	5th	**Code:**	AOK-OASZV301
Course type:	Lecture	**Category:**	elective
Hours/week:	2	**Department:**	Cell Biology
Credit:	2	**Form of Exam:**	Evaluation(5)

topic

* The blood-brain barrier
* The cerebral metabolism
* Regulation of cerebrovascular tone: endothelial mechanism
* Regulation of cerebrovascular tone: nervous innervation
* Regulation of cerebrovascular tone: cerebrovascular smooth muscle cells
* Regulation of cerebrovascular tone: neurovascular coupling
* Cerebral blood flow in the neonatal brain
* The impairment of cerebral blood flow: aging
* The impairment of cerebral blood flow: stroke
* Principles of clinical neuroimaging
* The impairment of cerebral blood flow: dementia, small vessel disease

Gerontology

Semester:	6th	**Code:**	AOK-OAKV321/OAKV322
Course type:	Lecture/Practice	**Category:**	compulsory elective
Hours/week:	1/1	**Department:**	Behavioural Sciences
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week **topic (Lecture/Practice)**

1. General principles of geriatric medicine
2. History taking with elderly patients
3. Physical examination
4. Mental status examination
5. Evaluation of functional capacity in him elderly
6. Laboratory examination

7. Progressive constriction of each organ systems
8. Intellectual impairment
9. Immobility
10. Iatrogenic drug reactions
11. Community of care
12. Quality of life and therapeutic objectives
13. Legal and ethical issues
14. Care of the dying patient

Foundations of Evidence Based Medicine

Semester:	8th or 10th	**Code:**	AOK-OAKV181
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Public Health
Credit:	2	**Form of Exam:**	Evaluation(5)

topic

* Introduction of the course. Study requirements.
* Evidence-based medicine/healthcare: concepts, steps in practicing EBM. Types of epidemiologic studies.
* Interventional studies, clinical trials (RCT).
* Asking structured questions (PICO), classification of clinical questions. The hierarchy of evidence.
* Translational medicine: from basic research to clinical practice.
* Search the evidence – theoretical and practical knowledge.
* Critical appraisal process – theoretical and practical knowledge.
* Grading quality of evidence and strength of recommendations, GRADE approach.
* Development of evidence-based practice guidelines.
* Implementation of practice guidelines in clinical practice and prevention.
* Health economic aspects of evidence-based medicine.
* Reporting scientific results – requirements of scientific papers, presentations.

Hungarian Language V.

Semester:	5th	**Code:**	AOK-OAK605
Course type:	Practice	**Category:**	compulsory
Hours/week:	3	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Term Mark

week	**topic**
1.	Revision
2-3.	Taking history, Doctor's questions
4.	Giving instructions and examination Week 5-13: Internal Medicine – Diseases
5-6.	Doctor-patient dialogues: high BP, diabetes, thyroid
5-6.	Field practice 1 (Internal Medicine)
7.	Doctor-patient dialogues: IBD

8. Doctor-patient dialogues: reflux, esophageal varices
7-8. Oral exam (history taking)
9-10. Doctor-patient dialogues: cirrhosis, pancreatitis, ascites, ulcerative cholitis, cholecystitis
9-10. Field practice 2 (Internal Medicine)
11. History taking: Crohn's disease
12. History taking: melena
13. Cardiology diseases
12-13. Field practice 3 (Internal Medicine)
14. Oral exam (history taking)

Hungarian Language VI.

Semester:	6th	**Code:**	AOK-OAK606
Course type:	Practice	**Category:**	compulsory
Hours/week:	3	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Term Mark

week	**topic**
1-2.	**Revision** (*Cardiology*)
3-13.	Surgery: Doctor-patient dialogues and cases
3-5.	**General Surgery:** *appendicitis, colon cancer, gall stones*
5.	Field practice 1 (General Surgery Department)
6-9.	**Vascular Surgery:** *arterial stenosis, grafts*
8.	Field practice 2 (Vascular Surgery Department)
10-11.	Oral exam (history taking)
10-13.	**Thoracic Surgery:** *lung tumor, empyema, lobectomy*
12.	Field practice 3 (Thoracic Surgery Department)
14.	Oral exam (case summary)

Internal Medicine I.

Semester:	6th	**Code:**	AOK-OAK161/AOK-OAK162
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	4/2	**Department:**	Internal Medicine
Credit:	4/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	Anatomical and structural abnormalities of the esopahgus. Approach of esophageal symptoms.	Problem oriented evaluation of the symptoms of patients with esophageal disorders
1.	Gastroesophageal Reflux Disease (GERD). Barrett's oesophagus, esophageal malignancies.	Endoscopic appearance of the esophagus in health and disease. Radiological evaluation of esophageal disorders.

2.	Other oesphageal disorders (motility and functional disorders, EOE)	Testing of the esophageal function in patients with suspected esophageal disorders (esophageal manometry, pH-impedance monitoring, provocation tests)
2.	Functional and motility disorders of the stomach	Symptom oriented approach of gastroduodenal disorders.
3.	Gastroduodenal ulcer disease (H.pylori, NSAID)	Clinical presentation of gastroduodenal ulcer disease.
3.	Gastric malignancies	Clinical presentation of gastric cancer
4.	Chronic hepatitis	Clinical presentation of hepatitis
4.	Cirrhosis of the liver. Hepatic malignancies. Other liver diseases	Clinical presentation of liver cirrhosis and liver cancer
5.	Diseases of the gallbladder and the biliary tract	Clinical presentation of gallstone disease
5.	Acute pancreatitis. Nutritional support	Clinical presentation acute pancreatitis and its complications.
6.	Chronic pancreatitis, maldigestion	Clinical presentation of chronic pancreatitis and its complications
6.	Pancreatic cancer	Clinical presentation of pancreatic cancer.
7.	Malabsorption syndrome, food allergy, NCGS	Clinical presentation malabsorption.
7.	Irritable Bowel Syndrome (IBS)	Symptom oriented approach of intestinal disorders.
8.	Crohn's disease	Clinical presentation of Crohn’s disease and its complications
8.	Ulcerative colitis	Clinical presentation ulcerative colitis and its extraintestinal manifestations.
9.	Other colitises	Clinical presentation of microscopic colitis.
9.	Tumors of the large intestine	Clinical presentation colon cancer
10.	Colonic diverticular disease, Anorectal dysfunction	Clinical presentation colonic diverticular disease and anorectal dysfunction
10.	Gastrointestinal manifestations of systemic diseases	Clinical presentation patients with systemic disorders and gastrointestinal manifestations.
11.	Gastrointestinal bleeding	Clinical presentation upper and lower gastrointestinal bleeding. Definition of obscure bleeding.
11.	Diagnostic endoscopy	Observation of a diagnostic endoscopic procedure
12.	Therapeutic endoscopy	Observation of a therapeutic endoscopic procedure
12.	Endosonography	Observation of an endosonographic procedure.
13.	Translational gastroenterology	Observation of a small bowel capsule endoscopic procedure
14.	Consultation	Consultation

Introduction to Toxicology

Semester:	6th-10th	**Code:**	AOK-OASZV221
Course type:	Lecture	**Category:**	elective
Hours/week:	2	**Department:**	Medical Chemistry
Credit:	2	**Form of Exam:**	Evaluation(5)

week	topic
1.	INTRODUCTION. Historical aspects. Types of toxic substances. Types of exposure. Dose–response relationship.
2.	DISPOSITION OF TOXIC COMPOUNDS. Absorption of toxic compounds. Distribution of toxic compounds. Excretion of toxic compounds.
3.	METABOLISM OF FOREIGN COMPOUNDS. Factors affecting toxic responses.
4.	TYPES OF EXPOSURE AND RESPONSE. Types of exposure. Route of exposure. Types of toxic response. Biomarkers.
5.	DRUGS AS TOXIC SUBSTANCES. Paracetamol. Aspirin (salicylate). Hydralazine. Halothane. Debrisoquine. Thalidomide. Drug interactions. Altered responsiveness: glucose-6-phosphate dehydrogenase deficiency.
6.	INDUSTRIAL TOXICOLOGY. Industrial chemicals. Means of exposure. Toxic effects. Vinyl chloride. Cadmium. Aromatic amines. Asbestos. Legislation.
7.	FOOD ADDITIVES AND CONTAMINANTS. Tartrazine. Saccharin. Food contaminants.
8.	PESTICIDES. DDT. Organophosphorus compounds. Paraquat. Fluoroacetate.
9.	ENVIRONMENTAL POLLUTANTS. Air pollution. Particulates. Acid rain. Lead pollution. Water pollution. Arsenic. Food chains. Endocrine disruptors. Mercury and methylmercury.
10.	NATURAL PRODUCTS. Plant toxins. Animal toxins. Fungal toxins. Microbial toxins.
11.	HOUSEHOLD PRODUCTS. Carbon monoxide. Antifreeze: ethylene glycol. Cyanide. Alcohol. Glue sniffing and solvent abuse. Antidotes and the treatment of poisoning.
12.	TOXICITY TESTING AND RISK ASSESSMENT. Evaluation of toxicity. Acute toxicity tests. Sub-acute toxicity tests. Chronic toxicity tests. Testing in vitro. Risk assessment and interpretation of toxicological data.

Training of Learning

Semester:	1-6th	**Code:**	AOK-OASZV811
Course type:	Seminar	**Category:**	elective
Hours/week:	2	**Department:**	Behavioural Sciences
Credit:	2	**Form of Exam:**	Term Mark (5)

week	topic (lectures)
1	The concept, process and contexts of learning.
2	Effective learning models.

3 The self-regulation ability (processes of self-regulation; setting goals, planning, monitoring, self-monitoring).

4 The self-regulated learning model (self-regulatory processes in learning; effective time management; personalized learning plan).

5 Non-effective learning strategies (procrastination, perfectionism; self-handicapping; defensive pessimism).

6 Effective learning strategies (cognitive strategies - effective note-taking, mind mapping; mnemonics - reinforcement of retention, recall).

7 Emotional and motivational strategies and their application (coping strategies; motivational strategies; resolving negative emotions in learning; coping with stress).

8 Managing group learning tasks.

Mathematical and Statistical Modelling in Medicine

Semester:	4th or 6th	**Code:**	AOK-OASZV291/OASZV292
Course type:	Lecture/Practice	**Category:**	elective
Hours/week:	1/1	**Department:**	Medical Physics
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week	**Lecture**	**Practice**
1.	Elementary mathematical functions (The logarithm and exponential functions). Definitions and graphs. Geometric meaning of the derivative and definite integral.	Elementary mathematical functions (The logarithm and exponential functions). Definitions and graphs. Geometric meaning of the derivative and definite integral.
2.	Discrete (Poisson–) and continuous (exponential, Weibull–, normal and t-) distributions	Discrete (Poisson–) and continuous (exponential, Weibull–, normal and t-) distributions
3.	Ratios, proportions and rates in epidemiology	Ratios, proportions and rates in epidemiology
4.	Conditional probability, testing proportions: the relative difference	Conditional probability, testing proportions: the relative difference
5.	One- and Two-way ANOVA	One- and Two-way ANOVA
6.	Repeated measurement ANOVA	Repeated measurement ANOVA
7.	Nonparametric ANOVA. Kruskall-Wallis, Jonckheere-Terpstra and Nemenyi tests	Nonparametric ANOVA. Kruskall-Wallis, Jonckheere-Terpstra and Nemenyi tests
8.	Linear-by-linear method. Kendall tau statistic. Logrank test	Linear-by-linear method. Kendall tau statistic. Logrank test
9.	Logistic and Poisson regression models (ROC curves)	Logistic and Poisson regression models (ROC curves)
10.	Harmonic trend and seasonality (Edward and Walter-Elwood test, logistic regression and Cosinor method)	Harmonic trend and seasonality (Edward and Walter-Elwood test, logistic regression and Cosinor method)
11.	Area under curve methods	Area under curve methods

Microbiology I.

Semester:	5th	**Code:**	AOK-OAK211/AOK-OAK212
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/2	**Department:**	Medical Microbiology
Credit:	5/-	**Form of Exam:**	Exam/Signature

week	**Lecture (1hr/week)**	**Lecture (2hr/week)**	**Practice**
1.	Introduction to microbiology. Characterization and classification of bacteria.	Structure of bacteria. Growth and nutrition of bacteria.	Introduction to microbiology. Laboratory safety. Aseptic techniques. Wet-mount preparation.
2.	*Staphylococcus aureus*	Microbial genetics.	Preparation of bacterial smear. Simple and Gram staining.
3.	Shigella, Proteus	*Neisseria* genus, Coagulase negative staphylococci	Ziehl-Neelsen, Schaffer-Fulton and Neisser staining.
4.	Human pathogenic salmonellae	*Streptococcus* genus	Culture media. Preparation of blood agar.
5.	*E. coli*. *Klebsiella* genus	*Vibrio cholerae*, Campylobacter, Helicobacter	Colony morphology. Handling bacterial cultures (inoculation and plating). Methods for counting bacteria.
6.	*Brucella, Francisella*	*Listeria, Yersinia*	Biochemical diagnostic tests. Anaerobic cultivation
7.	*Burkholderia, Pseudomonas*	*Chlamydia, Mycoplasma*	*Staphylococcus, Streptococcus* AST
8.	*Corynebacterium*	*Bordetella, Haemophilus, Nocardia*	*Neisseria, E. coli, Klebsiella*
9.	*Bacillus, Legionella*	*Treponema, Leptospira, Borrelia*	*Yersinia, Samonella, Shigella, Proteus*
10.	Anaerobic bacteria I.	Anaerobic bacteria II.	*Pseudomonas, Campylobacter, Helicobacter*
11.	*Mycobacterium, Nocardia*	*Rickettsia, Coxiella, Bartonella*	*Mycobacterium, Haemophilus, Bacillus*
12.	Antimicrobial chemotherapy I.	Antimicrobial chemotherapy II.	Antimicrobial susceptibility testing
13.	HACEK	Pathogenesis of bacterial infection	*Corynebacterium, Bordetella, Listeria*
12.	Non-linear regression models (Michaelis–Menten kinetics, RIA, Scatchard plots)	Non-linear regression models (Michaelis–Menten kinetics, RIA, Scatchard plots)	
13.	Internal and external quality control methods	Internal and external quality control methods	
14.	Decision and cost-effectiveness analysis with probabilities.	Exam	

Microbiology II.

Semester:	6th	**Code:**	AOK-OAK213/AOK-OAK214
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/2	**Department:**	Medical Microbiology
Credit:	5/-	**Form of Exam:**	Comprehensive Exam/Signature

week	Lecture (1hr/week)	Lecture (2hr/week)	Practice
1.	General characteristics of viruses, viral replication, antiviral therapy	Structure of viruses and classification	Laboratory safety. Methods of sterilization. Sterility testing.
2.	Herpesviridae I	Herpesviridae II	Differential diagnosis of bacteria
3.	Arenaviridae, Filoviridae	Orthomyxoviridae, Paramyxoviridae	Serological reactions I. (Precipitation, CFT)
4.	Parvoviridae, Bunyaviridae	Papilloma and polyoma viruses	Serological reactions II. Agglutination. Laboratory methods for detection of cellular immunity.
5.	Poxviridae, Rhabdoviridae	Togaviridae, adenoviridae	Clinical Microbiology
6.	Retroviridae I	HIV	Virology I. Cultivation of viruses. Signs of viral replication.
7.	Retroviridae II	Slow" viruses.	Virology II. Quantitation of viruses
8.	Flaviviridae	Hepatitis viruses	
9.	Picornaviridae	Oncoviruses	Virology III. Virus serology (HAG, ELISA, IF) Neutralization test
10.	Reoviridae, Astroviridae, Coronaviridae	Immune response against pathogens.	Bacteriophages
11.	Human pathogenic fungi I.	Human pathogenic fungi II.	Molecular methods in the diagnosis of infectious diseases.
12.	Human pathogenic protozoa I.	Human pathogenic protozoa II.	Mycology
13.	Human pathogenic helminths I.	Human pathogenic helminths II.	Parasitology
14.	Immunization I.	Immunization II.	

Microsurgery

Semester: 5th-10th
Code: AOK-OAKV431/AOK-OAKV432
Course type: Lecture/Practice
Category: compulsory elective
Hours/week: 8/20 hrs total
Department: Institute of Surgical Research
Credit: 2/-
Form of Exam: Evaluation(5)/Signature

Lecture

* Introduction. Materials, instruments and equipment in microsurgery
* Oral- and maxillofacial surgical aspects of microsurgery

Practice

Introductory exercises, hand-eye coordination. Appropriate posture at the operating microscope and the adjustment of the microscope. Movement coordination of the hands: interlacing threads under microscope (1 hr)

Tying basic microsurgical knots under macroscopic and microscopic conditions (2 hrs)

* Traumatological aspects of microsurgery	Stitching and tying knots with microsurgical instruments on rubber gloves (2 x 3 hrs)
* Clinical indications for microsurgery, anastomosis techniques	Suture of tubes (2 x 3 hrs)
	Vessel anastomosis *ex vivo* (3 hrs)
	Practical exam (2 hrs)

Molecular Developmental Biology

Semester:	4th or 6th	**Code:**	OK-OAKV441
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Biochemistry
Credit:	2	**Form of Exam:**	Evaluation(5)

topic

* The molecular developmental aspect of medical biology
* General mechanisms of embryonic development
* The formation of body pattern (polarity, segment polarity, body domains) and appendix development
* Seminary (lectures 1-3)
* Cell movement and body formation in vertebrates, neural development
* The formation of the epiderm and its renewal from stem cells. Sensory epithel, airway system, gut and liver development.
* Seminary (lectures 5,6)
* Blood vesels and endothel cells, multipotent stem cells, blood cell renewal. Fibroblasts and their transformations. The movement and muscle types. The origin a nd potency of stem cells.
* Seminary (lecture 8)
* The cancer as a microevolutionary process.
* Tumor formation nand its molecular background
* Seminary (lecture 10,11)
* The molecular biology of nutrition and life span
* Seminary (lecture 13)

Molecular Medicine

Semester:	5th	**Code:**	AOK-OAKV451
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Cell Biology
Credit:	2	**Form of Exam:**	Evaluation(5)

week	**topic**
1.	Introduction
2.	Immunological methods
3.	Apoptosis

4. Intracellular signalling and gene expression
5. RNA based therapy
6. Gene therapies
7. Next generation sequencing
8. Tumor diagnostics
9. Imaging methods in molecular medicine
10. Somatic stem cells
11. Pluripotent stem cells
12. 2D and 3D stem cell based models
13. Stem cell based regeneration medicine
14. Test

Pathology I.

Semester:	5th	**Code:**	AOK-OAK221/AOK-OAK222
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/3	**Department:**	Pathology
Credit:	6/-	**Form of Exam:**	Exam/Signature

week	Lecture	Seminar (2x1hr/week)	Practice (2hrs/week)
1.	Introduction of pathology. Trombosis. Embolism.	Postmortem changes. The completion of the death examination certificate. The regulations regarding autopsies.	Autopsy / Histology
2.	Vascular pathology 1.	Calcification. Oedema, hyperaemia, congestion. Hemorrhage.	Autopsy / Histology
3.	Vascular pathology 2.	Necrosis. Cellular adaptations of growth and differentiation.	Autopsy / Histology
4.	Pathology of the heart 1.	Pathology and morfology of acute inflammation.	Autopsy / Histology
5.	Pathology of the heart 2.	Pathology and morfology of chronic inflammation.	Autopsy / Histology
6.	Phatology of the lung 1.	Immunopathology, autoimmun diseases, organ rejection.	Autopsy / Histology
7.	Pathology of the lung 2.	Pathology of tumors 1.	Autopsy / Histology
8.	Pathology of the upper airways. Pathology of the oral cavity and salivary glands.	Carcinogenesis.	Autopsy / Histology
9.	Pathology of the kidney and the urinary tract. 1.	Pathology of tumors 2. Clinical aspects of neoplasia.	Autopsy / Histology
10.	Pathology of the kidney and the urinary tract. 2.	Shock. DIC.	Autopsy / Histology
11.	Pathology of the male genital organs.	Tissue repair and wound healing. Diabetes.	Autopsy / Histology

12.	Pathology of the female genital organs.	Pathology of smoking, alcoholism and obesity.	Autopsy / Histology
13.	Pathology of the breast.	Pathology of prolonged bed rest. Pathology of aging. Amyloidosis.	Autopsy / Histology
14.	Pathology of gestation. Perinatal pathology.	Consultation/Repetition	Autopsy / Histology

Pathology II.

Semester:	6th	**Code:**	AOK-OAK223/AOK-OAK224
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/4	**Department:**	Pathology
Credit:	6/-	**Form of Exam:**	Comprehensive Exam/Signature

week	**Lecture**	**Seminar (1hr/week)**	**Organdemonstration (1hr/week)**	**Practice (2hrs/week)**
1.	Pathology of the esophagus and stomach.	Pathological diagnotics (Filling out the request form, initation of the surgical samples, resection surfaces)	External examination, Signs of death	Autopsy / Histology
2.	Pathology of the small intestine and pancreas.	Pathological diagnostics (types of histological samples)	Cardiovascular system	Autopsy / Histology
3.	Pathology of the large intestine 1.	Pathological diagnostics (the content of the patology report)	Kidney	Autopsy / Histology
4.	Pathology of the large intestine 2.	Patological diagnostics (cytology: fine needle aspiration cytology and body cavity cytology)	GI tract (esophagus, stomach, small and large intestine)	Autopsy / Histology
5.	Pathology of the liver.	Patological diagnostics (cytology: gynecological cytology)	GI tract (liver, bile ducts, pancreas, peritoneum)	Autopsy / Histology
6.	Pathology of the gall bladder and bile ducts. Pathology of the peritoneum.	Patological diagnostics (special stains, immunhistochemistry)	MTO I.	Autopsy / Histology
7.	Pathology of the endocrine glands.	Patological diagnostics (PCR, FISH)	Lung	Autopsy / Histology
8.	Haematopathology 1.	Pathological diagnostics (NGS)	General tumorpathology	Autopsy / Histology
9.	Haematopathology 2.	Oncological aspects of the prognostic and predictive markers	Haematopathology	Autopsy / Histology
10.	Pathology of the skin.	Pathological aspects of diagnostic imaging.	Female genital organs, breast	Autopsy / Histology
11.	Neuropathology 1.	Role of patology in the multidisciplinary team.	Male genital organs	Autopsy / Histology
12.	Neuropathology 2.Pathology in practice: case presentation	Pathology in practice: case presentation	MTO II.	Autopsy / Histology

13.	Pathology of the eye, ear canal, inner ear, middle ear. Pathology in practice: case presentation	Pathology in practice: case presentation	Neuropathology	Autopsy / Histology
14.	Pathology of the bones and soft tissues.	Consultation	Autopsy pre-exam (optional)	Autopsy / Histology

Pathophysiological Aspects of Laboratory Medicine

Semester:	6th	**Code:**	AOK-OAKV411
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Laboratory Medicine
Credit:	2	**Form of Exam:**	Evaluation(5)

week	topic
1.	Introduction to laboratory medicine Preanalytical processes, test requesting, sampling, common preanalytical errors Analytical processes: quality control, traceability of measurements, precision, biological variation, reference range, point of care testing. Postanalytical processes: interpretation of results, sensitivity, specificity, predictive values, pre- and post-test probability, clinically significant change values, alarming or critical values, evidence based laboratory medicine
2.	Visit at the Department of Laboratory Medicine
3.	POCT: basics, blood-gas examination, acid-base balance disorders
4.	Laboratory diagnosis of coagulation disorders: basic coagulation tests, monitoring of anticoagulant therapy, testing for congenital and acquired thrombophilias
5.	Laboratory diagnosis of sodium and water metabolism Hypo- and hypernatremia: causes and differential diagnosis, SIADH, diabetes insipidus, laboratory diagnosis of oedema. Effect of diuretics on sodium and water balance, disorders of osmolar regulation Disorders of potassium metabolism Hypo-, and hyperkalemia: causes and differential diagnosis, diagnostic algorithms and treatment
6.	Laboratory diagnosis of liver diseases
7.	Hematology
8.	Inflammatory parameters in laboratory practice
9.	Laboratory diagnosis of disorders of lipid metabolism Primary, and secondary hyperlipidemia, clinical significance of cholesterol, TG, HDL-C, LDL-C, classification of hyperlipidemias. Risks of atherosclerosis: clinical significance of ApoA, ApoB, Lp (a), homocystein, fibrinogen.
10.	Laboratory diagnosis and monitoring of diabetes mellitus
11.	Laboratory diagnosis of renal diseases Laboratory tests of glomerular and tubular functions, laboratory diagnosis of proteinuria, acute and chronic renal failure, nephrosis syndrome, differentiation of distal and proximal renal tubular acidosis
12.	Laboratory diagnosis of myocardial infarction and acut coronary syndrome Classical markers: CK, LDH isoenzymes, myoglobin. New markers: Troponin I, Troponin T, significance of point of care testing, diagnostic algorithms.

Pathophysiology I.

Semester:	5th	**Code:**	AOK-OAK201/AOK-OAK202
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/2	**Department:**	Pathophysiology
Credit:	5/-	**Form of Exam:**	Exam/Signature

week	Lecture	Practice/Seminar
1.	**Inflammation I.:** Basic concepts and types of inflammation, inflammatory cells and mediators. Pathomechanism of acute inflammation. *Lecturer: Zoltán Rakonczay, Substitute lecturer: Krisztina Csabafi*	Requirements and safety instructions. Review of basic physiology and ECG.
2.	**Inflammation II.:** Pathomechanism of chronic inflammation, local and systemic symptoms/signs of inflammation, basic concepts of pain. *Lecturer: Zoltán Rakonczay, Substitute lecturer: Krisztina Csabafi*	**Inflammation I.:** Basic concepts and types of inflammation, inflammatory cells and mediators. Pathomechanism of acute inflammation. ***In the practice room: Registration and analysis of ECG.***
3.	**Immunology I.:** Hypersensitivity reactions and autoimmune diseases. *Lecturer: Zoltán Rakonczay, Substitute lecturer: Miklós Jászberényi*	***Classroom switched between groups!*** **Inflammation II.:** Pathomechanism of chronic inflammation, local and systemic symptoms/signs of inflammation, basic concepts of pain. **ECG: Premature beats.**
4.	**Immunology II.:** Autoimmune diseases, primary and secondary immunodeficiencies. *Lecturer: Zoltán Rakonczay, Substitute lecturer: Miklós Jászberényi*	***Classroom switched between groups!*** **Immunology I.:** Hypersensitivity reactions and autoimmune diseases. **ECG: Arrhythmias of the sinus node.**
5.	**Endocrinology I.:** Disorders of the hypothalamus, pituitary and thyroid gland. *Lecturer: Miklós Jászberényi, Substitute lecturer: Zsolt Bagosi*	**Immunology II.:** Primary and secondary immunodeficiencies. **ECG: Preexcitation syndromes.**
6.	**Endocrinology II.:** Disorders of the parathyroid gland, adrenal cortex and medulla, male and female gonads. *Lecturer: Miklós Jászberényi, Substitute lecturer: Zsolt Bagosi*	**Endocrinology I.:** Disorders of the hypothalamus, pituitary and thyroid gland. **ECG: Atrial and AV nodal arrhythmias.**
7.	**Nutritional Diseases:** Malnutrition syndromes, starvation, vitamin deficiency, obesity. *Lecturer: Krisztina Csabafi, Substitute lecturer: Miklós Jászberényi*	**Endocrinology II.:** Disorders of the parathyroid gland, adrenal cortex and medulla, male and female gonads. **ECG: Ventricular arrhythmias.**
8.	**Diabetes mellitus, metabolic syndrome, hypoglycemia**: Pathophysiology of diabetes mellitus, prediabetes, concept of insulin resistance and metabolic syndrome, hypoglycemia. *Lecturer: Krisztina Csabafi, Substitute lecturer: Miklós Jászberényi*	**Nutritional Diseases:** Malnutrition syndromes, starvation, vitamin deficiency, obesity. **ECG: AV blocks**.
9.	**Hyperlipidemias, atherosclerosis:** Primary and secondary hyperlipidemias, pathophysiology of atherosclerosis. *Lecturer: Zsolt Bagosi, Substitute lecturer: Júlia Szakács*	**Diabetes mellitus, metabolic syndrome, hypoglycemia**: Pathophysiology of diabetes mellitus, prediabetes, concept of insulin resistance and metabolic syndrome, hypoglycemia. **ECG: Bundle branch blocks.**
10.	**Cardiovascular system I.:** Angina pectoris, acute coronary syndrome, myocardial infarction, chronic heart diseases. *Lecturer: Márta Sárközy, Substitute lecturer: Julia Szakács*	**Cardiovascular system I.:** Congenital and acquired heart defects, pathophysiology of compensated and decompensated heart failure. **ECG: Myocardial infarction.**
11.	**Cardiovascular system II.:** Congenital and acquired heart defects. *Lecturer: Márta Sárközy, Substitute lecturer: Zsolt Bagosi*	**Cardiovascular system II.:** Volume expansion (hypervolemia), primary and secondary hypertension. **ECG: Hypertrophies**.

12.	**Cardiovascular system III.:** Primary and secondary hypertension, volume expansion (hypervolemia), pathophysiology of compensated and decompensated heart failure. *Lecturer: Zsolt Bagosi, Substitute lecturer: Júlia Szakács*	**Hyperlipidemias, atherosclerosis:** Primary and secondary hyperlipidemias, pathophysiology of atherosclerosis. **Electrolyte abnormalities and pulmonary embolism.**
13.	**Cardiovascular system IV.:** Volume depletion (hypovolemia, hypotension), syncope, circulatory shock. *Lecturer: Júlia Szakács, Substitute lecturer: Zsolt Bagosi*	**Cardiovascular system III.:** Angina pectoris, acute coronary syndrome, myocardial infarction, chronic heart diseases. **ECG: review**.
14.	**Thermoregulation:** Definition, types, phases and consequences of hypothermia and hyperthermia. *Lecturer: Júlia Szakács, Substitute lecturer: Zsolt Bagosi*	**Cardiovascular system IV.:** Volume depletion (hypovolemia, hypotension), syncope, circulatory shock.

Pathophysiology II.

Semester:	6th	**Code:**	AOK-OAK203/AOK-OAK204
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/2	**Department:**	Pathophysiology
Credit:	5/-	**Form of Exam:**	Comprehensive Exam/Signature

week	**Lecture**	**Practice/Seminar**
1.	**Pulmonary diseases I:** Spirometry, obstructive pulmonary diseases: obstructive sleep apnea, COPD, asthma bronchiale, cystic fibrosis. *Lecturer: Zsolt Bagosi, Substitute lecturer: Júlia Szakács*	Safety regulation. **Thermoregulation. ECG review.**
2.	**Pulmonary diseases II:** Restrictive pulmonary diseases**:** pneumothorax and pleural effusion, acute pulmonary edema and embolism, pulmonary hypertension, cor pulmonale, respiratory failure. *Lecturer: Zsolt Bagosi, Substitute lecturer: Júlia Szakács*	**Pulmonary diseases I:** Dyspneas, general characterization of obstructive and restrictive pulmonary diseases, asthma bronchiale, COPD, cystic fibrosis.
3.	**Kidney diseases I.:** Disturbances of glomerular and tubular functions, nephrolithiasis. *Lecturer: Krisztina Csabafi, Substitute lecturer: Miklós Jászberényi*	**Pulmonary diseases II:** Restrictive pulmonary diseases**:** chest wall and pleura disorders, pulmonary edema, pulmonary hypertension, pulmonary embolism, hypoxia, respiratory failure.
4.	**Kidney diseases II.:** Acute and chronic renal failure. *Lecturer: Krisztina Csabafi, Substitute lecturer: Miklós Jászberényi*	**Kidney diseases I.:** Disturbances of glomerular and tubular functions, nephrolithiasis.
5.	**Disturbances of acid-base metabolism:** Respiratory acidosis and alkalosis, metabolic acidosis and alkalosis. *Lecturer: Márta Sárközy, Substitute lecturer: Krisztina Csabafi*	**Kidney diseases II.:** Acute and chronic renal failure.
6.	**Electrolyte disturbances:** Salt-water balance disorders, pathophysiology of potassium, calcium, phosphate, iron, and copper. *Lecturer: Márta Sárközy, Substitute lecturer: Miklós Jászberényi*	**Disturbances of acid-base metabolism:** Respiratory acidosis and alkalosis, metabolic acidosis and alkalosis.

7.	**CNS disorders I.:** Circulatory diseases of the CNS, cerebral edema, headache, epilepsy. *Lecturer: Miklós Jászberényi, Substitute lecturer: Krisztina Csabafi*	**Electrolyte disturbances:** Salt-water balance disorders, pathophysiology of potassium, calcium, phosphate, iron, and copper.
8.	**CNS disorders II.:** Multiple sclerosis, neurodegenerative diseases: Alzheimer's, Parkinson's and Huntington's disease, motoneuron diseases, myasthenia gravis. *Lecturer: Miklós Jászberényi, Substitute lecturer: Krisztina Csabafi*	**CNS disorders I.:** Circulatory diseases of the CNS, cerebral edema, headache, epilepsy.
9.	SPRING BREAK	SPRING BREAK
10.	**Gastrointestinal diseases I.:** Nausea, vomiting, dysphagia, GERD, abnormalities of gastric juice secretion, peptic ulcer, acute and chronic pancreatitis. *Lecturer: Professor Zoltán Rakonczay, Substitute lecturer: Zsolt Bagosi*	**CNS disorders II.:** Multiple sclerosis, neurodegenerative diseases: Alzheimer's, Parkinson's and Huntington's disease, motoneuron diseases, myasthenia gravis.
11.	**Gastrointestinal diseases II.:** Diseases of absorption**,** diarrhea, constipation: Irritable bowel syndrome, intestinal obstruction. *Lecturer: Professor Zoltán Rakonczay, Substitute lecturer: Zsolt Bagosi*	**Gastrointestinal diseases I.:** Nausea, vomiting, dysphagia, GERD, abnormalities of gastric juice secretion, peptic ulcer, acute and chronic pancreatitis.
12.	**Diseases of liver and biliary tract:** Liver dysfunction, diseases of bilirubin metabolism: jaundice, hepatic cirrhosis, liver failure, alcoholic, immune and genetic liver diseases, cholelithiasis. *Lecturer: Professor Zoltán Rakonczay, Substitute lecturer: Júlia Szakács*	**Gastrointestinal diseases II.:** Diseases of absorption**,** diarrhea, constipation: Irritable bowel syndrome, intestinal obstruction.
13.	**Pathophysiology of leukocytes II.:** Leucopenia, proliferative diseases: reactive and malignant diseases (leukemias, lymphomas), qualitative disturbances of leukocytes. *Lecturer: Krisztina Csabafi, Substitute lecturer: Júlia Szakács*	**Diseases of liver and biliary tract:** Liver dysfunction, diseases of bilirubin metabolism: jaundice, hepatic cirrhosis, liver failure, alcoholic, immune and genetic liver diseases, cholelithiasis.
14.	**Red blood cell disorders:** Anemias - ineffective erythropoesis, blood loss, hemolysis. *Lecturer: Júlia Szakács, Substitute lecturer: Krisztina Csabafi*	**Pathophysiology of leukocytes II.:** Leucopenia, proliferative diseases: reactive and malignant diseases (leukemias, lymphomas), qualitative disturbances of leukocytes.
15.	**Hemostasis:** Bleeding disorders (platelet, vascular, clotting factor disturbances), thrombosis. *Lecturer: Júlia Szakács, Substitute lecturer: Krisztina Csabafi*	**Red blood cell disorders:** Anemias - ineffective erythropoesis, blood loss, hemolysis.

Pathophysiology of Sepsis at the Bedside

Semester:	5th	**Code:**	AOK-OAKV071
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	1	**Department:**	Anesthesiology
Credit:	1	**Form of Exam:**	Evaluation(5)

topic

* Sepsis: a problem what existed, exists and will exist
* Is there any infection? - the role of biomarkers in the diagnosis of sepsis

* Heart, PICCO, hemostasis
* Failure of the respiratory system
* Antibiotics - a double edge sword
* Abdominal sepsis
* Test

Pharmacology and pharmacotherapy I.

Semester:	6th	**Code:**	AOK-OAK191/AOK-OAK192
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/2	**Department:**	Pharmacology
Credit:	5/-	**Form of Exam:**	Exam/Signature

week	Lecture	Practice
1.	Introduction to pharmacology. Drug-receptor interaction I. Drug-receptor interaction II.	Requirements.
2.	Passage across membranes. Absorption. Distribution of drugs.	Drug-receptor interaction.
3.	Elimination of drugs. Drug interactions.	Pharmacokinetics I.
4.	Individual drug response. Dependence. Development of new drugs. Prelinical and clinical investigations.	Pharmacokinetics II. Drug interactions. Dependence.
5.	Cholinomimetics. Cholinolytic drugs.	MTO I.: General pharmacology. Introduction to ANS.
6.	Sympathomimetic drugs. Sympatholytic drugs.	Drugs of parasympathetic nervous system.
7.	Antihistamines. Expectorans, antitussives.	Sympathomimetic drugs.
8.	Local anaesthetics. Smooth muscle relaxants.	Sympatholytics. Expectorans, antitussives.
9.	Glucocorticoids. Treatment of asthma bronchiale.	MTO II.: ANS, expectorants, antitussives, local anaesthetics and antihistamines.
10.	Non-steroidal antiinflammatory drugs I. Non-steroidal antiinflammatory drugs II.	Smooth muscle relaxants.
11.	Peripheral muscle relaxants. Antiviral drugs.	Glucocorticoids. Antiasthmatics.
12.	Antibacterial drugs I.: Introduction. Cell wall synthesis inhibitors. Antibacterial drugs II.: Protein synthesis inhibitors.	NSAIDs. Peripheral muscle relaxants.
13.	Antibacterial drugs III.: Sulfonamides, kinolones. Antifungal drugs.	Antiviral drugs. Antibacterial drugs.
14.	The basis of antihelmintic therapy. Ectoparasites. Treatment of mycobacterium and protozoon infections.	MTO III.: SAIDs, NSAIDs, antiasthmatics, smooth muscle relaxants, antiviral drugs, peripheral muscle relaxants and antibacterial drugs. Antifungal and antiparasitic drugs

Surgical Propedeutics

Semester:	6th	**Code:**	AOK-OAK231/ OAK232
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Surgery
Credit:	4/-	**Form of Exam:**	Examination/signature

week	**Lecture**	**Practice/Seminar**
1.	The origins and development of surgery	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
2.	Observation and documentation of surgical patients	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
3.	The significance and role of asepsis and antisepsis in the surgical practice	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
4.	Bleeding and haemostasis, surgical devices	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
5.	Types of wounds and the basic principles of wound healing	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
6.	**National Holiday**	
7.	Basic wounds treatment, classical and modern wound dressing materials	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
8.	Perioperative complications	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
9.	Surgical infections. Modern antibiotic treatment	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
10.	Enteral and parenteral feeding	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
11.	The role of endoscopy in surgery	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
12.	Significance of radiology in surgical diagnostics	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
13.	Surgical oncology	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.
14.	Surgical immunology	Demonstration,investigation of surgical patients. Consultation about the topics of lectures.

CLINICAL MODULE SYLLABUS

Advanced Biostatistics

Semester:	8th or 10th	**Code:**	AOK-OAKV171
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Medical Physics
Credit:	2	**Form of Exam:**	Evaluation(5)

Week	Lecture (1 hr/week)	Practice (1 hr/week)
1.	Introduction: summary of basic biostatistics	The main concepts of logistics. Statistical computer systems.
2.	Nonparametric methods for two or more dependent or independent data	The choice of the appropriate statistical method and it's evaluation
3.	Multiple linear regression, linear models	Data sets with several independent variables (i.e., risk factors)
4.	Comparison of several independent group-means: two-way ANOVA	Data sets and problems when two-way ANOVA is appropriate
5.	Two-way ANOVA with interaction	Understanding the concept of interaction
6.	Comparison of several related group-means: repeated measures ANOVA	Data sets and problems for repeated measurements ANOVA
7.	Summary	MTO 1.: solving two problems, main results and interpretation
8.	Diagnostic tests. Specificity, sensitivity, PPV, NPV, Accuracy	Calculation of the diagnostic measures
9.	Biostatistical methods in epidemiology, relative risk, odds ratio	Calculation of RR and OR by hand and by computer. Comparison of methods.
10.	Logistic regression: equation, use, meaning	Simple logistic regression problem solving by computer program
11.	Logistic regression: accuracy ROC curve	Examples from the medical literature: the use of logistic regression to find risk factors of an illness.
12.	Multivariate methods: discriminant analysis	Examples from the medical literature: decision making by computer
13.	Multivariate methods: cluster analysis	Examples from the medical literature: classification of cases or variables
14.	Summary	MTO 2.: solving two simple problems, main results and interpretation.

Anaesthesiology and Intensive Therapy I.

Semester:	9th	**Code:**	AOK-OAK243/ AOK-OAK244
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/1	**Department:**	Anaesthesiology & Int. Ther.
Credit:	1/-	**Form of Exam:**	Evaluation/Signature

week	topic
1.	Introducing anaesthesiology and intensive therapy
2.	Applied physiology –I. Circulation, circulation management

3. Applied physiology – I. Breathing, oxygen therapy
4. Applied pharmacology
   I. Clinical pharmacology
   II. Anaesthesiological pharmacology
5. Anaesthesia machine, breathing systems
6. Assessment of perioperative risks, preoperative preparation
7. General anaesthesia, anaesthetics
8. Regional anaesthesia, local anesthetics
9. Airway management
10. Monitoring during anaesthesia
11. Postoperative patient care, complications, PACU
12. Postoperative acute and chronic analgesia
13. Test

Anaesthesiology and Intensive Therapy II.

Semester:	10th	**Code:**	AOK-OAK245/AOK-OAK246
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/1	**Department:**	Anaesthesiology & Int. Ther.
Credit:	2/-	**Form of Exam:**	Exam/Signature

topics

* Fluid therapy, fluid resuscitation, electrolytes
* Blood gas analysis, diabetic ketoacidosis
* Acute respiratory failure, mechanical ventilation
* Acute cardiovascular diseases
* Intoxication, blood purification
* Clinical nutrition, pancreatitis, liver failure
* ALS, BLS, postresuscitation care
* Infection and infection control
* Catastrophic central nervous system disorders
* Sepsis, septic shock

Basic Biostatistics

Semester:	7th or 9th	**Code:**	AOK-OAKV161
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Medical Physics
Credit:	2	**Form of Exam:**	Evaluation(5)

Week	Lecture (1 hr/week)	Practice (1 hr/week)
1.	Data definition, types of data, displaying data. Sample characteristics.	Bar chart, histogram. Calculation of the mean and standard deviation.

2.	Probability, random variables and their types, distributions.	Calculation of descriptive statistics. The use of a computer program.
3.	Binomial, Poisson, uniform and normal distribution and their properties.	The use of statistical tables – standard normal distribution.
4.	Statistical estimation, confidence intervals.	Calculation of the confidence interval for a population mean. The use of the t-table.
5.	Testing hypotheses, significance. One-sample t-test.	Practice of one-sample t-test using experimental data.
6.	Paired and Independent samples t-tests.	Practice of t-tests using experimental data. The meaning of significance, p-value.
7.	Errors in hypothesis tests	MTO 1.
8.	Comparing the mean of several groups: one-way analysis of variance.	Independent t-tests and one-way ANOVA. Multiple comparisons.
9.	Relationship between continuous variables, correlation, linear regression.	Scatterplot, trend-line in EXCEL. http://www.ruf.rice.edu/~lane/stat_sim/reg_by_eye
10.	Relationship between categorical variables: the chi-square test for independence	Evaluation of a 2x2 table by hand calculation and by computer
11.	The use of 2x2 tables in diagnostic tests. The chi-square-test for goodness of fit.	Calculation of sensitivity, specificity, positive and negative predictive value.
12.	Nonparametric methods.	Statistical tests on ranks.
13.	Summary	MTO 2.
14.	Examples from the literature	Practical questions of applied biostatistics.

Basics of Self-Knowledge in Professional Orientation

Semester:	7th	**Code:**	AOK-OASZV751
Course type:	Practice	**Category:**	elective
Hours/week:	12 hrs total	**Department:**	Behavioural Sciences
Credit:	1	**Form of Exam:**	Term Mark

week	**topic (2 hrs for 6 weeks)**
1.	Conditions for proper and successful career choice, the role of self-knowledge in the development of professional identity
2.	Mapping own preferences and priorities and self-reflection on them
3.	Self-reflection through situations
4.	Own values and the role of personal attachment in specialization choice
5.	A personal narrative with a focus on professional choice
6.	Summary of experiences, recapitulative self-reflection

week	**topic**
1.	Introduction
2.	Basics of physics
3.	The anatomy of ear
4.	The physics of sounds
5.	Hearing tests, screening
6.	Subjective audiometry
7.	Objective audiometry

8. Vestibular tests
9. Hearing aids
10. Middle-ear Implants
11. Cochlear implantation
12. Rehabilitation
13. Case studies
14 Practice

Cardiac Electrophysiology as a Basic Property of Cardiac Function

Semester:	8th or 10th	**Code:**	AOK-OAKV581/OAKV582
Course type:	Lecture/Practice	**Category:**	compulsory elective
Hours/week:	1/1	**Department:**	Pharmacology
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week	**topic of Lecture and Practice**
1.	Introduction.
2.	Basic principles of electrophysiology, the impulse propagation in the heart I.
3.	Basic principles of electrophysiology, the impulse propagation in the heart II.
4.	The action potential of myocytes and the ionic channels determining the action potential I.
5.	The action potential of myocytes and the ionic channels determining the action potential II.
6.	Methods and techniques in cardiac electrophysiology.
7.	Electro-mechanical coupling in the heart I.
8.	Genetic background of ion-channel disturbances in the heart.
9.	Electro-mechanical coupling in the heart II.
10.	The mechanism of developing cardiac arrhythmias
11.	Electrophysiological changes after the disturbances in blood supply to the myocardium.
12.	Experimental methods and clinical relevance to investigate cardiac arrhythmias.
13.	Investigational techniques in cardiac cellular electrophysiology
14.	Practical and consultation

Cerebrovascular diseases of the central nervous system (stroke, aneurysm, angioma) and their neurosurgical treatment options (surgery, intervention, conservative therapy)

Semester:	9th	**Code:**	AOK-OASZV801
Course type:	Lecture	**Category:**	elective
Hours/week:	14 hrs total	**Department:**	Neurosurgery
Credit:	1	**Form of Exam:**	Evaluation(5)

	topics
*	Anatomy of the cerebral vascular system, variation of vascular system, physiology of cerebral blood circulation and their clinical implications.

* Cerebrovascular disease/pathologiesl
* Surgical interventions of ruptured and silent cerebral aneurysm.
* Neuorinterventional treatment of ruptured and silent cerebral aneurysm.
* Acut treatment of ischemic stroke (imaging techniques, thrombolysis, indication of mechanical thrombectomy
* Mechanical thromectomy (history, indications, methods)
* Ischemic stroke, stroke prevention (surgical treatment of carotid artery stenosis), surgical thrombectomy
* Endovascular stroke prevention (endovascular treatment of carotid stenosis)
* Surgical treatment of arteriovenous malformations (AVM).
* Radiotherapy of AVM.
* The role of neurointervention in the treatment of AVM.
* Surgical treatment of arteriovenous malformations (AVM).
* Tumor embolisation, drug administration by using superselective catheter, hormone level determination, embolization of subdural hematoma
* Arterial approches neurointervention

Child and Adolescent Psychiatry, Mentalhygiene

Semester:	8th or 10th	**Code:**	AOK-OAKV331
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Child Psychiatry
Credit:	2	**Form of Exam:**	Evaluation(5)

week	**topic**
1.	Introduction to child and adolescent psychiatry
2.	Assessment, diagnosis and formulation in child psychiatry
3.	Psychological assessment
4.	Neurodevelopmental disorders I: Intellectual disability and specific learning disorders
5.	Neurodevelopmental disorders II: Attention deficit-Hyperactivity disorder, Tic disorder, Tourette disorder
6.	Neurodevelopmental disorders III: Communication disorders, Pervasive developmental disorder
7.	Anxiety disorders I (Separation anxiety, Specific phobia, Social anxiety disorder, GAD)
8.	Anxiety disorders II (Agoraphobia, Panic disorder, Selective mutism, OCD, PTSD, BDD)
9.	Mood disorders (Depressive disorder, Bipolar disorder), Suicidal behavior, Non-suicidal self-injury
10.	Schizophrenia spectrum disorders
11.	Disruptive, impulse control and conduct disorders
12.	Eating disorders (Anorexia nervosa, Bulimia nervosa)
13.	Elimination disorders (Enuresis, encopresis)
14.	Psychoactive substance use and addictive disorder

Clinical Immunology

Semester:	10th	**Code:**	AOK-OAKV381/AOK-KA491
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Dermatology
Credit:	2	**Form of Exam:**	Evaluation(5)

week	**topic**
1.	The structure and the functions of the immune system. The biological significance of the self recognition.
2.	Methods for clinical immunological investigations.
3.	Immune-mediated tissue damage. The role of cytokines.
4.	Immunology of allergic diseases.
5.	Autoimmunity - Health and disease. The autoimmune diseases.
6.	Genetics of immune diseases.
7.	Connective tissue disorders and joint diseases.
8.	Organ specific autoimmune diseases.
9.	Immundeficiencies. The immunology of HIV infection.
10.	Tumor immunology.
11.	Neuroimmunology.
12.	Immunomodulation.

Clinical Neonatology

Semester:	9th, 10th	**Code:**	AOK-OASZV791
Course type:	Seminar	**Category:**	elective
Hours/week:	2 hrs/ every 2nd week	**Department:**	Pediatrics
Credit:	1	**Form of Exam:**	Evaluation(5)

	topics
1.	Limit of viability in 2021. Where is the threshold?
2.	State-of-the-art neonatal respiratory support. Is mechanical ventilation an evil act?
3.	Neonatal chronic lung disease. Can it be ever prevented?
4.	Necrotising enterocolitis in babies. Why did fifty years of research not deliver therapies that work?
5.	Neonatal sepsis: can we minimise risk and avoid medicalisation of the newborn period at the same time?
6.	How to break bad news to parents in neonatology?
7.	Multidisciplinary decision making in neonatology: how to work together with Obstetricians and Surgeons?
8.	The golden first hour of life – Why is it so important?

9. Unique challenges in the care of the extremely low birth weight infant – How can we improve their care?
10. Genetic abnormalities of the newborn - diagnosis, management and ethical considerations.
11. Resuscitation of the newborn – simulation
12. Case based discussions

Clinical Oncology

Semester:	8th	**Code:**	AOK-OAK351
Course type:	Lecture	**Category:**	compulsory
Hours/week:	2	**Department:**	Oncotherapy
Credit:	2	**Form of Exam:**	Exam

topic

* Carcinogenesis, cancer etiology, epidemiology; Tumor prevention; The importance of pathology and diagnostic imaging in oncology; Cancer staging; ; Therapy response.
* Chemotherapy; Endocrine therapy; Molecular targeted therapy and immune therapy.
* Basic terms, the forms and physical effects of ionozing radiation; Radiotherapy equipments. Chemical and biological effects of ionizing radiation; the aims, effects and side effects of radiotherapy; Irradiation techniques, fractionation and schedule. Teletherapy/brachyterapy
* Breast cancer
  Breast cancer cases
* Emergencies in oncology
  Head and neck cancers; Oesophagus cancer
* Gynaecological cancers
  Gynecological cancer caeses
* Hepatobiliar and pancreatic cancers
  Colorectal and anal cancers
* Supportive, palliative therapy, Hospice,
  Lung Cancers
* Complex therapy of urological tumours
* Soft tissue tumors Brain and childhood malignancies
  Skin tumours, Multidisciplinary team-work

Dermatology

Semester:	9th or 10th	**Code:**	AOK-OAK281/AOK-OAK282
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/3	**Department:**	Dermatology
Credit:	4/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	Introduction. The anatomy and physiology of the skin. Types of skin lesions.	Examination of patients with dermatological diseases. Case presentations.
2.	Bacterial diseases with cutan involvement. Dermatoses caused by parasites.	Primary and secondary lesions. Case presentations.

3.	Fungal diseases with cutaneous involvement. Viral diseases.	Special tools and techniques in Dermatology (Wood-lights, diascopy, dermatoscopy) Case presentations.
4.	Urticaria and Contact dermatitis. Drug allergy.	Special tests in Dermatology I.In vitro and in vivo (skin) tests in allergic disorders. Case presentations.
5.	Sexually transmitted diseases I. Syphilis, HIV; Sexually transmitted diseases II. Gonorrhoea, non-gonorrheal urethritis, condyloma acuminatum, herpes genitalis.	Special tests in Dermatology II. Diagnosis of infectious diseases. Case presentations.
6.	Autoimmune blistering diseases. Atopic dermatitis.	Special tests in Dermatology. Diagnosis and treatment of STD. Case presentations.
7.	Epidermal tumors: praecancerosis, in situ carcinoma, non-melanoma skin cancer. Acne and rosacea.	Special tests in Dermatology III. Diagnosis of autoimmune diseases. Case presentations.
8.	Pigmented nevi. Melanoma malignum.	Skin biopsy, histological examinations in Dermatology. Case presentations.
9.	Benign epithelial and connective tissue tumors. Cutan lymphoma, Kaposi sarcoma, dermatofibrosarcoma protuberans, Merkel cell carcinoma.	Topical therapy in Dermatology. Case presentations.
10.	Papulosquamosus skin diseases I: Psoriasis. Papulosquamosus skin diseases II: Lichen ruber planus, pityriasis rubra pilaris.	Physical therapies in Dermatology I. Surgical excision, currettage, electrodessication, cryotherapy, radiotherapy. Case presentations.
11.	Lupus erythematosus and its variants. Scleroderma, Dermatomyositis, Alopecia.	Physical therapies in Dermatology II. Phototherapy, lasertherapy. Case presentations.
12.	Chronic wound. Thermally injured skin.	Physical therapies of venous and lymphatic insufficienties. Case presentations.
13.	Vasculitis.	Systemic therapy in Dermatology. Case presentations.
14.	Local, systemic therapy. Phototherapy in dermatology.	Case presentations and discussions.

Doctor-Patient Communication

Semester:	7th or 8th	**Code:**	AOK-OAK401
Course type:	Seminar	**Category:**	compulsory
Hours/week:	2	**Department:**	Behavioural Sciences
Credit:	-	**Form of Exam:**	Signature

The aim of the subject:

* Students attain the skills needed for doctor-patient consultation and for selecting from the appropriate consultation models.
* By the end of the course students will be aware of the importance of doctor-patient communication and its critical points.

* They should acquire the ethical principles of doctor-patient communication and they should be able to integrate them into their consultation behaviour. Students should know the ethical and communication methods of commitment to providing medical information.
* They should be able to carry out a 10-minute doctor-patient consultation, and afterwards to analyse and evaluate their performance from the video recording at a group meeting. They should be able to elaborate a medical case.

Electrophysiology: ion channels and ion transport mechanisms in the regulation of cell functions

Semester:	9th	**Code:**	AOK-OAKV251/AOK-OAKV252
Course type:	Lecture/Practice	**Category:**	compulsory elective
Hours/week:	2/6 hrs total	**Department:**	Pharmacology
Credit:	2	**Form of Exam:**	Evaluation(5)/Signature

week **Topic:**

1. Basic principles of electrophysiology
2. Regulation of pancreatic excretory function by ion channels
3. Electrophysiology of the brain I.
4. Electrophysiology of the brain II.
5. Molecular structures of ion channels I.
6. Molecular structures of ion channels II.
7. Ion transport mechanisms of blood-brain barrier
8. Modulation of ion channels by changing the lipid composition of the cell membrane
9. Experimental modification of ion channels: transgenic animal models
10. Diversity of potassium channel functions
11. Electric function of skeletal muscle; ionic mechanisms
12. Differences in cardiac atrial and ventricular ion channels
13. Ion channels in the regulation of smooth muscle tone
14. Discussion.

English and Hungarian Terminology of Doctor–Patient Communication

Semester:	7th or 8th	**Code:**	AOK-OASZV181
Course type:	Practice	**Category:**	elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Evaluation (5)

week **Topic:**

1. Introduction, placement test (for research purposes not part of the evaluation) for both groups.
2. Basic vocabulary: names of body parts, common diseases, fields of specialty, specialists, medical documents in Hungarian and in English.
3. Taking history ("SOCRATES") relevant expressions with special regard to ways of introduction, greetings in Hungarian and in English. Revision of Hungarian question words.
4. Complaints of the patient. Vocabulary related to signs, symptoms especially pain. Revision of related adjectives in Hungarian and in English.
5. Polite forms of conversation, signposting, eliciting information in Hungarian and in English. Cultural differences in the way of asking questions.
6. Vocabulary of previous diseases – past medical history, names of surgical interventions. Revision of the past tense in Hungarian.

7. Vocabulary of family history (familial relationships, hereditary diseases, common diseases in Hungarian and in English). Revision of the possessive case.
8. Vocabulary of social history. Intercultural differences in doctor-patient conversation. Revision of Hungarian conjugation. Common suffixes in medical English.
9. Vocabulary of referrals. Explaining examinations, results – explaining causal relationship. Future tenses in Hungarian and in English.
10. Terminology of physical examinations. Giving instructions in both languages. Imperative case and its alternative („tessék + főnévi igenév"). Linguistic devices for being polite in both languages.
11. Names of medications – related terminology. Instructions about dosing (mikor, hányszor, mennyit, meddig) in both languages. Terminology of allergies. Linguistic devices for expressing possibility.
12. Discussing the diagnosis with the patient and related terminology. Lay vs. medical terms. Linguistic methods for emphasis. Revision of conditionals in both languages.
13. Special communication situations: bad news, aggressive patients. Communication with the help of interpreters. Linguistic devices for expressing empathy. ways of arguing for and against.
14. Assessing the semester. Output test. Oral presentation: role-playing a doctor-patient (33.3% of the final grade).

Ethics in Medicine

Semester:	8th	**Code:**	AOK-OAK411/AOK-OAK412
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1 (for 7 weeks)/ 2 (for 10 weeks)	**Department:**	Behavioural Sciences
Credit:	-/2	**Form of Exam:**	Signature/Term Mark

week	**Lecture (1hr for 7 weeks)**	**Practice (2hrs for 10 weeks)**
1.	Introduction to Bioethics - A Case Based Approach (Ethical Theories; Bioethical Principles, Doctor-Patient Relationship)	Introduction to Medical Ethics
2.	Informed Consent and the Hungarian and International Patient Rights	Basic Principles of Bioethics (Non-maleficence, Beneficence, Justice, Autonomy) – Case based approach
3.	Ethics of Human Reproduction I. (Contraception, Childbirth)	Informed Consent and Ethics of Share-Decision-Making
4.	Ethics of Human Reproduction II. – (Abortion, Assisted Human Reproduction, Genetic Engineering)	Hungarian and International Patient Rights
5.	Ethical issues in Biomedical Research – Review of International Ethical Standards	Reproductive Ethics I. – Contraception and Childbirth
6.	Ethics of Tissue and Organ Donation	Reproductive Ethics II. – Abortion, Assisted Human Reproduction, Genetic Engineering
7.	Ethical Issues at the End of Life (Palliative Medicine; Euthanasia, Hospice Care)	Ethical Aspects of Biomedical Research – Animal Experiments and Research on Human Subjects
8.	-	Ethical Issues of Tissue and Organ Transplantation
9.	-	Ethics of End-of-Life Decisions – Main Types of Euthanasia
10.	**-**	Ethics of End-of-Life Decisions – Palliative Medicine and Hospice

Family Medicine

Semester:	8th	**Code:**	AOK-OAK611
Course type:	Lecture	**Category:**	compulsory
Hours/week:	2	**Department:**	Family Medicine
Credit:	2	**Form of Exam:**	Exam

1. Introduction. Definition of family medicine (WONCA), types of general practice.
2. Practice management. International outlook to the world
3. Family medicine team, internal and external relations. Community of practice. Home care. Role of APN. Role of social worker.
4. Prevention and screening in the family practice
5. Emergency in family practice. Specificities of the on-call system.
6. Common infectiosus diseases in family practice. Importance of immunisation in PC
7. Palliative care and approach. Hospice. Pain relief options. Home care.
8. Point of care ultrasound (POCUS) and point of care testing (POCT) diagnostics in family practice
9. Telemedicine possibilities and importance in family practice. Artificial intelligence in primary care
10. Paediatrics in primary care
11. Challenges of family medicine in a multicultural environment. Peculiarities of rural practice
12. Mental illness (mood disorders, crisis, alcoholism, burnout). Role of the health psychologist.
13. Forensic aspects of family medicine
14. Consultation

Forensic Medicine I.

Semester:	9th	**Code:**	AOK-OAK331/AOK-OAK332
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Forensic Medicine
Credit:	3/-	**Form of Exam:**	Exam/ Signature

	Lecture (2hrs/every 2nd week)	**Practice**
1.	Introduction to criminal and civil law	Autopsy (3 occasions)
2.	Recommendation on autopsy rules	How to fill in a death certificate?
3.	Changes after death (determination of postmortem interval)	Changes after death
4.	Classification of injuries I. (blunt force, sharp and pointed object trauma)	Medical report of injuries
5.	Classification of injuries II. (shot wounds, explosives, heat and cold, electrocution)	DNA – Biologial sample collection
6.	DNA in forensic medicine	Duties of the doctor – rights of the patiens
7.	Alcohol in forensic medicine (metabolism, detection, related crimes)	Toxicology - Alcohol analysis, sample collection
8.		Histology (vital signs)

9.	Poisoning (agricultural chemicals, alcaloids, corrosives, alcohols)
10.	Suicide
11.	Case reports

Forensic Medicine II.

Semester:	10th	**Code:**	AOK-OAK333/AOK-OAK334
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Forensic Medicine
Credit:	3/-	**Form of Exam:**	Exam/ Signature

	Lecture (2hrs/every 2nd week)	**Practice**
1.	Medical malpractice	Autopsy (3)
2.	Forensic aspects of illegal drug use	Medical malpractice case presentation
3.	Identification	Sudden death in adults
4.	Battered child, infanticide, criminal abortion, sudden infant death	Identification
5.	Forensic psychiatry	Asphyxia, drowning
6.	Forensic psychology	Sexual offences (adults)
7.	Transportation medicine, traffic accident	Toxicology – the detection of illegal drugs
8.		Facial and dental injuries DNA in forensic medicine (paternity testing)
9.		Prison health care
10.		Healing and residual conditions of injuries
11.		DNA profiling
12.		Assessment of disability. Fitness to drive.

Healthcare Management

Semester:	10th	**Code:**	AOK-OAK261
Course type:	Lecture	**Category:**	compulsory
Hours/week:	2	**Department:**	Health Economics
Credit:	2	**Form of Exam:**	Evaluation(5)

topic

1. The socio-economic context of health care: characteristics of health care; state involvement, solidarity and insurance; fair distribution and social expectations
2. Principles in health economics: economic problems in health care; marginal utility; substitutions; scarcity; supply-demand equilibrium; elasticities
3. The healthcare market: Consumer knowledge and perfectly competitive markets; consumption of healthcare services, derived demand; the impact of information asymmetry; Akerlof's "Market for lemons"; the regulated market in health
4. Healthcare finance: Money flows in healthcare; moral hazard; fundamentals of Health Insurance Schemes, the role of the private sector; setting up a well-functioning health insurance system; patient payment; type of healthcare systems

5. Healthcare systems in the world: structure and financing of different healthcare levels in different countries: financing of family doctor care; outpatient care; financing of inpatient care (HBCS); adoption of new technologies
6. Decision Economics: costs and benefits of free resources and resource allocation; funding threshold; health economics decision support
7. Health economics analyses and methods: classification of health economics analyses (cost-minimization, cost-effectiveness, cost-benefit, cost-benefit analysis); allocation and collection of costs; quantification of health gains: QALY, DALY; health-related quality of life (EQ-5D questionnaires)
8. Quality in health care: the concept of quality; quality development model; risk and risk management; performance evaluation in health care
9. Pharma economics: basic concepts; drug expenditures; characteristics and international trends in the pharmaceutical industry; economics of orphan dugs; drug supply in developing world; Pharma market players, market reorganization; focusing therapeutic areas; advancement of biological therapies, pricing of medicines; the value of therapy; background to the price support decision
10. Behavioral economics of healthcare service delivery: The impact of behavior on the organization, acceptance, and effectiveness of therapy; adherence; the psychosocial pathway of personalized therapy; defensive medicine and overdiagnosis
11. Healthcare marketing: the marketing mix in health services; consumer behavior in health markets; loyalty; marketing communication in health care

How to use microbiology laboratory results to diagnose and treat infectious diseases; interactive; problem-based case discussions

Semester:	9th or 10th	**Code:**	AOK-OAKV291
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Clinical Microbiology
Credit:	2	**Form of Exam:**	Evaluation(5)

week **topic**

1. Principles of microbiological sample collection and handling. Procedures for the transport of microbiological specimens. Cases will be discussed where these procedures have a great influence on the outcome of laboratory investigations.
2. Upper and lower respiratory tract infections. Community-acquired and nosocomial pneumonia cases will be discussed in details. How to choose adequate antibiotic therapy? The value of microbiological tests in these cases will be discussed.
3. Upper and lower urinary tract infections. Differences in antibiotic resistances of pathogens causing urinary tract infections. Pitfalls in laboratory tests.
4. Differences in gastrointestinal diseases caused by bacteria, viruses and parasites. Possibilities in the laboratory diagnosis and treatment of these infections.
5. Infection or colonization. How to distinguish them using microbiological laboratory tests? Difficulties in the interpretation of laboratory results and findings.
6. Nosocomial infections, nosocomial epidemics, and laboratory methods which are suitable to follow the spread of nosocomial pathogens in a hospital environment. Cases involved in nosocomial epidemics will be discussed, together with measures taken to stop the spread of nosocomial pathogens.
7. Neuroinfections and joint infections. Laboratory methods, including molecular techniques to set up the diagnoses of central nervous system infections.

8. Infections of immunocompromised patients, special aspects of infections in case of patients with haematologic malignancy. Problems in the laboratory diagnosis of these infections.

9. Sexually-transmitted diseases and their consequences, classic and newly recognized sexually-transmitted infections. Diagnostic possibilities in case of STIs.

10. Infections caused by anaerobic bacteria, diagnostic problems and anaerobic culture possibilities.

11. Sepsis and its consequences, and blood culture techniques in the diagnosis of sepsis. Treatment possibilities in case of bloodstream infections. The spread of antibiotic resistance worldwide, development of resistance to certain antibiotics during therapy.

12. General principles of specimen collection and handling in case of viral infections. Emerging and re-emerging viral infections. Cases will be discussed where these procedures have a great influence on the outcome of laboratory investigations.

13. How to use molecular biological methods in routine clinical microbiological diagnostics? The value of these methods? Cases will be discussed where molecular techniques can help to set up the diagnosis.

14. General principles of detection and identification of infections caused by parasites.

Hungarian Language VII.

Semester:	7th	**Code:**	AOK-OAK607
Course type:	Practice	**Category:**	compulsory
Hours/week:	3	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Term Mark

week **topic**

1. Revision

2-3. Revision (Internal medicine) + Field practice (Internal medicine)

4-8. Pulmonology. The structure of the respiratory system.

The most frequent abnormal conditions and diseases in Pulmonology. Revising the vocabulary of breathing problems, coughing and sputum. Practicing doctor–patient communication: role-play, history taking and examination of patients with respiratory problems. Giving advice to patients concerning medication. Reading simple Hungarian case histories taken from the field of Pulmonology.

8. Oral exam – history taking (Pulmonology)

9. Field practice (Pulmonology)

10-12. Orthopedics.

The structure of the skeletal system. Revising the name of bones and joints. The most frequent abnormal conditions and diseases in Orthopedics. Practicing doctor–patient situations: role-play, history taking in Orthopedics. Briefing English case histories taken from the field of Orthopedics in Hungarian.

13. Field practice (Orthopedics)

14. Oral test – case summaries (Internal medicine, Pulmonology, Orthopedics)

Hungarian Language VIII.

Semester:	8th	**Code:**	AOK-OAK608
Course type:	Practice	**Category:**	compulsory
Hours/week:	3	**Department:**	Med. Comm. and Translation
Credit:	-	**Form of Exam:**	Comprehensive Exam

week	topic
1-4.	Gynecology. The external and internal female genital organs. The most frequent complaints and diseases in the field of gynecology. Practicing basic doctor–patient situations: role-play, history taking in Gynecology. Asking the patient about her menstruation cycle and history. Revision of Wh-questions. Obstetrics. Taking history concerning previous pregnancies. Deliveries and abortions. Complaints during pregnancy.
5.	Field practice.
6-8.	Urology. Urology. The most common conditions and diseases in the field of Urology: cystitis, kidney stones, pyelonephritis. Practicing doctor–patient situations: role-play, history taking in Urology. Briefing English case histories taken from the field of Urology in Hungarian.
9.	Oral exam
10-14.	General revision. Practicing doctor–patient dialogues in all covered medical fields. Revision. Practicing doctor–patient situations that can emerge at medical and surgical departments. Interviewing and examining patients, sending them for further investigations, giving advice on diet, life style, and medication.

Infectology - Infectious Diseases (Internal Medicine IV.)

Semester:	9th	**Code:**	AOK-OAK275/AOK-OAK276
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Internal Medicine
Credit:	3/-	**Form of Exam:**	Exam/Signature

week	Lecture	Practice
1.	Introduction to infectology, Infection control	History, principles, distribution of infectious diseases. Epidemiological problems. Pathogenetic agents.
2.	Antimicrobal therapy, antibiotic policy	Antibiotic stewardship, empiric and targeted antibiotic therapy. Discussion of cases.
3.	Practice of antimicrobial prophylaxis, Cardiovascular infections	Clinical situations when antibiotic prophylaxis is suggested or necessary. Infective endocarditis, pathogens, diagnosis and therapy. Case discussion.
4.	Intravascular device associated infections, Neuroinfections	Central vena catheter associated infections, prevencion of infection, the correct diagnosis and therapy. Different types of central nervous infections, pathogens, diagnosis, therapy and prevention. Case discussions.

5.	Systemic fungal infections, Exanthematous infectious diseases	Fungal infections in immunocompromised patients, diagnostic tools, antifungal therapy. Case discussions. Viral infections which can cause exanthemas, symptoms, differential diagnosis, therapy, prevention. Case discussions.
6.	Respiratory tract infections	Viral and bacterial infections of upper and lower respiratory tract. Case discussions.
7.	Gastrointestinal and intraabdominal infections	Infections of the gastrointestinal and intraabdominal tract Case discussions.
8.	Joint and bone infections, Frequent multiresistant organisms	Bacterial, viral and fungal infection of joints and bones. Prostetic joint infection. Gram-positive and Gram-negative multidrog resistant bacterial infections. Surveillance, prevention, decolonisation procedures. Case discussions
9.	Sexually transmitted and gynaecological infections. Urinary tract infections	Syphilis, gonorrhoea, Chlamydia trachomatis, herpes viruses as the sexually transmitted infections. Infections of the male, female genital tract and urinary tract. Symptoms, diagnosis and therapy. Case discussions
10.	Skin and soft tissue infections, Hepatobiliary infections	Viral and bacterial infections of the skin and soft tissue. Symptoms, diagnosis and therapy. Case discussions
11.	Infections in immunosuppression, Sepsis, Toxic shock syndrome	Pathogens which can cause infections in neutropenic, or other immunocompromised patients. Patomechanizm of the bacterial sepsis, diagnosis, therapy. Streptococcus and staphylococcus toxic shock. Case discussions
12.	Antropozoonoses, bioterrorizm	Vector transmitted infections, symptoms, diagnosis and therapy. Tools of bioterrorism. Case discussions
13.	Vaccines, Most common parasitic infections	Preventable infectious diseases using vaccins. gastrointestinal and systhemic parasitic infections. Case discussions
14.	Intraduction to tropical diseases	Pathophysiology and diagnosis of tropical infectious diseases. Case discussions

Internal Medicine II.

Semester:	7th	**Code:**	AOK-OAK271/AOK-OAK272
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	4/2	**Department:**	Internal Medicine
Credit:	5/-	**Form of Exam:**	Exam/Signature

	Lecture	Practice
*	Echocardiography	Methods in echocardiography, reading an echocardiographic record.
*	Infective endocarditis. Tumors of the heart	Taking the case history the physical examination.

*	Hypertension in cardiologic aspect. Aortic dissection	Performing percussion, auscultation.
*	Aortic stenosis +Aortic incompetence.	Performing percussion, auscultation.
*	Mitral stenosis + Mitral incompetence	Performing percussion, auscultation.
*	Tricuspid stenosis and incompetence. Combined valvular heart disease. Prosthetic valve.	Performing percussion, auscultation.
*	Rheumatic fever. Myocardtitis and pericarditis	The physical findings of rheumatic fever and inflammatory diseases.
*	Adult congenital heart diseases	Performing percussion, auscultation.
*	Hypertrophic and dilatative cardiomyopathy: diagnosis and treatment	Performing percussion, auscultation. The physical findings of cardiomyopathies.
*	Electrocardiography	Reading ECG records.
*	Cardiac arrhythmias	Reading ECG records learning modern antiarrhythmic treatment and procedures.
*	Ischemic heart diseases	Non invasive and invasive technics in the diagnosis of ischemic heart disease.
*	Invasive diagnostic and theraputic methods in cardiology	Non invasive and invasive technics in the diagnosis of ischemic heart disease.
*	Restrictive and obliterative cardiomyopathy. Chronic heart failure	Performing percussion, auscultation. The physical findings of cardiomyopathies and chronic heart failure.
*	Pulmonary embolism. Pulmonary hypertension.	Physical findings of pulmonary embolism and hypertension.
*	Cardiac rehabilitation	Possibilities in rehabilitation program.
*	Special cardiac conditions: women, athletics, elders. Cardiac risk stratification in non cardiac surgery	Non invasive and invasive technics in cardiology.
*	Acute heart failure. Failure of periferial circulation	The signs and treatment of heart failure and periferial circulation disturbances.
*	Revascularization in cardiac surgery	Visiting at operation theatre.
*	Basic hematology	Evaluation of laboratory data
*	Anemias	Inspection of patients with anaemia
*	Anemias. Hemolytic anemia	Microscopic evaluation of red cells morphology
*	Pancytopenias (Myelodysplastic	Bone marrow smears examination, physical signs of pancytopenic patients
*	syndromes. Aplastic anemia)	
*	Acut leukemia	Examination of blood and bone marrow smears with acute leukemias
*	Stem cell transplantation	Discussion of indications for stem cell transplantation
*	Myeloproliferative diseases	Palpation of spleens and enlarged livers
*	Malignant lymphomas.	Lymp nodes palpation
*	(Classification, Hodgkin disease)	
*	Aggressive lymphomas	Examination of blood and bone marrow smears with lymphomatic infiltration
*	Malignant lymphomas.	X ray consultation, physical examinations
*	(Indolent lymphomas, multiple myeloma)	
*	Coagulation abnormalities. (Thrombophilias)	Bleeding manifestations

Internal Medicine III.

Semester:	8th	**Code:**	AOK-OAK273/AOK-OAK274
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	5/2	**Department:**	Internal Medicine
Credit:	5/-	**Form of Exam:**	Exam/Signature

	Lecture	Practice
1.	Acute and chronic kidney failure, dialysis technics.	Clinical approach of patients with kidney failure. Renal replacement therapy.
2.	Kidney transplantations.	Clinical approach of patients with kidney transplantation.
3.	Tumors of kidney. Kidney stone disease.	Clinical approach of patients with renal tumors. Clinical approach of patientes with kidney stones.
4.	Tubulointerstitial diseases. Polycystic kidney disease.	Clinical approach of patients with tubulointerstitial diseases. Clinical approach of patients with PKD.
5.	Dietary treatment of kidney patients. Diagnostic procedures. Urinary tract infections.	Dietary restrictions in kidney disease. Physical examination. Urine analysis. Kidney biopsy. Clinical approach of patients with UTI.
6.	Glomerulonephritises.	Clinical approach of patients with GNs.
7.	Central blood pressure.	Measurement and clinical significance.
8.	Pregnancy and the kidney.	Pregnancy and nephropathies.
9.	Hypertension: definition, etiology.	Correct blood pressure measurement.
10.	Hypertension: therapy, complications.	Clinical approach of patientes with hypertension mediated organ damages.
11.	Resistant hypertension. Cardiorenal syndrome.	Clinical approach of patients with resistant HTN. Clinical approach of patients with CRS.
12.	Management of hypertension in transplant patients.	Antihypertensive therapy after kidney transplantation.
13.	Renal manifestations of systemic diseases (except DKD).	Clinical approach of patients with secondary kidney diseases.
14.	Diabetes mellitus and the kidney (DKD).	Clinical approach of patients with DKD.
15.	Diabetes mellitus (classification, epidemiology). Insulin resistance / Metabolic syndrome.	Clinical approach of patients with diabetes mellitus. Clinical approach of patients with insuline resistance and/or metabolic syndrome.
16.	Diabetes mellitus (etiology, pathomechanisms, therapy).	Blood glucose determination with D-cont device. Subcutaneous insulin administration.
17.	Diabetes mellitus (acute and chronic complications)	Clinical approach of patients with complicated DM.
18.	Hyperlipidaemia.	Clinical approach of patients with hyperlipidaemia.
19.	Hypothyalamus. Neurohypophysis. Glandula suprarenale: cortical disorders.	Clinical approach of patients with hypothalamus diseases. Clinical approach of patients with neurohypophysis disorders. Clinical approach of patients with suprarenale cortical disorders.
20.	Adenohypophysis diseases.	Tumors of the adenohypophysis.
21.	Cushing and Addison diseases.	Clinical approach of patients with Cushing and Addison diseases.
22.	Glandula suprarenale: medullary disorders. MEN.	Clinical approach of patients with suprarenale medullary disorders. Clinical approach of patients with MEN.
23.	Thyroiditis, thyroid malignancy.	Clinical approach of patients with thyroiditises. Clinical approach of patients with thyroid cancer.
24.	Hyper- and hypothyreoidism.	Clinical approach of patients with hyperthyreoidism. Clinical approach of patients with hypothyreoidism.
25.	Hypogonadism.	Clinical approach of patients with hypogonadism.
26.	NET tumors.	Clinical approach of patients with NET tumors.
27.	Obesity.	Clinical approach of patients with obesity.
28.	Osteoporosis.	Clinical approach of patients with osteoporosis.
29.	Parathyroid disorders.	Clinical approach of patients with parathyroid disorders.

Internal Medicine V.

Semester:	10th	**Code:**	AOK-OAK277/AOK-OAK278
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/16 hrs total	**Department:**	Internal Medicine
Credit:	3/-	**Form of Exam:**	Evaluation(5)/Signature

	Lecture	**Practice**
1.	Rheumatoid arthritis.	Physical examination of the joints, identification of the characteristics of rheumatoid arthritis from the history and the physical examination of the patients
2.	Sjögren's syndrome. Myositides. Systemic sclerosis (scleroderma)	Examination of autoimmune-specific physical findings: sicca complex, sclerodactylia, sclerodermiform skin changes, calcinosis, teleangiectasia, etc. Differential diagnosis of Raynaud's phenomenon. Clinical approach to a patient with myositis
3.	Spondylarthritides	Physical examination of the spine, differentiation between inflammatory and degenerative spinal diseases. Dactylitis, enthesitis. Differential diagnosis of diseases with polyarthritis
4.	Systemic lupus erythematosus. Antiphospholipid syndrome. Principles of immunosuppressive therapy	Lupus-specific physical findings – skin, vasculitis, Raynaud's, Jaccoud arthritis. The principles and practice of immunosuppressive therapy. Approach to an immunocompromised patient
5.	Degenerative diseases of the spine. Gout.	Typical symptoms, physical findings in patients with osteoarthritis and herniated disc. Differential diagnosis of back pain. Regional physical diagnostics of pain syndromes.
6.	Systemic vasculitides	Review of the disease course of ANCA-vasculitis through interview of patients. Radiographic evaluation of interstitial lung disease chest CT-scans. Specific questions to identify rare but life-endangering vasculitis syndromes in medical practice. Specific physical findings, and the importance of urinalysis in immunology.
7.	Fever, ion abnormalities	Clinical approach of patients with fever. Clinical approach of patients with ion abnormalities.
8.	Anaemia, lymphadenomegaly	Clinical approach of patients with anemia. Clinical approach of patients with lyphadenomegalia.
9.	Edema, hematuria, proteinuria	Clinical approach of patients with edema, hematuria, proteinuria
10.	Cyanosis, dyspnea	Clinical approach of patients with cyanosis, dyspnea
11.	Arrrhythmias, syncope	Clinical approach of patients with chest pain and syncope
12.	Abdominal pain, acute abdomen, jaundice, ascites	Clinical approach of patients with abdominal pain
13.	Diarrhoea, constipation, GI motility disorders	Clinical approach of patients with diarrhea and constipation. Symptom oriented and instrumental diagnosis of gastrointestinal motilit disorders.

Introduction to the approach to the critically ill patient-the basic bedside clinical skills

Semester:	8th	**Code:**	AOK-OAK241/AOK-OAK242
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Anesthesiology
Credit:	-/2	**Form of Exam:**	Signature/Term Mark

Description

Our goal is to transfer a usable, bedside knowledge through simple situational simulation exercises for the fourth-year medical students. The basis of our practical training is the quick examination of the ABCDE of a critical patient and the skilful acquisition of SBAR as a communication tool. By teaching the ABCDE quick test, we maintain the urgency of the subject, and we also try to establish the ability to create a "group diagnosis" that is so popular in the Anglo-Saxon countries.

We intend to introduce and promote SBAR as a unified communication tool at the university level. This tool is great for quick, aggregated referrals and requests for help within and across disciplines.

The manual and practical skills defined by the curriculum will be embedded in short and simple situations. The complexity of situational exercises ranges from simple to complex. It provides an excellent opportunity to integrate previously acquired ECG analysis, pathophysiological and pharmacological knowledge. Initially, we aim to present simple cases (conscious patient) and then there is an increasing emphasis on truly critical situations. Towards the end of the semester, we will integrate more severe arrhythmias and their effects on circulation, and then, in case of proper development, we will also simulate in an intensive classroom environment, focusing mainly on what monitoring opportunities the student may encounter there.

The writing of the situations was preceded by the study of the third-, and fourth-year curriculum.

We intend to introduce the concept of so-called non-technical skills. In addition to practicing the use of the tools and seeing the clinical context, we will place great emphasis on getting to know human factors (recognizing limitations, asking for help, communication, leadership, task delegation…).

Our goal is that by the end of the semester, the students will not see the life-threatening physiological differences in pieces, but will experience and understand their effects on other organ systems, and recognize where and how to intervene, when and from whom can ask for help. The students will use the available tools with sufficient confidence or learn the methodology of reflective practice, which they can then use throughout their career.

Introduction to Aviation and Space Medicine

Semester:	7th or 9th	**Code:**	AOK-OAKV131
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Aviation and Space Medicine
Credit:	2	**Form of Exam:**	Evaluation(5)

week	topic
1.	The history, subject, position and role of aviation and space medicine in medical sciences.
2.	The effect of the dynamic factors of aviation on the pilot's body. The pilot's life-saving equipment.
3.	The effects of noise and vibration on the human body during flight.
4.	The basics of aerodynamics. The composition, layers and main physical properties of the atmosphere.
5.	The medical qualification of pilots and parachuters. The ergonomical characters of the cockpit of an aircraft.
6.	The effects of short- and long-range flights from the passenger's point of view.
7.	Medical Evacuation by Air (MEDEVAC) Transportation of Sick and Wounded Patients by Air.
8.	The pilot's lifestyle, nutrition and sports.

9. The adverse effects of changes in baropressure on the human body. The effect of reduction in partial oxygen pressure on the human body, its importance in aviation. Pressure oxygen breathing. The pressurized cabin.
10. The psychophysiological characters of the pilot's personality. The fatigue and overload of aircrews
11. Decompression sickness.
12. Spatial alertness in flight, flight illusions. Motion sickness in aviation.
13. The physiological effects of space flight on the human body. The basic principles of astronaut selection and training.

Introduction to the approach to the critically ill patient-the basic bedside clinical skills practice

Semester:	8th	**Code:**	AOK-OAK242
Course type:	practice	**Category:**	compulsory
Hours/week:		**Department:**	Anesthesiology and Intensive Therapy
Credit:	2	**Form of Exam:**	Term Mark (5)

Our goal is to transfer a usable, bedside knowledge through simple situational simulation exercises for the fourth-year medical students. The basis of our practical training is the quick examination of the ABCDE of a critical patient and the skilful acquisition of SBAR as a communication tool. By teaching the ABCDE quick test, we maintain the urgency of the subject, and we also try to establish the ability to create a "group diagnosis" that is so popular in the Anglo-Saxon countries.

We intend to introduce and promote SBAR as a unified communication tool at the university level. This tool is great for quick, aggregated referrals and requests for help within and across disciplines.

The manual and practical skills defined by the curriculum will be embedded in short and simple situations. The complexity of situational exercises ranges from simple to complex. It provides an excellent opportunity to integrate previously acquired ECG analysis, pathophysiological and pharmacological knowledge. Initially, we aim to present simple cases (conscious patient) and then there is an increasing emphasis on truly critical situations. Towards the end of the semester, we will integrate more severe arrhythmias and their effects on circulation, and then, in case of proper development, we will also simulate in an intensive classroom environment, focusing mainly on what monitoring opportunities the student may encounter there.

The writing of the situations was preceded by the study of the third-, and fourth-year curriculum.

We intend to introduce the concept of so-called non-technical skills. In addition to practicing the use of the tools and seeing the clinical context, we will place great emphasis on getting to know human factors (recognizing limitations, asking for help, communication, leadership, task delegation…).

Our goal is that by the end of the semester, the students will not see the life-threatening physiological differences in pieces, but will experience and understand their effects on other organ systems, and recognize where and how to intervene, when and from whom can ask for help. The students will use the available tools with sufficient confidence or learn the methodology of reflective practice, which they can then use throughout their career.

Introduction to the approach to the critically ill patient-the basic bedside clinical skills lecture

Semester:	8th	**Code:**	AOK-OAK241
Course type:	lecture	**Category:**	compulsory
Hours/week:		**Department:**	Anesthesiology and Intensive Therapy
Credit:	-	**Form of Exam:**	Signature

week **topics**

1. Proper place for point- of-care sonography
   Ultrasound techniques and point-of-care sonography
   Basic properties of ultrasound machines, basic settings, transducers

2. Basic US planes of the heart.
   Estimation of global left ventricular function and heart chamber dimensions.
   Suspicion and identification of acute myocardial infarction, acute valvular regurgitation, acute right-heart failure.
   Identification of pericardial effusion. US-guided pericardial tap (pericardiocentesis)

3. Role of point-of-care sonography during management of polytraumatised patients: FAST („focused assesment with sonography for trauma")
   Suspicion and identifying of abdominal and pelvic fluid collections, hematomas, bleeding, urinary retention. US-guided abdominal tap.
   US-guided peritoneal tap
   Signs of atelectasis, infiltration
   Pleural effusion, pneumothorax

4. Role of transoesophageal ECHO in the cardiac surgery anesthesia
   Examination of inferior vena cava, collaptibility, fluid responsiveness.
   US guided vascular interventions: insertion of a central venous cannula, US guided intervention: percutaneous tracheotomy
   Role of ultrasound in intracranial pathology (trauma, intracranial bleeding, intracranial pressure elevation): measurement of n. opticus diameter, role of transcranial Doppler ultrasound

5. Ultrasound guided regional anaesthesia: basic principles.
   Regional anaesthesia of the thrunk, the upper and the lower limb, nerve blockades.

6. Bedside practice

Laboratory Diagnostics: Use of Laboratory Tests in Practice

Semester:	8th or 10th	**Code:**	AOK-OAKV401
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Laboratory Medicine
Credit:	2	**Form of Exam:**	Evaluation(5)

week **topic**

1. Introduction to laboratory diagnostics
2. Visit at the Department of Laboratory Medicine
3. Endocrinology I.
   Case presentations in endocrinology – a case oriented approach: Functional tests and diagnostic algorithms in the investigation of endocrine abnormalities
4. Endocrinology II.
   Case presentations in endocrinology – a case oriented approach: Functional tests and diagnostic algorithms in the investigation of endocrine abnormalities
5. Laboratory diagnosis of renal diseases: Managing patients with acute and chronic renal failure, diagnosis of impaired glomerular and tubular function. Differential diagnosis of proteinuria

6. Cardiovascular risk assessment and laboratory management of patients with cardiovascular diseases: case discussions – Evidence-based practice of AMI, acute coronary syndrome and congestive heart failure. Differential diagnosis of acute chest pain and dyspnoea.
7. Clinical significance and application of tumor markers
8. Laboratory diagnosis of coagulation disorders: Cases on the diagnosis of thrombo-embolic events (DVT, PE, congenital thrombophilias, lupus anticoagulant and anti-phospholipid syndrome) and bleeding disorders
9. Haematology cases: differential diagnosis of anaemia, diagnosis of monoclonal gammopathies, use of flow cytometry in haemato-oncology
10. Autoimmun disorders
11. Therapeutic drug monitoring: Role of TDM in patients treated with lithium, digoxin, antibiotics and immunosuppressive medications.Toxicology: Cases on drug overdose and ingestion of toxic substances.
12. Postanalytical cases

Medical history-taking in Hungarian I.

Semester:	9th	**Code:**	AOK-OASZV701
Course type:	Practice	**Category:**	elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Evaluation (5)

week **topic**

1. Revision: the structural format of history-taking, an overview
2. **Neurology**: the most frequent neurological diseases and their associated complaints
3. Performing a neurological physical examination; a brief description of the most frequently used investigations in neurology
4. Taking a focused history in neurology: falls, loss of consciousness
5. Taking a focused history in neurology: different types of headaches
6. Taking a focused history in neurology: weakness, numbness/paresthesia
7. Taking a focused history in neurology: dizziness, hearing loss, speech disorders
8. Oral exam: history taking and physical examination in neurology
9. **Pediatrics**: a set of unique challenges; the components of pediatric history
10. Developmental milestones in children; the ways of inquiring about these milestones
11. Taking a focused history in pediatrics: vomiting and diarrhea
12. Taking a focused history in pediatrics: cough, dyspnea, failure to thrive, behavioral abnormalities
13. Taking a focused history in pediatrics: accidents, convulsions
14. Oral exam: case summaries in neurology and pediatrics - the students' oral case reports based on their own clinical practice

Medical history-taking in Hungarian II.

Semester:	10th	**Code:**	AOK-OASZV702
Course type:	Practice	**Category:**	elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Evaluation (5)

week	topic
1.	**Dermatology**: the skin and its appendages; the most typical dermatological diseases and their symptoms
2.	Approaching skin lesions: duration, location, provoking or relieving factors, associated symptoms, underlying malignancies, etc.
3.	Taking a focused history in dermatology: an itchy rash
4.	Taking a focused history in dermatology: a nevus that has enlarged
5.	**Ophthalmology**: vision, visual disorders, the most frequent diseases of the eyes
6.	Eye injuries, the patients' complaints, ophthalmological examinations
7.	Taking a focused history in ophthalmology: red and itchy eye, cataract, glaucoma
8.	Oral exam: history taking in dermatology an ophthalmology
9.	**ENT**: the most frequent ENT diseases and their associated complaints
10.	Performing ENT examinations, giving instructions to patients
11.	Taking a focused history in ENT: otalgia and hearing loss
12.	Taking a focused history in ENT: hoarseness and sore throat
13.	Selected case summaries in the clinical fields covered in the semester
14.	Oral exam: case summaries in the medical fields covered in the semester. The students' oral case reports based on their own clinical practice

Medical Psychology I.

Semester:	7th	**Code:**	AOK-OAK421/AOK-OAK422
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1 (for 5 weeks)/2 (for 10 weeks)	**Department:**	Behavioural Sciences
Credit:	2/-	**Form of Exam:**	Signature/Signature

	Lecture	Practice
1.	Introduction; Health – Health Promotion	Adherence in type patient–physician relationship
2.	Illness: Symptoms; Experience of Illness	CLASS model, bio-psycho-social model, system theory
3.	Nature-Nuture; Biological-Psychological factors	Active listening skills and Acknowledgement of Emotion strategies
4.	Stress	Suggestive Communication
5.	Chronic illness, Thanatological aspect of medicine	Motivational interview I.
6.		Motivational interview II.
7.		Building competence through video analyses
8.		Consultation
9.		CLINICAL PRACTICES
10.		CLINICAL PRACTICES
11.		CLINICAL PRACTICES
12.		Skill lab practice I.
13.		Skill lab practice II.

Medical Psychology II.

Semester:	8th	**Code:**	AOK-OAK431/AOK-OAK432
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/3(for 5/5 weeks)	**Department:**	Behavioural Sciences
Credit:	2/-	**Form of Exam:**	Signature/Term Mark

week	**Lecture**	**Practice**
1.	Introduction. Psycho-neuro-immunology, Psychosomatic Perspective	Review. Medically unexplained symptoms (MUS).
2.	Attachment / Personality, Personality Disorders	Management of upset patient
3.	Psychological Interventions I.	Communication with different age groups /Crisis
4.	Psychological Interventions II.	Burnout
5.	Psychological Interventions III.	Situational exercises

Medically Unexplained Physical Symptoms MUPS in Medical Praxis

Semester:	8-10th	**Code:**	AOK-OASZV741
Course type:	Practice	**Category:**	elective
Hours/week:	24	**Department:**	Behavioural Sciences
Credit:	1	**Form of Exam:**	Term Mark (5)

week topic (lectures)

1. Challenges and background of medically unexplained physical symptoms. - Lecture and interactive discussion.
2. Understanding the boundaries of health and illness, and related dilemmas. MUPS and doctor-patient relationship. - Working with the e-learning individually and interactive student groups: Module 1) Health culture, and doctor-patient relationship.
3. The importance of building trust, empathy, and patient centeredness in the treatment of MUPS patients. - Lecture and interactive discussion.
4. MUPS in intercultural context. - Working with the e-learning program individually and interactive student groups: Module 4) What happens when cultures meet? Doctor-patient encounters in context.
5. MUPS treatment recommendations and case discussions with videos. - Lecture and interactive discussion.

Modern Complex Therapy of Malignant Diseases in Clinical Practice

Semester:	9th	**Code:**	AOK-OAK352
Course type:	Seminar	**Category:**	compulsory
Hours/week:	1	**Department:**	Oncology
Credit:	2	**Form of Exam:**	Final report/Practice Mark/Online exam)

topic

* The essentials of medical therapy: chemotherapy, endocrine therapy, biological agents
* Radiotherapy, The technical basics of radiotherapy
* Supportive and palliative therapy, holistic care
* Gastrointestinal malignancies
* Breast cancer

* Gynecological malignancies
* Genitourinaryl malignancies
* Head and neck cancers
* Dermatological cancers, melanoma
* Central nervous system, and pediatric malignancies
* Lung cancer
* Rare malignant diseases
* Multidiscplinary approaches and team-work
* Psychooncological aspects
* Final report (online)

Rehabilitation medicine – basics of theory and daily practice

Semester:	8th, 10th	**Code:**	AOK-OAKV501
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Medical Rehabilitation
Credit:	2	**Form of Exam:**	Evaluation(5)

topic

* The approach of disability
* Concept of comprehensive rehabilitation
* The rehabilitation process, term and content of the rehabilitatio programme
* The rehabilitation consultation
* The functional assessment
* Main interventions used in rehabilitation
* Prevention and rehabilitation
* The main types of rehabilitation: post stroke, brain injury, spinal cord injury, post orthopedic-traumatological surgery, amputees, rheumatological, cardiological, pulmonological, rehabilitation of children
* Medical aids used in rehabilitation

Neurology I.

Semester:	9th	**Code:**	AOK-OAK381/AOK-OAK382
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Neurology
Credit:	3/-	**Form of Exam:**	Exam/Signature

Schedule of the neurology practice:
- discussion of theoretical topics, following the guidelines below (after the first practice, the students will prepare and present the topics)
- Patient examination – history, physical exam, conclusions (during the first practices and in interesting cases we will do it together otherwise in small groups), the discussion of results of the exam together, practice
- If possible presentation of radiological findings related to neurology
- Two MTO-s during the semester, the first is based on the neurological examination performed by another teacher, the second is a written test

week	**Lecture**	**Practice**
1.	Neurological examination. Evidence-based medicine, personalised medicine.	Introduction, the procedure of medical diagnostics (history, physical examination, instrumental examinations, therapy, limitations), history of neurology and its place in medicine, special issues in neurology (limitations of direct examination, the interpretation of indirect symptoms and signs, neurological localisation). Central and peripheral nervous system.
2.	Spinal cord: neurological localisation.	Resting potential, electrotonic potential, action potential, neurotransmitters, receptors. Tendon reflexes, exteroceptiv reflexes, muscle tone. The anatomy and function of pyramidal tract, pyramidal signs. Neuromuscular junction. The symptoms of upper and lower motor neuron damage. Muscle strength scale.
3.	Pyramidal system.	Basal ganglia: anatomy, function, symptoms, testing (parkinsonism, chorea, ballismus, athetosis, dystonia). Symptoms of peripheral nerve damage, most important peripheral nerves, symptomatology, roots
4.	Extrapyramidal system.	Goll-Burdach tract, spinothalamic tract, pain– anatomy, function, symptoms, testing.
5.	Somatosensory system. Pain.	Neck stiffness, meningeal irritation signs (Kernig, Brudzinski), irritation of the roots (Lasegue and femoral traction sign). Cranial nerves: I-VI, anatomy, function, testing. Supranuclear gaze disturbances.
6.	Cerebellum. Neurological localisation.	Cranial nerves: VII-XII anatomy, function, symptoms, testing. Peripheral and central facial and hypoglossal palsy. Bulbar and pseudobulbar symptoms.
7.	Brain stem, cranial nerves. Neurological localisation.	Cerebral lobes: frontal, temporal, occipital, parietal lobar functions, symptoms, testing. Liberation reflexes. Speech disturbances: aphasia, dysarhtria, aphonia.
8.	Circulation of the nervous system. Neuroradiological diagnostics.	Buffer for the first MTO
9.	Cerebral lobes: Neurological localisation.	Brain circulation. Cerebellum: anatomy, function, symptoms (archi, paleo, neocerebellum), testing.
10.	Autonomic nervous system. Limbic system.	Vegetative system: anatomy, function, symptoms, tests. Limbic system
11.	Impaired awareness. Brain death.	Alteration of the consciousness, Causes, differentiation, examination of the patients with impaired consciousness, brain death.

12.	Neurophysiological examinations.	Instrumental exams in neurology: imaging (ultrasound, CT, MRI, angiography etc), electrophysiology: EEG, evoked potentials, ENG, EMG
13.	CSF diagnostics.	Cerebrospinal fluid, indication of spinal tap, interpretation of results.
14.	Neurological localization.	

Neurology II.

Semester: 10th
Course type: Lecture/Practice
Hours/week: 1/1
Credit: -/3
Code: AOK-OAK383/AOK-OAK384
Category: compulsory
Department: Neurology
Form of Exam: Signature/Term Mark

week	**Lecture**	**Practice**
1.	Ischemic stroke.	Cerebrovascular diseases (TIA, ischaemic stroke, apoplexy, subarachnoideal hemorrhage, sinus thrombosis)
2.	Hemorrhagic stroke.	
3.	Epilepsy. Sleep disturbances.	Epilepsy (epileptic seizures epilepsy, classification, diagnosis, therapy)
4.	Neurocognitive disorders.	
5.	Extrapyramidal/Movement disorders I.	Extrapyramidal diseases (Parkinson disease, Parkinson syndromes, Huntington chorea, Wilson's disease, essential tremor)
6.	Extrapyramidal/Movement disorders II.	
7.	Neuropathic pain.	
8.	Diagnosis and treatment of headaches.	Headaches (migraine, cluster, tension type headache), tumors of the CNS
9.	Tumors of the central nervous system.	
10.	Muscle and motoneuron disorders.	
11.	Autoimmune neurological disorders.	Neurological diseases of immunological origin (multiple sclerosis, myasthenia gravis, Guillain-Barré syndrome), ALS
12.	Neuroinflammatory disorders.	Inflammatory diseases of the CNS – meningitis, encephalitis
13.	Case presentations	Repetition, feedback

Neurosurgery

Semester: 10th
Course type: Lecture/Practice
Hours/week: 1/1
Credit: 2/-
Code: AOK-OAK321/AOK-OAK322
Category: compulsory
Department: Neurosurgery
Form of Exam: Evaluation(5)/Signature

week	Lecture (2 hrs/every 2nd week)	Practice (2 hrs/every 2nd week)
1.	Introduction to neurosurgery, Emergency neurosurgical cases I.: Traumatic Brain Injury	Material of the lecture in practice.
2.	Diagnostic procedures in neurosurgery, Emergency neurosurgical cases II: Head I (intracranial mass lesions, infection)	Material of the lecture in practice.
3.	Emergency neurosurgical cases III: Head III (cerebrovascular), Spine (trauma, degenerative, infection)	Material of the lecture in practice.
4.	Cerebrovascular diseases	Material of the lecture in practice.
5.	Neurosurgical treatment of central nervous system tumors	Material of the lecture in practice.
6.	Spine surgery: traumatic injuries, degenerative disorders, infections	Material of the lecture in practice.
7.	Other: Endovascular treatment, movement disorder and pain surgery, pediatric neurosurgery and hydrocephalus	Material of the lecture in practice.

Nuclear Medicine

Semester:	7th or 9th	**Code:**	AOK-OAKV471
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	1	**Department:**	Nuclear Medicine
Credit:	1	**Form of Exam:**	Evaluation (5)

week	topic
1.	Nuclear medicine physics History Basic principles of nuclear physics and radiation biology
2.	Instrumentation of nuclear medicine Radiation detector systems Gamma camera Single photon emission computed tomography Positron emission computed tomography (PET), PET/CT
3.	Radiopharmacology Tracer principle Production of radionuclides Radiopharmaceutical chemistry
4.	Nuclear medicine in disorders of bones and joints Bone scintigraphy Joint scintigraphy Bone marrow scintigraphy Complementary investigations of the bones and joints
5.	Nuclear cardiology I. Myocardial perfusion studies , Cardiac function /ERNA (equilibrum radionuclid angiography) , Cardiac function / FPRNA (firs pass radionuclid angiography)
6.	Nuclear cardiology II. Nuclear imaging in infection and inflammation of cardiovascular system, Nuclear imaging in malignancy of the heart , Imaging of transthyretin cardiac amyloidosis, Myocardial viability
7.	Nuclear medicine investigations of the respiratory system Lung perfusion investigation Lung ventilation investigations Diagnosis of pulmonary embolism
8.	Nuclear medicine in gastroenterology Hepatobiliary scintigraphy Differential diagnostics of focal liver lesions Scintigraphy of the salivary glands Oesophagus passage study Gastric motility study Gastrointestinal bleeding site detected by radioisotopes Meckel's diverticulum detection Investigations of intestinal inflammations Investigations in malabsorption (Schilling test)
9.	In vitro nuclear medicine assays with radionuclides Principles of immunoassays Clinical applications of immunoassays

10. Endocrinological aspects of nuclear medicine Thyroid scintigraphy Parathyroid scintigraphy Adrenal scintigraphy Neuroendocrine tumor imaging techniques
11. Nuclear medicine in urogenital disorders Static renal scintigraphy Dynamic studies Vesicoureteric reflux study Evaluation of renal transplants Scrotum scintigraphy Radionuclide hysterosalpingography
12. Nuclear oncology Tumour markers Tumouraffin radiopharmaceuticals and their applications Oncological aspects of bone marrow scintigraphy Scintigraphy of the lymphatic system, sentinel lymph node detection Oncological aspects of PET, PET/CT and SPECT/CT studies
13. Nuclear medicine in therapy Thyroid disorders treated with radioisotopes Radiosynovectomy Palliative treatment of bone metastases Possibilities in radioimmunotherapy Neuroendocrine tumours treated with 131-I-MIBG 32-P treatment in polycythaemia vera
14. Nuclear medicine of the central nervous system (CNS) Brain angioscintigraphy and blood-brain barrier scintigraphy Cerebrospinal fluid scintigraphy Brain SPECT studies Neuroreceptor SPECT Brain tumors evaluated by SPECT Brain PET studies

Obstetrics and Gynaecology I.

Semester:	7th	**Code:**	AOK-OAK501/AOK-OAK502
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/2	**Department:**	Obstetrics and Gynaecology
Credit:	4/-	**Form of Exam:**	Exam/Signature

Lecture	**Practice**
* Introduction. Concepts of obstetrics and gynaecology and its role in modern medicine. Historical review.	Prenatal care. Obstetrical history, physical examination.
* Development and function of the placenta. Development of the fetus.	Pregnancy tests
* Endocrinology of pregnancy.	Induction of labour
* Obstetrical anatomy. Diagnosis of pregnancy.	Ultrasonography
* Genital and extragenital changes during pregnancy.	Follow up examinations during pregnancy
* Signs of the fetal life. The mature placenta, umbilical cord, membranes and amniotic fluid.	Genetics, CVS, AC, Cordocentesis
* Intrauterine position of the fetus.	Preparation for labour
* Antenatal care and examinations.	CTG, OCT, AS, X ray
* Normal mechanism of labour.	Normal delivery
* Patient care during labour.	Induced abortion. Surgical aspects.
* Pharmacokinetics in pregnancy. Registration of the uterine activity.	Forceps delivery, vacuum extraction
* Diseases of the trophoblast.	Breech presentation
* Monitoring of the fetus and placenta.	Postpartal hemorrhage
* Physiology of the uterus.	Caesarean section
* Obstetrical ultrasonography.	

* The newborn. Care and management. The puerperium.
* Abortion.
* Ectopic pregnancy.
* EPH-gestosis.
* Breech presentation and delivery.
* Multiple pregnancy.
* Premature labour.
* Management of delivery. Induction of labour.
* Intrauterine death. Postmaturity. Dysmaturity.
* Alternative delivery methods.

Obstetrics and Gynaecology II.

Semester:	8th	**Code:**	AOK-OAK503/AOK-OAK504
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	3/2	**Department:**	Obstetrics and Gynaecology
Credit:	4/-	**Form of Exam:**	Exam/Signature

Lecture	**Practice**
* Uterine rupture, postpartal haemorrhage, abnormal puerperium.	Gynaecological history taking, physical and pelvic examinations.
* Causes of 3rd trimester bleeding (premature separation of the placenta, DIC, plac. praevia).	Screening methods for cervical cancer: cytology.
* Dysmaturity. Hyperemesis.	Screening methods for cervical cancer: colposcopy.
* Erythroblastosis fetalis.	Curettage, cervical biopsy, electrocauterisation, conisation.
* Dystocia (difficult labor) pelvic dystocia due to uterine dysfunction, dystocia of fetal origin, dystocia of placental origigin.	Female infertility, diagnostic procedures.
* Infectious diseases and pregnancy.	Infertility study of the male partner.
* Respiratory, renal, neurologic, endocrine and metabolic diseases.	Labor procedures of infertility.
* Benign tumors of the uterus.	Conception control.
* Diseases of the cervix. Cancer screening.	Endoscopy.
* Pelvic inflammatory diseases. Diseases of the Fallopian tube.	Abdominal gynaecological operations.
* Medical complications during pregnancy. (Heart, haematologic, gastrointestinal diseases.)	Vaginal surgical procedures.
* Genetic disorders.	Adolescent gynaecology.
* Birth control. Contraception.	Physiotherapy in gynaecology.
* Abnormalities of the menstruation.	Radio- and chemotherapy.
* Climacteric.	Psychosexual diseases.

* Ethical aspects of Obstetrics-Gynaecology.
* Endometriosis.
* Assisted fertilization in the female.
* Gynaecological endoscopy.
* Infertility of the female.
* Benign ovarian tumors.
* Malignant ovarian tumors.
* Adolescent gynaecology.
* Infertility of the male.
* Diseases of the vulva and vagina.

Ophthalmology

Semester:	9th or 10th	**Code:**	AOK-OAK491/AOK-OAK492
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Ophthalmology
Credit:	3/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	General introduction	VA (visual acuity)
2.	Ocular anatomy and physiology	Pupil reactions/eye movments/color saturation
3.	Lids, lacrimal system	VF (visual fields)
4.	Glaucoma	Instruments (ophthalmoscope, slit lamp, tonometer etc)
5.	Conjunctiva	Emergencies (CRAO, palsies, injuries, A-AION)
6.	Cornea	Surgeries
7.	Lens	Photos
8.	Sclera and orbit	Ocular injuries and acute red eye
9.	Uvea	Contact lens
10.	Retina	Lasers (argon, YAG, diode, excimer, femto)
11.	Retinal detachment and vitreous	Pediatric and eye movements
12.	Neuro-ophthalmology	OCT and angio
13.	Eye and systemic diseases	Ultrasound
14.	Pediatric	Consultations

Oral and Maxillofacial Surgery, Stomatology

Semester:	9th	**Code:**	AOK-OAK251/AOK-OAK252
Course type:	Lecture/Seminar	**Category:**	compulsory
Hours/week:	1/1	**Department:**	Oral and Maxillofacial Surgery
Credit:	2/-	**Form of Exam:**	Exam/Signature

topics:

- Cleft lip and palate surgery
- Anatomy of the oral cavity. General principles of dentistry. Pediatric dentistry.
- Principles of trauma management. Conservative treatment of facial trauma. Mandibular fracture
- Midface, frontal skull base fractures
- Etiology and diagnosis of oral cancer
- Medication related osteonecrosis of the jaws
- Dental and facial prostheses
- Implantology. Preprosthetic surgery.
- Medical consequences of oral and dental diseases
- Dental trauma
- Orthognathic surgery
- Distraction osteogenesis
- Trismus
- Temporomandibular joint surgery
- Oral symptoms of health conditions
- Periodontal disease and general consequences
- Surgical management of oral cancer
- Salivary gland diseases
- Virtual planning in maxillofacial and dental surgery
- Dentoalveolar surgery. Cysts.
- Orthodontics
- Reconstruction of orofacial defects
- Differential diagnosis of facial pain
- General medicine in perioperative oral and maxillofacial care
- Odontogenic infections
- Emergencies in oral and maxillofacial surgery.
- Craniofacial disorders
- Plastic and cosmetic surgery in the maxillofacial region

Orthopedics

Semester:	7th	**Code:**	AOK-OAK391/AOK-OAK392
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Orthopedics
Credit:	3/-	**Form of Exam:**	Exam/Signature

week	Lecture	Practice
1.	Field of orthopaedics, history. Diagnosis and treatment of orthopaedic disorders.	The course of the examination of the patients with locomotor system diseases. Diagnostic means. X-ray demonstration. Case report.
2.	Disorders of the spine in childhood. Scoliosis.	Examination of the neck and cervical spine. Disorders of the neck and cervical spine. X-ray demonstration. Case report.
3.	General affections of the skeleton	Examination of the trunk and spine. Disorders of the trunk and spine. X-ray demonstration. Case report.
4.	Congenital deformities and disabilities	Examination of the scoliosis. Diagnostic means. X-ray demonstration. Case report.

5.	Disorders of the foot (congenital club foot, pes planovalgus)	Examination of the shoulder and elbow. Disorders of the shoulder and elbow. X-ray demonstration. Case report.
6.	Arthritis, osteomyelitis, tuberculous arthritis	Examination of the forearm, wrist and the hand. Disorders of the forearm, wrist and the hand. X-ray demonstration. Case report.
7.	Bone tumors	Examination of the hip regio. Disorders of the hip. Messuring the length of the limbs. X-ray demonstration. Case report.
8.	Infections and degenerative disorders of the spine. Spondylolysis, spondylolisthesis.	Examination of the osteoarthritis of the hip and of the knee. X-ray demonstration. Case report.
9.	Disorders of the neck and upper limbs	Examination of the knee. Disorders of the knee. X-ray demonstration. Case report.
10.	Congenital dislocation and dysplasia of the hip	Examination of the leg, ankle and foot. Disorders of the leg, ankle and foot. X-ray demonstration. Case report.
11.	Other hip disorders in childhood (Perthes disease, slipped upper femoral epiphysis. Transient arthritis of the hip.)	Infections of the bone. Arthritis. Bone tumors. X-ray demonstration. Case report.
12.	Osteoarthritis of the hip. Idiopathical necrosis capitis femoris.	Osteoarthrosis. General affections of the skeleton. (Neurological disorders). X-ray demonstration. Case report.
13.	Disorders of the knee.	
14.	Neuromuscular diseases, general affections of the skeleton	

Oto-Rhino-Laryngology

Semester:	9th or 10th	**Code:**	AOK-OAK301/AOK-OAK302
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/3	**Department:**	Oto-Rhino-Laryngology
Credit:	4/-	**Form of Exam:**	Exam/Signature

	Lecture	**Practice**
*	Oto-rhino-laryngology in medicine.	Examination equipment in oto-rhino-laryngology.
*	History of oto-rhino-laryngology.	
*	Anatomy and physiology of the ear.	Practice in use of forehead mirror and ear speculum.
*	Diseases of the external ear and their treatment.	Examination of the external auditoy meatus and eardrum.
*	Acute inflammation of the middle ear.	Practice in cleaning the external meatus. Diseases of the external meatus. Ear drops. Examination of the Eustachian tube.
*	Complications of acute otitis media.	Demonstration of eardrum perforations and various ear diseases.
*	Non-suppurative diseases of the middle ear.	X-ray, CT, MR pictures of the ear.
*	Chronic otitis media. Complications of chronic otitis media.	Examination of hearing by means of tuning forks.

* Reconstruction of the hearing mechanism.	Measurement of hearing loss. The usual method of recording hearing by audiometer. Demonstration of various types of pure-tone audiograms. Hearing aids.
* Anatomy of the inner ear. The vestibular and cochlear system.	Demonstrations of otoneurological examinations.
* Examination of hearing and the vestibular system.	Clinical examination of the nose and nasal cavity. Practice in using nasal speculum. Posterior rhinoscopy. Demonstration of diseases of nasal cavity. Treatment of nasal injuries.
* Diseases of the inner ear: toxic damage to the ear, inflammatory and vascular lesions of the inner ear. Acoustic trauma. Meniere's disease.	Haemorrhage from the nose. Treatment of epistaxis.. Demonstration of Bellocq pack.
* Diseases of the inner ear: acoustic neuroma, temporal bone fractures.	Treatment of sinusitis. Nasal drops. X-ray, CT, MR pictures of nasal sinuses. Demonstration of puncture of the maxillary sinus. Differential diagnosis of headache.
* Anatomy of the nose and nasal sinuses.	Examination of the mouth and pharynx. Demonstration of pharyngeal diseases.
* Diseases of the external nose and the nasal cavity.	Demonstration of tumors in the larynx and hypopharynx.
* Sinusitis. Treatment and complications. Fractures of the sinuses.	Examination of the larynx. Demonstration of laryngeal diseases. Anaesthesia in oto-rhino-laryngology.
* Haemorrhage from the nose. Tumors of the nose and paranasal sinuses.	Demonstration of patients after tracheostomy. Cleaning of tracheostomy tube.
* Anatomy of the pharynx. Diseases of the nasopharynx.	Demonstration of esophagoscopes and bronchoscopes. The method of introducing the naso-esophageal nutrition tube. Differential diagnosis of neck nodes in practice.
* Adenoid hyperplasia. Benign and malignant nasopharyngeal tumors.	
* Acute and chronic inflammatory diseases of the pharynx.	
* Acute and chronic tonsillitis. Peritonsillar abscess and complications.	
* Indications of tonsillectomy. Tumors of mesopharynx.	
* Functional anatomy of the larynx. Acute and chronic diseases of the larynx.	
* Injuries of the larynx. Paralysis of the larynx.	
* Tumors of the hypopharynx and the larynx.	
* Classifications of malignant laryngeal tumors.	
* Treatment of laryngeal tumors.	
* Diseases of the oesophagus and the inferior respiratory tract.	
* Differential diagnosis of neck nodes.	

Pediatrics I.

Semester:	9th	**Code:**	AOK-OAK311/OAK312/OAK313
Course type:	Lecture/Practice/Seminar	**Category:**	compulsory
Hours/week:	1/2/2	**Department:**	Pediatrics
Credit:	-/-/5	**Form of Exam:**	Signature/Signature/Term Mark

week	**Lecture**	**Practice/Seminar**
1.	Paediatric History Taking and Physical Examination Age- and developmentally-appropriate history How to perform a paediatric examination (to include respiratory, cardiovascular, gastrointestinal, central and peripheral nervous system, musculoskeletal, skin, eyes, ears/nose/throat) Newborn examination	pBLS – Paediatric Basic Life Support Prioritise the care of a sick child - Use a systematic approach (ABCDE) to the care of a sick child - Demonstrate basic airway management (including appropriate airway positioning, bag-valve mask ventilation) - Deliver age-appropriate cardio-pulmonary resuscitation (pBLS) - Recognise the need for help and identify how to obtain it
2.	General Paediatrics – Growth Normal growth in childhood (newborn-adolescence) Measurement; Puberty; Plot and interpret a growth chart; Main physiological changes from birth to adulthood	Skills/Procedures Common practical procedures in children (venepuncture, urinary catheterisation, lumbar punture)
3.	General Paediatrics – Development Developmental milestones of children 0-5 years ; Developmental screening and assessement; Age- and developmentally-appropriate history and examination	General growth and development Normal growth in childhood (newborn-adolescence) Plot and interpret a growth chart Main physiological changes from birth to adulthood Developmental milestones of children 0-5 years Developmental examination in a child under 5 years
4.	General Paediatrics – Nutrition Normal feeding and eating behaviour from birth to adulthood *(Breastfeeding, Formula feeding, Principals of normal nutrition of childhood)*	Nutrition, Feeding Infant feeding Failure to thrive Malnutrition Obesity
5.	Laboratory and Microbology in Paediatrics Laboratory and microbiological investigations in Paediatric conditions Common (hematological and biochemistry) laboratory tests in children – normal values	Fluid balance Dehydration Fluid therapy in emergency care - Types of intravenous fluids, Calculate intravenous fluids (bolus and maintenance) etc. Shock management
6.	Acid base and electrolyte disorders Common acid base disorders and common causes in Paediatrics Interpret blood gases in children – normal values	Recognition of a sick child, Paediatric Emergencies Assessment of a seriously ill child Respiratory failure Sepsis Anaphylaxis ALTE

7.	Pharmacology/Drugs in Paediatrics Prescription by weight, age and body surface area in children Differences in drug metabolism between infants, children and adults Special routes of drug administration in children e.g. inhalation with babyhaler, suppository etc. Calculate (with given doses): Common analgesics, Common antibiotics, Oral rehydration solution, Common asthma medications (eg. beta-2 agonists, steroids), Common emergency drugs (eg. adrenaline for anaphylaxis)	Preventive paediatrics - Screening and Immunisation Role of prevention in Paediatric population Vaccinations, immunisation programme in Hungary Neonatal screening
8.	Antibiotic therapy in Paediatrics Common paediatric bacterial infections, approporiate antibiotic use	Infectious diseases Common viral infections in Pediatrics Common bacterial infections in Pediatrics Neuroinfections Management of a febrile infant TBC
9.	Paediatric Radiology Ordering Radiology Investigations in Paediatrics, Radiation, Radiation Free Imaging, Neuroimaging/Imaging of Musculoskeletal/GIT/Urogenital Tract, Interventions	Paediatric Surgery Congenital malformations of the gastrointestinal tract (Esophageal atresia, TOF, Duodenal atresia, Intestinal atresia, Anus atresia, Malrotation, Hirschprung disease) Acute abdomen (Appendicitis, Intussusception, Volvulus) Congenital diaphragmatic hernia Acute scrotum, Inguinal hernia, Hydrocele, Undescended testis Surgical management of congenital urinary tract malformations (PUJ obstruction, VUR, hypospadias)
10.	Newborn, infant Physiologic characteristics of the newborn, term and preterm infants Maternal diseases/drugs affecting the newborn (diabetes, gestational diabetes, lifestyle (alcohol, drugs, smoking), hypertension, chronic conditions)	Paediatric Emergencies (Trauma/Accident) Paediatric accidental injuries *(Burn injury primary care, Airway and GI foreign body management, Road Accidents)*
11.	Toxicology Poisoning (General principles of toxicology)	Neonatology 1. (Neonatal Care in Delivery Room/Resuscitation) Adaptation to extrauterine life; Delivery room care Routine examination of the newborn infant Neonatal Resuscitation
12.	New Trends in Paediatrics	Child Protection Risk factors for child maltreatment Types of child abuse and neglect Symptoms, signs and red flags of child maltreatment Procedure for raising concerns about child maltreatment

13.	Ethics in Paediatrics, Communication	Child and Adolescent Psychiatry
14.	Child and Adolescent Psychiatry	

Pediatrics II.

Semester:	10th	**Code:**	AOK-OAK314/AOK-OAK315
Course type:	Practice/Seminar	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Pediatrics
Credit:	-/4	**Form of Exam:**	Signature/Term Mark

week	**topic**
1.	Neonatology 2. Respiratory diseases of the newborn *(TTN, MAS, infection (sepsis, pneumonia), RDS, congenital malformations)* Jaundice - physiologic *(breast milk, breastfeeding)*, pathologic *(AB0/Rh incomp)* Neonatal Sepsis *(Early and late onset)*, Congenital infections Neonatal convulsion *(Metabolic, Congenital malformation, Bleeding/Ischaemia, Infection, Hypoxic ischemic encephalopathy)* Summary of problems with preterm babies *(RDS, Intracranial hemorrhage, Necrotizing enterocolitis, Persistent ductus arteriosus, Bronchopulmonary dysplasia, Retinopathy of prematurity (ROP))*
2.	Gastroenterology Problems of infant feeding *(Gastro-oesophageal reflux disease, Pyloric stenosis)* Malabsorption/malnutrition syndromes *(Inflammatory bowel disease* *Food adverse reactions);* Constipation
3.	Respiratory disorders 1 Upper respiratory tract infection *(pharyngitis, laryngitis, epiglottitis, otitis media)* Communitiy acquired bacterial pneumonia in children; Cystic fibrosis
4.	Respiratory disorders 2 Pulmonary physiology, pulmonary function tests Wheeze *(Viral induced wheeze, obstructive bronchitis, asthma bronchiale, bronchiolitis)* Acute therapy of respiratory distress *(O_2 delivery, non-invasive, invasive ventillation)*
5.	Diabetes in childhood Diabetes mellitus; Diabetic ketoacidosis, treatment; Evaluation of hypoglycemia in childhood
6.	Endocrinology Endocrine emergencies; Thyroid disorders; Evaluation of growth retardation, short stature Disorders of sexual differentiation and puberty (precocious/delayed)
7.	Nephrology Congenital urinary tract malformations; Urinary tract infection in children Nephrosis syndrome, Nephritis syndrome; Acute kidney injury; Hypertension; Enuresis
8.	Cardiology Symptoms and differential diagnosis of congenital heart defects; Hypertension Arrhythmias *(SVT, Bradycardia, VT, VF);* Cardiogenic shock *(Diagnosis, Differential diagnosis, Therapy)*
9.	Hematology Anaemia in paediatrics Bleeding disorders, coagulopathies in children, Immune thrombocytopenic purpura (ITP) Acute leukemia in pediatrics (ALL), lymphoma
10.	Oncology Most common solid tumors in Peadiatrics (CNS tumours, Lymphoma, Neuroblastoma, Wilms tumour); Principles of treatment of malignancies, Side effects of treatment, Supportive care
11.	Neurology Differential diagnosis of a floppy infant *(HIE, Haemorrhage, SMA, Myopathies, Metabolic)* Hydrocephalus

Headache in childhood *(Migrain, Secondary headaches)*
Seizures in childhood *(Febrile seizure, Epilepsy, Acute symptomatic seizure)*
Demyelinating of the central nervous system *(Guillain-Barré syndrome)*

12. Metabolic Disorders, Genetics
General rules of inborn errors of metabolism; Newborn screening of inherited metabolic disorders
Chromosomal abnormalities (Down, Klienefelter, Turner syndrome)
13. Immunology
Classification, presentation and investigation of immun defects
14. Case based discussions/Consultation

Pharmacology and pharmacotherapy II.

Semester:	7th	**Code:**	AOK-OAK291/AOK-OAK292
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	4/2	**Department:**	Pharmacology
Credit:	2/-	**Form of Exam:**	Comprehensive Exam/ Signature

week	**Lecture**	**Practice**
1.	Opioid analgesics. Anxiolytics. Sedatohypnotics.	Requirements.
2.	Antiepileptic drugs. General anaesthesia.	Anxiolytics, sedatohypnotics.
3.	Antipsychotic drugs. Antidepressants.	Opioids, antiepileptic drugs.
4.	Pharmacotherapy of neurodegenerative disorders. Central muscle relaxants. Therapy of migraine.	General anaesthesia, antiparkinson drugs.
5.	Treatment of bleeding disorders and anaemia, fibrinolytics. Anticoagulants. Inhibitors of platelet aggregation.	Antipsychotics and antidepressants.
6.	Diuretic drugs. Antihypertensive drugs.	MTO I. - Drugs acting on the CNS.
7.	Pharmacotherapy of hyperlipoproteinemias. Pharmacotherapy of diabetes mellitus.	Drugs acting on the blood. Therapy of migraine.
8.	Antiarrhythmic drugs. Pharmacotherapy of acute and chronic coronary syndrome.	Therapy of hyperlipoproteinemias and hypertension.
9.	Therapy of heart failure I. Therapy of heart failure II.	Pharmacotherapy of diabetes, angina pectoris.
10.	Pharmacology of male and female sexual hormones. Contraceptives. Pharmacotherapy of infertility and erectile dysfunction.	Pharmacotherapy of heart failure and arrhythmias.
11.	Drugs used in the chemotherapy of neoplastic diseases I. Drugs used in the chemotherapy of neoplastic diseases II.	MTO II. - Drugs acting on the CVS. Pharmacology of sexual hormones. Contraceptives.
12.	Drugs that influence the GIT I. Drugs that influence the GIT II.	Pharmacotherapy of infertility and erectile dysfunction. Therapy of neoplastic diseases.

13.	Toxicology I. Toxicology II.	Discussion of drugs that influence the GIT.
14.	Principles of immunopharmacology. Discussion.	MTO III. - Pharmacology of sexual hormones, contraceptives, infertility, erectile disfunction, neoplastic diseases, GIT and toxicology. Discussion.

Pharmacology Cases I.

Semester:	8th	**Code:**	AOK-OAKV271
Course type:	Practice	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Pharmacology
Credit:	2	**Form of Exam:**	Evaluation(5)

week **Topic:**

1. Requirements
2. Pharmacodynamics: drug-receptors, dose-response curves
3. Pharmacodinamic interactions
4. Pharmacokinetics I.
5. Pharmacokinetics II.
6. Pharmacokinetic question of repeated drug administration
7. Parasympathomimetics
8. Parasympatholytics, case reports
9. Sympathomimetics
10. Sympatholytics
11. Review test of pharmacology of ANS I.
12. Review test of pharmacology of ANS II.
13. Pharmacology of NSAIDs. Case report: Aspirin and Reye syndroma.
14. Discussion.

Pharmacology Cases II.

Semester:	9th	**Code:**	AOK-OAKV272
Course type:	Practice	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Pharmacology
Credit:	2	**Form of Exam:**	Evaluation(5)

week **Topic:**

1. Requirements
2. Pharmacology of opioids.
3. Pharmacotherapy of pain. Case report.
4. CNS depressants. Case reports.
5. Review test questions I.
6. Review test questions II.
7. Parkinson’s disease. Case report. Review test questions.
8. Antipsychotics. Case report. Review test questions.
9. Review test questions III.
10. Pharmacotherapy of hypertension. Case report. Review test questions.
11. Pharmacotherapy of angina pectoris. Case report. Review test questions.
12. Pharmacotherapy of heart failure. Case report. Review test questions.

13. Review test questions IV.
14. Discussion.

Psychiatry I.

Semester:	9th	**Code:**	AOK-OAK441/AOK-OAK442
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/1	**Department:**	Psychiatry
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week	**Lecture**	**Practice**
1.	Introduction to Psychiatry	Psychiatric patient examination related to the lecture
2.	Psychiatric Interview, Psychopathology I.	Psychiatric patient examination related to the lecture
3.	PsychopathologyII.	Psychiatric patient examination related to the lecture
4.	ADHD, PTSD	Psychiatric patient examination related to the lecture
5.	Disorders of Attachment	Psychiatric patient examination related to the lecture
6.	Anxiety Disorders	Psychiatric patient examination related to the lecture
7.	Mood Disorders	Psychiatric patient examination related to the lecture
8.	Bipolar Affective Disorders	Psychiatric patient examination related to the lecture
9.	Suicide	Psychiatric patient examination related to the lecture
10.	Sleep Related Disorders	Psychiatric patient examination related to the lecture
11.	Somatoform Disorders	Psychiatric patient examination related to the lecture
12.	Forensic and Ethical Issues in Psychiatry	Psychiatric patient examination related to the lecture
13.	Obsessive and Compulsive and Related Disorders	Psychiatric patient examination related to the lecture

Psychiatry II.

Semester:	10th	**Code:**	AOK-OAK443/AOK-OAK444
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/1	**Department:**	Psychiatry
Credit:	3/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	Neurocognitive Disorders	Neurobiological Basis of Psychotherapy
2.	Behavioral and Psychological Symptoms of Dementia	First Interview, Psychotherapy Contract, Common Effective Factors of Psychotherapy
3.	Delirium Syndromes	Humanistic – Patient Centered Therapy
4.	Alcohol Use Disorders	Cognitive Behavioral Therapy

5.	Substance Related and Addictive Disorders	Psychotherapy in Addictology
6.	Schizophrenia I.	Psychotherapy in Psychosis
7.	Schizophrenia II.	Opportunities of Group Therapies
8.	Trauma- and Stressor-Related Disorders	Crisis Intervention Approaches
9.	Personality Disorders I.	Expressive and Supportive Psychodynamic Therapies
10.	Personality Disorders II.	Relaxation, Symbol and Art Therapies
11.	Feeding and Eating Disorders	Hypnosis, Suggestive Communication
12.	Psychopharmacology III. Pharmacotherapy of Addictions and Mood Stabilizers	Psychopharmacology IV. Pharmacotherapy of Anxiety and Sleep-Related Disorders
13.	Non-Pharmacological Biological Therapies I.	Non-Pharmacological Biological Therapies II.

Public Health and Preventive Medicine I.

Semester:	7th	**Code:**	AOK-OAK371/AOK-OAK372
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Public Health
Credit:	3/-	**Form of Exam:**	Exam/Signature

week	**Lecture**	**Practice**
1.	The scope and goal of preventive medicine and public health. The levels of prevention.The global health situation; priorities in global health. Measuring health status of apopulation; the theoretical basis of demography.	Requirements of the semester. Health determinants and prevention. Health promotion.
2.	Measuring health status of a population; the theoretical basis of epidemiology. Health status of high-risk populations.	Demographic indexes and their use. Measuring mortality; standardization. Analysis of statistical data-bases.
3.	Epidemiology of cardiovascular diseases. Epidemiology of chronic respiratory diseases.	Measuring morbidity. Epidemiological studies: ecological, cross sectional, case-control and cohort studies, interventionalstudies. Planning and preparation of epidemiological surveys.
4.	Epidemiology of malignant tumors. Epidemiology of metabolic and musculoskeletal diseases.	Practical aspects of the prevention of cardiovascular diseases.
5.	Epidemiology of mental disorders, suicide and accidents I-II.	The role of screening in the prevention of selected chronic diseases.
6.	Nutrition in public health. Basics of nutrition. Malnutritions. Epidemiology of chronic gastrointestinal diseases.	Measuring nutritional status. Dietary guidelines, healthy nutrition. The role of diet in the prevention of diet-related diseases: CVD, diabetes mellitus.
7.	Food quality and safety.	The role of diet in the prevention of diet-related diseases: obesity, tumors and osteoporosis.

8.	Epidemiology of smoking.	The role of physical activity in the prevention of chronic diseases.
9.-11.	Clinical practice	Clinical practice
12.	Epidemiology of alcohol and drug consumption.	Smoking cessation guidelines for health professionals.
13.	Structure and operation of health systems.	Prevention of alcohol and drug consumption. Lifestyle interventions.
14.	Health and health care in the family (mother, infant, child, adolescent).	Quality improvement in health care, quality tools in PDCA cycle.

Public Health and Preventive Medicine II.

Semester:	8th	**Code:**	AOK-OAK373/AOK-OAK374
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Public Health
Credit:	3/-	**Form of Exam:**	Comprehensive Exam/Signature

week	**Lecture**	**Practice**
1.	Principles of communicable diseases epidemiology. Global burden of communicable diseases. Epidemiology of airborne diseases I-II.	Requirements of the semester. Control of communicable diseases: sterilization, disinfection, disinsection, deratisation. Bestpractice for hand hygiene.
2.	Epidemiology of enteric diseases I-II.	Control of communicable diseases: vaccination. Epidemic and pandemic preparedness.
3.	Epidemiology of hematogenic and cutaneousdiseases. Epidemiology of sexually transmitted diseases.	Practical aspects of the prevention of selected airborne diseases.
4.	Epidemiology of healthcare associated infections (infection control, nosocomial surveillance). Global problem of antimicrobial resistance.	Practical aspects of the prevention of selected foodborne diseases and hepatitis infections.
5.	Epidemiology of zoonoses, transmissible spongiform encephalopathies; emerging and re-emerging diseases. The effect of climate change on the human health and environment.	Practical aspects of the prevention of tick-borne diseases, tetanus, lyssa. Case studies about healthcare associated infections.
6.	Air pollutants and their effect on human health. The quality of water/drinking water and its effect on human health I.	Prevention of outdoor and indoor air pollution and their health damaging effects.
7.-9.	Clinical practice	Clinical practice
10.	Spring holiday	Spring holiday

11.	Spring holiday	Public health responses for climate change.
12.	The quality of water/drinking water and its effect on human health II. Sewage, soil pollutions, waste management.	Environmental epidemiology: examining health-damaging effects of surface and drinking water pollution.
13.	Environment and occupation related diseases caused by chemical exposures.	Chemical safety, risk assessment. Case studies about health effects of certain chemicals.
14.	Occupational health. Occupational diseases caused by physical (temperature, pressure, vibration, radiation) exposures.	The burden of occupational morbidity and mortality. Practical aspects of occupational health
15.	Occupational diseases caused by biological, ergonomic and psychosocial exposures. Occupational pneumoconiosis.	Health effects of workplace-related exposures: occupational hazards in health care.

Pulmonology

Semester:	7th	**Code:**	AOK-OAK451/AOK-OAK452
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Pulmonology
Credit:	2/-	**Form of Exam:**	Oral Exam/Signature

week	**Lecture**	**Practice**
1.	Pulmonological diagnostics	Morphology and roentgen anatomy of lung. Physical examination.
2.	Bronchial asthma, COPD (Obstructive respiratory disorders, spirometry)	Characteristic X-ray findings.
3.	Differential diagnosis of cough, dyspnea and chest pain	Chronic bronchitis. "Pink puffers" and "blue bloaters".
4.	Pneumonia (COVID), Lung abscess, Tuberculosis	Lung function tests. Pharmacospirometry.
5.	Asthma bronchiale	Diagnosis of asthma bronchiale. Aspecific provocation tests, skin test, IgE.
6.	Malignant lung tumors	Bronchoscopy, Thoracoscopy, mediastinoscopy.
7.	Interstitial lung diseases (Restrictive lung disorders, blood gas)	Radiographic findings of lung cancer. Transthoracic needle-biopsy. Cytology. TNM classification.
8.	Pulmonary embolism, Pulmonary hypertension, Cor pulmonale	Radiographic findings of pneumonia. Sputum examination. Treatment.
9.	Cystic fibrosis, Lung transplantation, Smoking cessation	Pletysmography. Diffusing capacity. Cardiopulmonary exercise test.
10.	Sleeping disorders, Respiratory failure, ECMO, Respiratory rehabilitation	Aetiology of pleural effusions. Aspiration of the pleural effusion. Laboratory findings.
11.	Diseases of the pleura and the mediastinum	X-ray findings in tuberculosis.

12.	The frontier areas of pulmonology (cardiology, immunology, infectology, neurology, orthopedics, urology, gynecology, ophthalmology, etc.)	Sputum examination in tuberculosis. Tuberculin test. Treatment. Cor pulmonale. Differential diagnosis of disseminated lung diseases.

Radiology I.

Semester: 7th
Course type: Lecture/Practice
Hours/week: 1/1
Credit: 2/-
Code: AOK-OAK461/AOK-OAK462
Category: compulsory
Department: Radiology
Form of Exam: Evaluation(5)/Signature

week	**Lecture**	**Practice**
1.	Imaging diagnostics: role, development, present and future	Imaging diagnostics: role, development, present and future
2.	Conventional radiology	Conventional radiology
3.	Contrast agents	Contrast agents
4.	Ultrasound	Ultrasound
5.	Computed tomography and magnetic resonance imaging	Computed tomography and magnetic resonance imaging
6.	Interventional radiology	Interventional radiology
7.	Gastroenterology I.(esophagus, stomach, duodenum)	Gastroenterology I.
8.	Gastroenterology II. (mesenteric small bowels large intestine)	Gastroenterology II.
9.	Joints	Joints
10.	Bones	Bones
11.	Chest I. (lung)	Chest I. (lung)
12.	Chest II. (mediastinum)	Chest II. (mediastinum)
13.	Heart and peripheric vessels	Heart and peripheric vessels
14.	Head and neck	Head and neck

Radiology II.

Semester: 8th
Course type: Lecture/Practice
Hours/week: 1/1
Credit: 2/-
Code: AOK-OAK463/AOK-OAK464
Category: compulsory
Department: Radiology
Form of Exam: Exam/Signature

week	**Lecture**	**Practice**
1.	Radiology of the breasts and female reproductive system	Radiology of the breasts

2.	Radiology of the liver	Radiology of the liver
3.	Radiology of the biliary tract	Radiology of the biliary tract
4.	Radiology of the pancreas & spleen	Radiology of the pancreas & spleen
5.	Neuroradiology I. (image modalities, congenital anomalies and vascular lesions of the head)	Neuroradiology I.
6.	Neuroradiology II. (Tumours, infections, trauma of the head)	Neuroradiology II.
7.	Neuroradiology III. (Spinal diseases)	Neuroradiology III.
8.	Pediatric radiology	Pediatric radiology
9.	Radiology of the kidneys & the urinay tract	Radiology of the kidneys & the urinay tract
10.	Radiology of the retroperitoneal space	Radiology of the retroperitoneal space
11.	Radiology of the pelvis and the male reproductive organs	Radiology of the pelvis and the male reproductive organs
12.	Radiological aspects of emergency	Radiological aspects of emergency
13.	Radiological aspects of trauma	Radiological aspects of trauma

Rheumatology

Semester:	7th, 9th	**Code:**	AOK-OAKV551
Course type:	Lecture	**Category:**	compulsory
Hours/week:	2	**Department:**	Rheumatology
Credit:	2	**Form of Exam:**	Evaluation(5)

The course „Rheumatology" covers the whole spectrum of musculoskeletal diseases including the immune-mediated internal medical systemic inflammatory diseases. The aim of the course is to provide a more detailed and practical overview of various types of arthritis and systemic autoimmune diseases, in addition to the limited topics covered within the clinical immunology section of the Internal Medicine course (10th semester).
The topics are delivered in interactive, seminar-like lectures and in practicals at the Department of Rheumatology and Immunology. Special emphasis is put on „hands-on" training at bedside. The lectures are interactive, focus on live or slide-based patient presentation, and on critical thinking, decision-making and differential diagnostic thinking.
The immunological basis of the diseases, novel treatment paradigms, the principles of immunosuppressive therapy, the innovative biological therapies, and the systematic diagnostic work-up of patients with arthritis, and other immune-mediated manifestations, such as Raynaud's phenomenon, skin, renal, pulmonary, neurological, etc. involvements typical of systemic autoimmune diseases are detailed within the course „Rheumatology".

topic

* Lecture – Introduction. Systemic lupus erythematosus, antiphospholipid syndrome; László Kovács
* Practical – max. 20 students
* Lecture – Rheumatoid arthritis, spondylarthritis; Attila Balog
* Practical – max. 20 students

* Practical – max. 20 students
* Practical – max. 20 students
* Lecture - Systemic sclerosis (scleroderma), Systemic vasculitides; László Kovács
* Practical – max. 20 students
* Lecture - Sjögren's syndrome, polymyositis, dermatomyositis; Attila Kovács
* Practical – max. 20 students
* Practical – max. 20 students
* Practical – max. 20 students
* Consultation; László Kovács

Social and Health Policy

Semester:	8th or 10th	**Code:**	AOK-OAKV591
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Public Health
Credit:	2	**Form of Exam:**	Evaluation(5)

week	topic
1.	Introduction to social policy. The aim and task of social policy. The basic values and principles of social policy.
2.	Social policy in welfare states. The structure and function of social policy in the European Union. Social policy indeveloping countries
3.	Poverty, deprivation, patterns of inequalities. Social policies towards families.
4.	Social policy of high-risk populations (immigrant, ethnicity, unemployed, disabled, chronic diseased, elderly).
5.	Introduction to health policy. The influence of international organisations (WHO, WorldBank etc.) on national health policies.
6.	Health and health policy in the European Union. The basic principles of health care systems. Health care services in selected European countries.
7.	Health care services in North American countries. Human resource management in health care.
8.	Quality assurance in health care.
9.	The evaluation of the social and health care reforms from the beginning of '90s – world tendencies (Final evaluation).

Sports Medicine

Semester:	7th	**Code:**	AOK-OAKV561
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Dep. of Sports Medicine
Credit:	2	**Form of Exam:**	Evaluation (5)

1. Introduction

2. Sport physiology, exercise prescription for training, recreation and fitness

3. Sport injuries I.
   Sport injuries II.

4. Overuse sport syndromes

5. Doping

6. The pediatric athletes and sport cardiology

7. Clinical and morphological basis of sport related sudden deaths (introductory lecture)
   Non-arrhytmogenic cause of sudden cardiac death

8. Internal medicine cardiology in sport II.
   Sudden cardiac death in athletes: clinical and biological principles

9. Impairment of ventricular repolarisation reserve implications for sudden cardiac death in athletes

10. Pulmonary functional tests in athletes. Adaptation of ventilation to exercise.

11. Nutrition and sport I.
    Introduction to Sport Nutrition

12. Nutrition in Sport II.
    Sportperformance enhancement athletes
    diet recommendations

13. The positive and negative effects on performance
    of athletes of myofascial adoptibility

Surgery I.

Semester:	7th	**Code:**	AOK-OAK471/AOK-OAK472
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Surgery
Credit:	3/-	**Form of Exam:**	Evaluation(5)/Signature

week	**Lecture**	**Practice**
1.	Benign diseases of the breast, Surgery of the breast cancer	
2.	Surgery of the breast cancer, Surgery of the thyroid gland	
3.	Oncoplastic breast surgery, Surgery of the adrenal gland	
4.	Surgery of the mediastinum	
5.	Surgery of the thorax	
6.	**BLOCK PRACTICE**	Active participation in examination of patients and in the daily work on different units. Taking part in operations as 2nd assistant, and observation of operations. Case discussion every day: 12.00-13.00h.

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8.	**BLOCKP RACTICE**	Active participation in examination of patients and in the daily work on different units. Taking part in operations as 2nd assistant, and observation of operations. Case discussion every day: 12.00-13.00h.
9.	**ALL SAINTS DAY (Break)**	
10.	Surgery of the lung cancer	
11.	Vascular surgery	
12.	Vascular surgery	
13.	Cardiac surgery	
14.	Cardiac surgery	

Surgery II.

Semester:	8th	**Code:**	AOK-OAK473/AOK-OAK474
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Surgery
Credit:	3/-	**Form of Exam:**	Evaluation (5)/Signature

week	**Lecture**	**Practice**
1.	Benign and malignant diseases of the oesophagus I. Benign and malignant diseases of the oesophagus II.	
2.	Malignant diseases of the stomach, Benign diseases of the stomach	
3.	Surgery of the liver I Surgery of the liver II	
4.	Surgery of the pancreas I. Surgery of the pancreas II.	
5.	Surgery of the gallbladder and biliary tract I. Surgery of the gallbladder and biliary tract II.	
6.	Minimal invasive surgery, Surgery of the spleen	
7.	Benign diseases of the large intestine	
8.	Malignant diseases of the colon and rectum	
9.	Proctology, the care of intestinal stoma wearing patients	
10.	SPRING BREAK	
11.	Surgery of the thyroid gland, Endocrine Surgery	

12.	**BLOCK PRACTICE**	Active participation in examination of patients and in the daily work on different units. Taking part in operations as 2nd assistant, and observation of operations. Case discussion every day: 12.00-13.00h.
13.	**BLOCK PRACTICE**	Active participation in examination of patients and in the daily work on different units. Taking part in operations as 2nd assistant, and observation of operations. Case discussion every day: 12.00-13.00h.
14.	**BLOCK PRACTICE**	Active participation in examination of patients and in the daily work on different units. Taking part in operations as 2nd assistant, and observation of operations. Case discussion every day: 12.00-13.00h.

Surgery III.

Semester:	9th	**Code:**	AOK-OAK475/AOK-OAK476
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/1	**Department:**	Surgery
Credit:	2/-	**Form of Exam:**	Evaluation(5)/Signature

week	**Lecture**	**Practice**
8.	Appendicitis, Emergency colorectal surgery	Demonstration, investigation of surgical patients. Consultation about the topics of lectures
9.	ALL SAINTS DAY	
10.	Peritonitis	Demonstration, investigation of surgical patients. Consultation about the topics of lectures
11.	Ileus	Demonstration, investigation of surgical patients. Consultation about the topics of lectures
12.	Differential diagnostics of acute abdomen Most frequent interventions in the gastrointestinal surgery	Demonstration, investigation of surgical patients. Consultation about the topics of lectures
13.	Surgery of the thyroid gland, endocrine surgery	Demonstration, investigation of surgical patients. Consultation about the topics of lectures
14.	Surgical immunology, organ transplantation	Demonstration, investigation of surgical patients. Consultation about the topics of lectures

The Clinical Basics of Aviation and Space Medicine

Semester:	8th or 10th	**Code:**	AOK-OAKV061
Course type:	Lecture	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Aviation and Space Medicine
Credit:	2	**Form of Exam:**	Evaluation(5)

week	topic
1.	The aeromedical qualification system in civilian and military practice.
2.	Functional diagnostic examinations in practical aviation medicine.
3.	Aeromedical problems in pulmonology and gastroenterology.
4.	The cardiological aspects of aviation medicine.
5.	Excess temperature in aviation.
6.	Neurological and psychiatricalproblems in aviation medicine.
7.	Ophtalmology in aviation medicine.
8.	Emphasized aeromedical issues in oto-rhino-Iaryngology.
9.	The comparison of experiences gained in the MiG-29 and the Gripen.
10.	The issues of alcoholism in aviation medicine.
11.	Rheumatological aspects of aviation.
12.	The medical background of the International Space Station (ISS). Medical care during long-term space flights.
13.	Energy drinks in aviation?

The Language of Effective Doctor-Patient Communication I.

Semester:	7th or 9th	**Code:**	AOK-OAKV621
Course type:	Practice	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Term Mark

week	Lecture	Practice
1.	An introduction to physician – patient communication 1	An overview of communication. Identifying the elements that make up communication
2.	An introduction to physician – patient communication 2	The patient centered approach: patient friendly language in history taking, instructing patients during examinations and discussing treatment options.
3.	Gastroenterology 1	Receiving patients: greeting them and putting them at ease. Introducing yourself as the attending physician and explaining your role.
4.	Gastroenterology 2	The presenting complaint. Encouraging patients to describe their problems in their own words.
5.	Gynecology and obstetrics 1	Asking for history of menstruation Encouraging withdrawn patients to speak
6.	Gynecology and obstetrics 2	Taking obstetric history: previous pregnancies, complications, deliveries, asking for present complaints
7.	Orthopedics	Patient's past medical history. Discussing family medical history. Taking effective notes during the interview.

8.	Endocrinology	Explaining medical terminology to a patient Updating patient notes
9.	Surgery 1	Giving results: explaining results to patients, giving a prognosis
10.	Surgery 2	Planning surgical treatment: explaining treatments/ surgical interventions to a patient, discussing options
11.	Surgery 3	Describing benefits and side effects, negotiating treatment Informed decision making
12.	Pulmonology	Delivering bad news Writing concise and accurate notes
13.	Dental care	Preparing and reassuring the patient during the examination. Negotiating the treatment.
14.	Test/exam	

The Language of Effective Doctor-Patient Communication II.

Semester:	8th or 10th	**Code:**	AOK-OAKV622
Course type:	Practice	**Category:**	compulsory elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Term Mark

week	**Lecture**	**Practice**
1.	Cardiology	Enquiring about patient's social history. Asking about life-style and environmental health
2.	Anesthesiology and intensive care	Anesthesiological assessment of a patient Describing types of anesthesia Postoperative care
3.	Oncology	Educating and counseling patients and their families Revision of the written documentation of patient care
4.	Dermatology	Discussing treatment options Showing sensitivity and respect to patients
5.	Pediatrics 1	Communicating with children and adolescents. Establishing and developing rapport with a child.
6.	Pediatrics 2	Reassuring a child. Child-friendly instructions. Asking about substance use.
7.	Psychology	Encouraging withdrawn patients to speak. Calming aggressive or angry patients.
8.	Neurology 1	Reassuring a patient or relative. Showing empathy.
9.	Neurology 2	Techniques for communicating with patients with neurological problems. Language to show sensitivity.
10.	Rheumatology	Encouraging patients to express their fears and concerns. Giving a prognosis.

11.	Oto-rhino-laryngology	Summarizing and structuring the interview Communicating with elderly patients
12.	Ophthalmology	Handling complaints Managing unrealistic requests (saying no)
13.	Urology	Encouraging patients to express their fears and concerns Advising on lifestyle
14.	Test/exam	

The role of sonography in critical care

Semester:	8th or 10th	**Code:**	AOK-OASZV681
Course type:	Seminar	**Category:**	elective
Hours/week:	Total 6	**Department:**	Anaesthesiology & Int. Ther.
Credit:	1	**Form of Exam:**	Evaluation (5)

topic

* Proper place for point- of-care sonography
  Ultrasound techniques and point-of-care sonography
  Basic properties of ultrasound machines, basic settings, transducers
* Basic US planes of the heart.
  Estimation of global left ventricular function and heart chamber dimensions.
  Suspicion and identification of acute myocardial infarction, acute valvular regurgitation, acute right-heart failure.
  Identification of pericardial effusion. US-guided pericardial tap (pericardiocentesis)
* Role of point-of-care sonography during management of polytraumatised patients: FAST („focused assesment with sonography for trauma")
  Suspicion and identifying of abdominal and pelvic fluid collections, hematomas, bleeding, urinary retention. US-guided abdominal tap.
  US-guided peritoneal tap
  Signs of atelectasis, infiltration
  Pleural effusion, pneumothorax
* Role of transoesophageal ECHO in the cardiac surgery anesthesia
  Examination of inferior vena cava, collaptibility, fluid responsiveness.
  US guided vascular interventions: insertion of a central venous cannula, US guided intervention: percutaneous tracheotomy
  Role of ultrasound in intracranial pathology (trauma, intracranial bleeding, intracranial pressure elevation): measurement of n. opticus diameter, role of transcranial Doppler ultrasound
* Ultrasound guided regional anaesthesia: basic principles.
  Regional anaesthesia of the thrunk, the upper and the lower limb, nerve blockades.
* Bedside practice

Thesis writing in English-academic language and style

Semester:	9th	**Code:**	AOK-OASZV641
Course type:	Practice	**Category:**	elective
Hours/week:	2	**Department:**	Med. Comm. and Translation
Credit:	2	**Form of Exam:**	Term Mark

topic

* General structure of the thesis, thesis types
* Scientific English style: objectivity, formality, complexity, explicitness, hedging, responsibility, and precision
* The Abstract
* The Introduction. Formulating hypotheses and research questions.
* Citation rules, in-text and end-text referencing.
* The Methods
* The Results. Tables, charts and other types of illustration.
* The Discussion.
* Other parts of the thesis: Acknowledgements, Appendix, Questionnaires, Conflict of interest, Declaration of ethics.
* Presenting the thesis. How to make oral presentations?

Traumatology

Semester:	10th	**Code:**	AOK-OAK511/AOK-OAK512
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	2/2	**Department:**	Traumatology
Credit:	3/-	**Form of Exam:**	Exam/Signature

week	Lecture	Practice
1.	Introduction to the evaluation and treatment of the trauma patient, primary – secondary survey Role of trauma care	Types of wounds, wound management. Types of sutures. The primary survey: physical examination of trauma patients (ABCs), imaging techniques. Interpretation of X-ray images.
2.	General principles of wound management and healing. Fracture healing, delayed bone healing, non-union. Pathological fractures. AO principals of fractures management	Classification of fractures, principles of fracture management. Introduction to trauma implants. Plaster technique.
3.	Upperextremity III. Wrist injuries, hand injuries. Hand infections. Replantation. Reconstructive procedures. Peripheral nerve injuries. Injuries of the brachial plexus.	Shoulder examination. Replacement techniques of shoulder dislocation (Artl, Hippocrates). Introduction to Gilchrist bandage. Examination of rotator cuff injuries.
4.	Upper extremity II. Distal humeral injuries, elbow injuries, forearm injuries.	Indications for functional and surgical treatment of surgical neck fractures of the humerus. Treatment options for humeral diaphysis fractures. X-ray presentation.
5.	Upper extremity I. Shoulder girdle injuries, proximal humeral injuries	Diagnosis of radius fractures, demonstration of closed reduction and plaster fixation. Practice of plaster technique, application of radius plaster. Indications for conservative and surgical treatment. X-ray presentation.
6.	Burn injuries.	Examination of the hand function. Demonstration of Moberg's scheme. Treatment options for tendon and nerve injuries.

7.	Special considerations (pregnant, elderly, pediatricpatients, PTSD)	Radiological presentation of scaphoideal fractures, carpal instabilities, treatment options.
8.	Craniocerebral injuries, spine injuries	Examination of pelvic and acetabulum fractures, options for temporary fixation of the pelvis. Transport of trauma patient with pelvic fracture. X-ray presentation.
9.	Torso trauma I. Chest injuries Torso trauma II. Abdominal trauma	Clinical diagnosis of femoral neck fractures. Examination of the hip joint. Patient examination. Treatment options for hip fractures. X-ray presentation.
10.	Torso trauma III. Pelvic fractures, acetabular fractures	Examination of the knee joint (Sternmann I-II, Böhler, McMurray, valgus-varus stress, anterior-posterior tableau symptom, Lachmann test). Diagnosis of meniscus injuries, treatment options. Cruciate ligament replacements.
11.	Polytrauma	Ankle joint examination. Functional anatomy of the ankle and foot. Principles of care for ankle fractures, ligament injuries. Diagnosis and treatment of calcaneal fractures. X-ray presentation.
12.	Lower extremity I. Proximal femoral region injuries, hip-, femoral shaft fractures. Traumatic hip displacement.	Neurological examination of head injury. Examination of brain nerves, sensory and motor functions. Neurological examination of spinal cord injury. Transport of the spinal cord injured.
13.	Lower extremity II. Distal femoral fractures, knee injuries, proximal tibia fractures	Examination of a polytrauma patient. Primary and secondary survey. Presentation of FAST. DCS and ETC principles. Examination of chest trauma, differential diagnosis of chest injuries.
14.	Lower extremity III. Injuries fractures around the ankle, foot injuries	Internal medicine examination of the injured, preparation of the patient for surgery in the ICU/ward. Importance of anaesthesiological investigations, consideration of surgical risk.

Travel Medicine

Semester:	8th or 10th	**Code:**	AOK-OASZV071
Course type:	Lecture	**Category:**	compulsory elective
Hours/sem:	30	**Department:**	Aviation and Space Medicine
Credit:	2	**Form of Exam:**	Evaluation(5)

Weeks	Topics
1.	**Principles of Travel Medicine** Lecturer: Dr. AgnesGuth-Orji
2.	**Caracteristics of passengers and (air) travellings** Lecturer: Dr. Harper Harry Nowrang
3.	**Diseases occuring during (air) travelling** Lecturer: Dr. Harper Harry Nowrang
4.	**Diving medicine** Lecturer: Dr. habil. SZABÓ Sándor András
5.	**Short and long haul flights effects from the passengers' point of view** Lecturer: Dr. Harper Harry Nowrang
6.	**Haemorrhagic fever diseases during travellings** Lecturer: Dr. AgnesGuth-Orji

Spring Break 2024.03.28.-04.02.

7. **Alcoholism, energy drinks and flying**
   Lecturer: Dr. Harper Harry Nowrang
8. **Water sports' and aero-sports' medicine**
   Lecturer: Dr. AgnesGuth-Orji
9. **Travel Advices for passengers, the Health problems of the returning passengers**
   Lecturer: Dr. AgnesGuth-Orji
10. **Extreme environmental temperatures, acclimatisation**
    Lecturer: Dr. Harper Harry Nowrang
11. **Diseases Independent from travelling, accidents and diseases that are worsening during travelling**
    Lecturer: Dr. AgnesGuth-Orji
12. **Hiking, skiing and the winter sports' medicine**
    Lecturer: Dr. Harper Harry Nowrang
13. **Space Turism, life on the Internatinal Space Station (ISS)**
    Lecturer: Dr. AgnesGuth-Orji
14. **Consultation**
    Lecturer: Dr.habil. Sándor Szabó

Urology

Semester:	9th or 10th	**Code:**	AOK-OAK521/AOK-OAK522
Course type:	Lecture/Practice	**Category:**	compulsory
Hours/week:	1/2	**Department:**	Urology
Credit:	2/-	**Form of Exam:**	Exam/Signature

week	Lecture	Practice
1.	Signs and symptoms urological diseases. Case history and the physical examination.	Case history, physical examination. Case presentation.
2.	Congenital anomalies.	Signs and symptoms of the urology patient. Case presentation.
3.	Urolithiasis.	Catheters and endoscopic instruments.
4.	Incontinency.	Endoscopy.
5.	Urotraumatology.	Percutaneous epicystostomy and nephrostomy.
6.	Acute and chronic renal failure.	ESWL.
7.	Nonspecific infections in the urology.	Uro-radiology.
8.	Tumors of the kidney and ureter.	Physical examinations of patients.
9.	Tumors of the bladder.	Laboratory investigations in the urology.
10.	Tumors of the external male genitalia.	Biopsy from bladder, prostate and testis.
11.	Tumors of the prostate.	Evaluation of sonography.
12.	BPH.	Physical examinations. Case reports.
13.	Acute urology.	Visit to operating theatre.
14.	Consultation	Acute urology

3D printing in life sciences

Semester:	spring semesters	**Code:**	AOK-OASZV771
Course type:	Lecture	**Category:**	elective
Hours/week:	2	**Department:**	Medical Physics
Credit:	2	**Form of Exam:**	Evaluation (5)

topics

1. The Role of 3D Printing in Life Sciences
2. Basics of 3D Printing: History, Technologies
3. Characterization of Applied Materials
4. Software I: CAD Design Software, 3D Scanning, Slicing
5. Software II: Introduction to Using 3D Slicer. Understanding the Basic Operation of the Software, Loading, Saving, Displaying Data.
6. Software III: Practical Implementation of Medical Image Segmentation and Registration with Examples. Anatomical Models.
7. 3D Printing (Operating Principle, Construction, Settings, Troubleshooting), Post-processing
8. Basics of Bioprinting
9. Characterization of Applied Materials in Bioprinting
10. Applications of 3D Printing in Drug Development
11. Quality Assurance Aspects of 3D Printing
12. Life Sciences Applications of 3D Printing. Future Development Directions, Innovations in the Field of 3D Printing
13. Visit to SZTE 3D Center

VOW TO BE MADE BY 1ST YEAR MEDICAL STUDENTS

I ……., /
as the student of the University of Szeged /
promise solemnly /
that I will observe and adhere /
to the rules and regulations of Hungary. /
Also I will observe and adhere /
to the rules and regulations /
of the University of Szeged /
and I am aware of these. /
I devote all my best efforts /
to go through with my studies here /
as efficiently as possible. /
I will give my teachers /
the respect and gratitude /
which is their due. /
I will respect the secrets /
which are confided in me /
even after the patient has died. /
I will maintain by all means in my power /
the honor and the noble traditions /
of the medical profession. /
I will devote my time and efforts /
to learn the progressive achievements /
of the basic and clinical sciences /
in order to use this knowledge /
for advancing medicine, /
for the care of my patients /
and to promote man's progress on Earth. /
I will use the University's computer network and tools /
solely for the purpose of studying /
and I will adhere /
to the data protection /
and network usage regulations. /
I make these promises solemnly,/
freely, /
and upon my honor. /

OATH TO BE TAKEN BY MEDICAL GRADUATES

I, …… name ……., / on this occasion / of my admission / to the ranks of the medical profession / swear on my honor / to devote my talents and knowledge / to the benefit of mankind.
I shall hold / University of Szeged in esteem.
I shall count those / who have instructed me / in the science of medicine / as my masters, / and shall show them / gratitude and respect at all times.
I shall impart my medical knowledge / and experience / to the generations of physicians to come. / I shall constantly labour / to increase my erudition / with a view to developing / and advancing medical science. / I shall practice my profession / conscientiously.
I vow to devote / my medical knowledge / to the protection of health / and to the benefit of the sick. / I shall treat / and advise patients / in the best of their interest / and to the best of my knowledge / and convictions / and I shall strive / to safeguard their health / against hazardous / and injurious effects.
I shall reveal no secret / concerning my fellow men / whether learned within my practice of medicine / or outside it / unless the law demands this.
I shall inform the patients / and also their relatives / if the patients' interest so requires / as to the patients' condition / and the method of treatment / in a timely and considerate manner. / I shall issue a medical certificate / only in accordance with my true convictions.
I shall conduct myself / towards the patients / my fellow physicians and the society as a whole, / in a matter befitting my calling as a physician. / I shall preserve the honor / of the medical profession / and its noble traditions.
I shall not be hampered / from fulfilling the duties of my profession / on the grounds of social, / political, / national, / racial / or religious distinction.
I take this oath solemnly / and of my own free will.

Foreign Students' Secretariat
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