Excellence is never an accident.
It is always the result of high intention, sincere effort,
and intelligent execution;
it represents the wise choice of many alternatives –
choice, not chance, determines your destiny.

– Aristotle (c. 384 B.C. to 322 B.C.) –
Welcome note

It is with great pleasure that we welcome you as the first-year students of the new Medical Degree English program of the National and Kapodistrian University of Athens (N.K.U.A.).

N.K.U.A. is a research University that builds on foundations which were laid over 185 years ago. It has attained recognition as an Institution of educational and scientific excellence and as a source of intellectual wealth for our country. The School of Medicine was also founded in 1837 as part of the Ottonian University, the forerunner of the National and Kapodistrian University of Athens. The Ottonian University’s School of Medicine was the first of its kind in the Balkans and the Eastern Mediterranean. Our Medical School’s development and expansion are a result of its long history, social engagement, and scientific contributions. It is also the fruit of the labor of its human capital. The School’s mission, goals, and vision for setting and materializing strategies rest upon the three pillars mentioned above.

We believe that Universities are about knowledge, innovation, as well as the pursuit of excellence. We are committed to work towards the advancement of critical human capacities, contribute to sustainable development and social cohesion and promote our country’s cultural heritage, with respect to the principles of democracy, ethics, and cultural diversity.

The Medical Degree English program has been founded under the 4692/2020 Greek Law and it has been accredited by the Hellenic Authority for Higher Education. One of the program’s primary goals is to attract the very best, whether they be prospective international students or internationally renowned professors. We aim at our graduates’ personal and professional success; we endeavor to make them not only highly employable, but also able to gain influence and respect in their interactions with academics, researchers and the community in general. Faculty and researchers are engaged in pushing the boundaries of knowledge in their wide-ranging fields of endeavor. We encourage our students to participate and excel in Olympiads and international competitions in fields of science and arts; we also encourage our faculty to participate in research projects and invest in collaborations with foreign academics and researchers.

Meanwhile, everyone at the National and Kapodistrian University of Athens works hard to maintain its current standing, which is reflected in various international University ranking classifications. According to the latter, the School of Medicine ranks higher than the two-thirds of all Medical Schools in the United States combined.

We hope our efforts will gain momentum in the years to come for the benefit of research, education,
the Medical Degree English program, the School of Medicine, the National and Kapodistrian University of Athens, and the society at large.

Dear Students,
Your joining our University comes with a lot of expectations on your part, your parents, colleagues and lecturers. All of us want to see you succeed in your studies. We encourage you to enrich yours and other students’ experience. Be on the lookout for new knowledge and everything that a historic University and a cultural city have to offer. It may be demanding to live in a foreign country, study there, and get to know a new culture. But when you actively participate in our academic community, you will meet new people, learn something that no book or professor can teach you. We encourage you all to give us your opinion as to what inspired you, what works well, and what could have been better.

The active participation of each one of you in the academic life of our University is vital for its success, our aspirations and endeavors and, therefore, invaluable.

Professor Meletios-Athanasios C. Dimopoulos
Rector and
Medical Degree Program Director

Professor Petros P. Sfikakis
Medical Degree Program
Deputy Director
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— Brief Historical Background of the University —

The University was founded by the Royal Decree of April 22, 1837 under the name “Othonian University” in the honor of its founder, Otto of Bavaria (in Greek, “Othon”), the first king of modern Greece. The Othonian University was renamed to “National University” in 1862, after King Otto was forced to leave the country.

In accordance with the will of the significant donor Ioannis Dombolis, a law was issued on July 17, 1911, with which “The Kapodistrian University” was founded (named after Ioannis Kapodistrias, the first head of the independent modern Greek state). From 1911 until 1932 the University was thus separated
into the Kapodistrian University (the humanities departments) and the National University (the science departments).

In 1932, the “National University” and the “Kapodistrian University” were formally united (Law 5343/1932) into “The National and Kapodistrian University of Athens”, a fully self-governed legal entity of public law.

Up to the early 20th century, the N.K.U.A. was the only university in Greece which offered degrees in the Medical, Natural and Social Sciences, Law and Economy, Theology, Literature, History and Archaeology.

Throughout its history a number of our students and faculty members have played a critical role in medicine, politics, education, literature and nearly all fields of sciences and arts; we should mention, among others, George Papanicolaou, the inventor of Pap test, Hélène Glykatzi–Ahrweiler, Constantin Carathéodory. We are also proud of the two Nobel prize-winners in Literature, Odysseas Elytis and George Seferis, who have studied at the N.K.U.A, and Nikos Kazantzakis who was nominated for the Nobel Prize in Literature in nine different years. Finally our national poet Kostis Palamas had served as Secretary of the University.

The Athens University History Museum.
Medical Degree diploma obtained by George Papanicolaou, inventor of Pap-test
(from the History Archive of the University)
1837 Founded under the name “Othonian University”. During its first year of operation, it had 33 professors, while courses were attended by 52 students and 75 non-matriculated “auditors”

1862 Renamed to “National University”

1911 The “Kapodistrian University” is founded

1932 Merged and renamed as “The National and Kapodistrian University of Athens”

FACTS AND FIGURES

• Undergraduate programs: 41
• 2 undergraduate programs for international students exclusively, all the courses of which are taught in English:
  – “Medical Degree English Program”
  – “BA Program in the Archaeology, History and Literature of Ancient Greece”
• Postgraduate programs: 224 of which 33 are taught in a foreign language
• E-learning programs: 450
• Centers of Excellence: 15
• Centers of Expertise in Rare Diseases of the School of Medicine: 18
• University Research Institutes: 5
• University Hospitals: 3 donated to the University. Departments of the School of Medicine operate in 16 Athens Hospitals
• Departments under the auspices of the School of Health Sciences: 72
• University Laboratories: 283
• Libraries: 11
• The Modern Greek Language Teaching Center
• The Foreign Languages Teaching Center
• Museums: The History Museum, the Historical Archive of the University and 17 thematic museums

HUMAN RESOURCES

Faculty and staff
• Professors (all ranks): 1,646
• Research associates and other teaching, laboratory and technical staff: 513
• Administrative staff: 1,051
• Students: 71,475
• 45,473 Undergraduates
• 17,813 Graduate students at Master level
• 9,360 Ph.D candidates

ERASMUS+ PROGRAM: FACTS AND FIGURES 1987-2022
• More than 16,200 outgoing students
• More than 6,700 incoming students
• More than 835 outgoing staff for teaching/training

2021-2022: 778 Erasmus Inter-institutional Agreements with 382 Universities of 40 countries
# N.K.U.A PLACE AT UNIVERSITY RANKINGS (FOR 2022)

<table>
<thead>
<tr>
<th>Ranking Organization</th>
<th>Place in 2022</th>
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<tbody>
<tr>
<td>1. US News - Best Global University Rankings MEDICINE - Infectious Diseases</td>
<td>46</td>
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<td>2. QS (Quacquarelli Symonds) DENTISTRY</td>
<td>51-70</td>
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<tr>
<td>3. QS (Quacquarelli Symonds) CLASSICS &amp; ANCIENT HISTORY</td>
<td>51-70</td>
</tr>
<tr>
<td>4. Performance Ranking of Scientific Papers for World Universities Immunology</td>
<td>66</td>
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<td>5. THE IMPACT RANKING SDG5: GENDER EQUALITY</td>
<td>75</td>
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<td>6. THE IMPACT RANKING SDG10: REDUCED INEQUALITIES</td>
<td>81</td>
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<td>7. Performance Ranking of Scientific Papers for World Universities Pharmacology &amp; Toxicology</td>
<td>81</td>
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<td>8. AD Scientific Index World Top Universities Ranking</td>
<td>82</td>
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<tr>
<td>9. Top Universities by Google Scholar Citations WEBOMETRICS</td>
<td>86</td>
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<tr>
<td>10. US News - Best Global University Rankings MEDICINE Cardiac and Cardiovascular Systems</td>
<td>91</td>
</tr>
<tr>
<td>11. US News - Best Global University Rankings MEDICINE - Immunology</td>
<td>98</td>
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<tr>
<td>12. SCImago Institutions Rankings (SIR) - SOCIETAL RANK</td>
<td>156</td>
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<tr>
<td>13. Performance Ranking of Scientific Papers for World Universities</td>
<td>186</td>
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<tr>
<td>14. THE IMPACT RANKING SDG4: QUALITY EDUCATION</td>
<td>101-200</td>
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<td>15. THE IMPACT RANKING SDG9: INDUSTRY - INNOVATION - INFRASTRUCTURE</td>
<td>101-200</td>
</tr>
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<td>16. SCImago Institutions Rankings (SIR) RESEARCH RANK</td>
<td>247</td>
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<tr>
<td>17. WEBOMETRICS</td>
<td>251</td>
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<td>18. US News - Best Global University Rankings</td>
<td>260</td>
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<tr>
<td>19. Center for World University Ranking (CWUR)</td>
<td>275</td>
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<td>20. THE IMPACT RANKING SDG8: DECENT WORK &amp; ECONOMIC GROWTH</td>
<td>201-300</td>
</tr>
<tr>
<td>21. Academic Ranking of World Universities (ARWU)</td>
<td>301-400</td>
</tr>
<tr>
<td>22. THE IMPACT RANKING SDG16: PEACE - JUSTICE &amp; STRONG INSTITUTIONS</td>
<td>301-400</td>
</tr>
<tr>
<td>23. THE IMPACT RANKING SDG3: GOOD HEALTH &amp; WELLBEING</td>
<td>301-400</td>
</tr>
<tr>
<td>24. SCImago Institutions Rankings (SIR) INNOVATION RANK</td>
<td>370</td>
</tr>
<tr>
<td>25. QS EMPLOYABILITY RANKING</td>
<td>301-500</td>
</tr>
<tr>
<td>26. SCImago Institutions Rankings (SIR)</td>
<td>391</td>
</tr>
<tr>
<td>27. Times Higher Education (THE)</td>
<td>401-500</td>
</tr>
<tr>
<td>28. QS (Quacquarelli Symonds)</td>
<td>601-650</td>
</tr>
<tr>
<td>29. QS (Quacquarelli Symonds) SUSTAINABILITY MEDALS - Social Impact</td>
<td>SILVER</td>
</tr>
<tr>
<td>30. QS (Quacquarelli Symonds) SUSTAINABILITY MEDALS - Environmental Impact</td>
<td>BRONZE</td>
</tr>
</tbody>
</table>
Facilities and Services by the N.K.U.A. (offered for all university students)

We offer a range of facilities and services and support to undergraduate and postgraduate students. Indicative ones are listed as follows:

<table>
<thead>
<tr>
<th>Counseling services</th>
<th>Support services</th>
<th>Studying and Leisure facilities</th>
</tr>
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<td>Student Ombudsman</td>
<td>Accessibility Unit for Students with Disabilities</td>
<td>9 School Libraries and 2 Libraries at the University Club</td>
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<td>Psychosocial Intervention Unit</td>
<td>Student Support Fund</td>
<td>University Club</td>
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<tr>
<td>Advisory Office - School of Theology</td>
<td>Students’ Halls of residence</td>
<td>Computer and multimedia Center</td>
</tr>
<tr>
<td>Advisory Office-Department of Primary Education</td>
<td>Student meals service</td>
<td>Foreign Languages Teaching Center</td>
</tr>
<tr>
<td>Community Mental Health Center</td>
<td>Medical care</td>
<td>Modem Greek Language Teaching Center</td>
</tr>
<tr>
<td>Coeval counseling Center</td>
<td>Scholarships awards</td>
<td>University Gym and sports Center</td>
</tr>
<tr>
<td>1036-Covid19 phone line for psychological support</td>
<td>Job-seeking assistance</td>
<td>Student Cultural Society</td>
</tr>
</tbody>
</table>
University Museums
N.K.U.A has 17 thematic museums, which belong to specific Schools or Departments of the University.

In addition, the History Museum of the National and Kapodistrian University of Athens is the focal cultural unit of the N.K.U.A that promotes, fosters and highlights our University’s history. The History Museum is located in the neoclassical historic building on the north slope of the Acropolis hill that dates before the 18th Century which formally was the residence of the architect Stamatios Kleanthis and later on (for the period 1837–1841) it served as the premises of the “Othonian University”.

University Club
The University Club of N.K.U.A. operates two (2) reading rooms on its premises in 15 Ippokratos St., 106 79 Athens.

The first one is located on the 2nd floor, with a total seating capacity of 250 students and a PC available to them. The second is on the 4th floor, with a seating capacity of 120 students and a cluster of 4 computers available to them. The reading rooms are open daily, 08:30-21:00. On Saturdays and Sundays, they remain closed.

Tel: +30 210 3688219, +30 210 3688250
University Gym and Swimming pool
The University Gym of N.K.U.A. offers a wide range of physical exercise and sport activities for students, including the teaching of sports.

All University of Athens students have access to the University Gym, which is situated at the University Campus in Ano Ilisia. With the help of this facility, they can participate in a wide range of training programs and sports classes in their free time, giving their lives a new purpose, improving their physical and mental health, and creating a more well-rounded personality.

The University Gym offers the following activities for students to choose from: Aerobics, Tennis, Training and Fitness, Table Tennis, Basketball, Athletics, Swimming, Traditional Dances, Volleyball, Pilates, Football and Chess.

The University Gym’s working hours are Monday-Friday 09:00-18:00. On Saturdays and Sundays, the facility remains closed. In addition to participating in the above-mentioned activities for their own fun, students are encouraged to join the University’s different sport teams, which are based at the University Gym’s premises, and represent the Departments, Schools, or the entire Institution in internal, inter-university, or international student championships.

Website: https://en.lesxi.uoa.gr/student_welfare/university_gym/
“Kapodistrian” running contest
“Kapodistian” running contest is organized every year, where students, professors and staff compete at a 10 km running contest in the University campus.
Accessibility Unit for Students with Disabilities

- access arrangements during exams and other assessments, and
- equal access to the information contained in the Web.

The mission of the Accessibility Unit for Students with Disabilities is to ensure equal access to academic studies for students with different abilities and needs, through built environmental interventions, assistive tools, and access services.

Full integration of students with disabilities includes the following:

- access to interpersonal communication with other members of the academic community,
- access to the built environment of the University,
- access to the printed or electronic educational material they need,
- access to the screen or board from where they sit in the lecture hall.

The Accessibility Unit for Students with Disabilities operates as established by the decision of the Academic Senate (February 23, 2006) and of the Rector’s Council (March 22, 2006).

Tel.: +30 210 7275130, +30 210 7275687
E-mail: access@uoa.gr

Modern Greek Language Teaching Center

The Modern Greek Language Teaching Center of the National and Kapodistrian University of Athens is devoted to the teaching of Modern Greek as a foreign language. The Center also offers speaking practice and Ancient Greek classes.

The Modern Greek Language Teaching Center of the National and Kapodistrian University of Athens started in the 1950s with a very limited number of students. However, the number of students has risen sharply over the past 7 decades. The Modern Greek Language Teaching Center is now the largest of
its kind worldwide. Many of its graduates have gone on to successful careers as teaching staff of Modern Greek language and literature at universities across the world, members of the diplomatic corps or the ecclesiastical hierarchy of their country, renowned scientists, business executives, distinguished artists and entrepreneurs.

The aims of the Modern Greek Language Teaching Center are the following:
1. the teaching of Modern Greek as a second/foreign language,
2. the provision of certificates of competency in Modern Greek to speakers of other languages, and
3. the introduction of speakers of other languages to various aspects of the Greek society and culture.

Address: Modern Greek Language Teaching Center, Georgiou Chatzidaki St. - University Campus, 157 72 Zografou
Tel: +30 210 7277672, +30 210 7277971
E-mail: info@greekcourses.uoa.gr

Foreign Language Teaching Center
The National and Kapodistrian University of Athens, within its instructive and broader educational scope, offers its students the possibility of acquiring, during their studies, the knowledge of one or more foreign languages.

This important task of high-standard foreign language instruction is conducted at the Foreign Language Teaching Center, or Didaskaleio, which is an independent and autonomous academic unit of the University.

At the present time, 25 languages are offered at all levels. These are the following: Albanian, Arabic, Bulgarian, Chinese, Czech, Danish, Dutch, English, Finnish, French, German, Hindi, Italian, Japanese, Korean, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Spanish, Swedish and Turkish.

In addition, the Center offers special programs for those looking to develop more advanced foreign language skills. These range from language laboratories to translation to legal and medical terminology classes.

Classes take place either in the city center, or at the University Campus in Zografou and can be attended by anyone—enrollment is not restricted to current students of the University of Athens. The Center also welcomes students of other Greek Universities and anyone else interested in learning a foreign language; tuition fees are particularly low.

Upon completion of a language course or special program, the Foreign Language Teaching Center provides participants with a Certificate of Attendance and a Certificate of Studies.
Libraries and Information Center
The mission of the Libraries and Information Center is to support and enhance the educational and research activities of the University, manage and distribute specialized scientific information to the academic community and participate in a number of educational and cultural initiatives.

Nine (9) subject-specific site libraries, one in each University School, are available to our faculty and students. Two additional libraries belonging to the Students’ Union are also available to all our staff and students.

The Libraries and Information Center’s collections consist of more than 1,000,000 items (books, journals, maps, CD-ROMs and other resources). This makes the Center one of the three largest libraries in Greece, the other two being the National Library of Greece and the Library of Aristotle University of Thessaloniki.

N.K.U.A. is a member of the Hellenic Academic Libraries Link (HEAL-Link), which offers a wide range of services to the members of the academic community. Through the HEAL-Link portal (https://www.heal-link.gr), our faculty and students get full-text access to journals, online books and a number of bibliographic databases. Apart from the databases accessed via HEAL-Link, N.K.U.A. subscribes to a number of other databases, which are necessary for research purposes.

N.K.U.A. is a member of the Interlibrary Loan Service. This Service was developed by the HEAL-Link and is the official cooperation between organizations working on the operation of libraries and information services on the one hand and interlibrary loan services on the other. The Interlibrary Loan Service handles loan requests on a national basis (including Cyprus) through the IRIS platform. International loan requests are handled by the National Documentation Center in cooperation with the British Library Document Supply Center (BLDSC) and the German SUBITO.

The Libraries and Information Center operates PERGAMOS, the Unified Institutional Repository/Digital Library of the University of Athens where Ph.Ds and undergraduate and Master’s dissertations are deposited (https://pergamos.lib.uoa.gr/).

Electronic publishing (e-publishing) of the University’s journals is also run by the Libraries and Information Center. The e-publishing platform hosts scientific journals which are produced, published or edited by N.K.U.A. (http://epub.lib.uoa.gr/).

Some of the site libraries, in collaboration with the University’s Accessibility Unit for Students with Disabilities, offer study spaces for disabled students.
All electronic services of the Libraries and Information Center are provided by the Libraries Computer Center, which is a key component of the entire system.

Website: http://www.lib.uoa.gr/
Address: Libraries and Information Center Directorate, University Campus, 157 84 Zografou
E-mail: dibib@lib.uoa.gr
**Student Cultural Society**

The University of Athens’ Student Cultural Society is in charge of providing entertainment for the students and fostering the growth of their artistic identities. The Society is broken up into five sections, namely music, theater, dance, cinema and photography. To find their intrinsic artistic inclinations and abilities, all N.K.U.A. students are encouraged to get involved in the University’s Student Cultural Society by taking part in its many cultural activities.

The Student Cultural Society also seeks to support and promote the artistic production of the University of Athens’ students. In this respect the Society serves as a platform for collective expression and creativity. As members of the Society students can enjoy unlimited access to art, experiment with it and even create their own. The working hours are decided by each one of the sections separately.

Tel: +30 210 3688205, +30 210 3688275, +30 210 3688276
Website: https://www.lesxi.uoa.gr/foititiki_merimna/politistikos_omilos_panepistimioy_athinon_pofpa/

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**THE ERASMUS PROGRAM**

The Erasmus Program is part of the European Lifelong Learning Program (LLP). It is one of EU’s fundamental actions in the area of education and skills development. It aims at enhancing and
promoting students’ and educators’ mobility and exchange by forging cooperation between Institutions of Higher Education.

Through the Student Mobility for Studies action, also known as Erasmus Studies, both undergraduate and postgraduate students (Master’s students and Ph.D. candidates) have the opportunity to receive a scholarship in order to study for a set period of time at a European University on the basis of bilateral agreements of cooperation.

**CIVIS UNIVERSITIES ALLIANCE**

The N.K.U.A. is a founding member of the CIVIS European University, since 2019. CIVIS is among the European University Alliances selected for another 4 years of funding in the framework of Erasmus+ and the European Universities Initiative, as announced in July 2022 from the European Commission. CIVIS European Civic University is an Alliance of ten European Universities from ten different countries across Europe: Aix-Marseille Université, National and Kapodistrian University of Athens, University of Bucharest, Université libre de Bruxelles, Universidad Autónoma de Madrid, Sapienza Università di Roma, Stockholm University, Eberhard Karls Universität Tübingen, and Paris Lodron University of Salzburg. University of Glasgow participates in CIVIS as an associate member. The members of CIVIS are all research-intensive universities active across a comprehensive range of subjects and disciplines. They combine excellence in teaching and important spillovers in innovation and research with a commitment to the defense of the academic values and civic engagement.

**Facilities and Services offered especially to medical students**

**HELMSIC**

The Hellenic Medical Students’ International Committee (HelMSIC) is a non-governmental, non-profit civic organization. It is an independent association, which was established in 1958 by medical students. Today, HelMSIC has a local committee in every Greek city or town with a Medical School. The local committees, also known as Chapters, are 7 in number.

https://www.helmsic.gr
THE SCIENTIFIC SOCIETY OF HELLENIC MEDICAL STUDENTS
The Scientific Society of Hellenic Medical Students (SSHMS) was established in September 1993 and has since become instrumental in promoting volunteer and social action. The Society aims at raising awareness amongst students on issues pertaining to medical science, social welfare, and education. To achieve its goals, the Society fosters the production of scientific and social work with a clear focus on the selfless giving and volunteering.

The Chapter of Athens has a long and enviable record of participating actively and massively in various actions organized by SSHMS. It comprises all currently enrolled SSHMS members who study at the School of Medicine of the University of Athens.
http://www.eefie.org/en

HEMOPETALION
Hemopetalion (Greek word for platelet) is a student initiative whose vision is to promote volunteerism amongst medical students and young people. To that end it recruits for blood donations, working closely with various hospitals in Attica. Since its creation, in 2002, Hemopetalion has been calling for blood donations six times a year: three times during fall semester and three times during spring semester. Donations are intended for people and patients who are in need of blood. But given that Hemopetalion is not a blood bank facility, management of all blood units is done by a partner hospital.

THE ATHENS MEDICAL STUDENTS’ ASSOCIATION’S THEATRICAL COMPANY
The Athens Medical Students’ Association’s Theatrical Company is an unaffiliated, leisure-time organization founded in 1994 by students of the Medical School of Athens. Since its foundation it has been presenting a different theatrical production every year.

MEDICAL STUDENTS’ HIKING - MOUNTAINEERING AND NATURE CLUB
The Medical Students’ Hiking - Mountaineering and Nature Club is a group formed within the Medical School of Athens in 2001. Its aim is to raise environmental awareness amongst students. However, the vision of the group extends far beyond the above-mentioned aim. Through a variety of events and activities, such as recycling, movie evenings, mountain climbing seminars, bazaars & other volunteer-based activities, walking and climbing outings, the Association carefully fosters a closer relationship between human and nature.
THE MEDICAL STUDENTS’ FILM SOCIETY
Formed back in 1995 this society is undoubtedly best appreciated by film obsessives. Ever since its creation, the society does weekly screenings of films by independent film makers at the Anatomic Pathology lecture theater.

“IOANNIS GEORGIADIS” MEDICAL SCHOOL OF ATHENS
MOVEMENT OF STUDENTS - LOVERS OF SPORT
This Friends of Sport Movement was created in 2008 by medical students who were at the time in their second year of study. The Movement’s mission is to organize an intra-school championship with students taking part in a variety of competitions in running (e.g. marathon events) in Greece and beyond. Other activities include walking outings as well as a variety of sporting events and happenings.

FOOTBALL TEAM
The Medical School of Athens’ football team has a long history of participating in the University of Athens’ annual football championship hosted at the University Campus football stadium. The team is made up exclusively of medical students (current full-time students of any level of study up to six months after their graduation date) and ranks traditionally in the top 4 of the championship.

THE SOCIETY OF JUNIOR DOCTORS
The Society of Junior Doctors was established in 2009 and has been particularly active ever since. A purely scientific and research-driven association, the Society welcomes medical school graduates, interns, specialists, medical students, health care professionals, the general public and all those who share its vision, namely the quest for knowledge in a spirit of cooperation and for the common good.
4.1. EDUCATIONAL OBJECTIVES
The English-taught Undergraduate Program in Medicine has the following educational objectives:

1. Medical Knowledge
Basic knowledge in biomedical, clinical, clinical laboratory, technological, epidemiological, and health-related social sciences is expected of students who graduate from the N.K.U.A. Medical Degree Program. They should also be able to recognize and assess new data, grasp emerging technologies and apply them to address clinical issues, provide care and treatment for individuals and populations, carry out scientific research, and produce new knowledge.

2. Patient Care
All our graduates are expected to offer patients compassionate and palliative care, as well as fundamental services for illness prevention, disease diagnosis and health promotion. Additionally, they should be able to work well as a team and with other health care professionals while prioritizing the needs of society and patients.

3. Self-evaluation and Lifelong Learning
Since medical science and technology are continually improving, our graduates must be realistic about the boundaries of their knowledge and clinical skills. As a result, they must actively pursue lifelong learning opportunities to further their education and develop their capabilities.

4. Professionalism
Our graduates are expected to uphold high levels of professionalism, reliability, conscientiousness, integrity, and accountability, and to incorporate the fundamentals of medical ethics into their daily work. They should also have enough self-awareness and be able to identify and address any ethical issues that come up in their dealings with patients and their families, their colleagues, and society at large.
5. Communication Skills
All our graduates are expected to communicate clearly in verbal, non-verbal and written forms, and build a trustworthy relationship and cooperation with patients and their families on the one hand and their colleagues on the other.

4.2. LECTURE ATTENDANCE. ASSESSMENT PROCESS AND REGISTRATION IN COURSES
Registration in courses takes place during the first two weeks of each semester at the Program Registrar’s Office. All students are assigned academic advisors to assist and guide them through the year and the program.

At the beginning of the semester the members of the teaching staff distribute the syllabus for the courses they teach. They also announce office hours, assessment processes, and course requirements. Topics to be covered must be in line with the courses approved for the academic year.

Lecture attendance is mandatory and the same applies to clinical practice, tutoring classes, etc.

Students must complete all requirements appropriate for each course, which may include a midterm exam, submissions of short essays and other assignments, and a final course examination.

There are two main assessment periods in each academic year: January (after the end of the teaching period for the fall semester) and June (after the end of the teaching period for the spring semester).

The academic calendar contains the precise dates, and, a few weeks before the exams, the program’s website publishes the complete exam timetable.

Students are tested in fall semester courses during the assessment period in January, whereas spring semester courses are tested during the assessment period in June.

The teaching staff members base the grades on the students’ total course performance, taking into account midterm exams, essays or other assignments, and the final exam. Grades are cumulative. The assessment processes are announced by the members of the teaching staff at the beginning of each semester. For a course to be considered completed, a grade of five (5) or higher is needed.

Grading Scale

| 8.50-10   | Excellent      |
| 6.50-8.49 | Very Good     |
| 5-6.49    | Good          |
| Below 5   | Fail          |
4.3. REQUIREMENTS TO OBTAIN A DEGREE IN MEDICINE

The following prerequisites must be satisfied for someone to receive a medical degree from N.K.U.A.:
1. Enrollment Residence Requirement: Registration in the School and in-person attendance for a minimum of 12 semesters.
2. Mandatory Course Requirement: Completion of all required courses with a final grade of at least 5/10, for a total of 360 ECTS credits.

The Grade Point Average (GPA) is calculated as the mean grade across all taught courses. The full academic qualifications are the following:

<table>
<thead>
<tr>
<th>Grade Range</th>
<th>Description</th>
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<tbody>
<tr>
<td>8.50-10</td>
<td>Excellent</td>
</tr>
<tr>
<td>6.50-8.49</td>
<td>Very Good</td>
</tr>
<tr>
<td>5-6.49</td>
<td>Good</td>
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</table>
## Curriculum 2022-2023

### 5.1. Timetable of 1st and 2nd Semester Courses

<table>
<thead>
<tr>
<th>1st Semester (Lectures &amp; Labs)</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
<th>THURSDAY</th>
<th>FRIDAY</th>
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<tbody>
<tr>
<td>8:00-9:00</td>
<td></td>
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<td></td>
<td></td>
<td>Medical Physics</td>
</tr>
<tr>
<td>9:00-10:00</td>
<td>Medical Physics (Lab)</td>
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<td>Medical Physics</td>
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<tr>
<td>10:00-11:00</td>
<td>Medical Physics (Lab)</td>
<td>Biology I</td>
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<td>Biology I</td>
</tr>
<tr>
<td>11:00-12:00</td>
<td>Medical Physics</td>
<td>Biology I</td>
<td>Medical Statistics (Lab)</td>
<td>Disaster Medicine and Humanitarian Aid in the 21st Century and the EU*</td>
<td>Biology I</td>
</tr>
<tr>
<td>12:00-13:00</td>
<td>Medical Physics</td>
<td>Medical Statistics</td>
<td>Medical Statistics (Lab)</td>
<td>Disaster Medicine and Humanitarian Aid in the 21st Century and the EU*</td>
<td>Epistemology, History &amp; Ethics of Medicine</td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>Medical Statistics</td>
<td>Medical Chemistry</td>
<td>Use of English Medical Terminology*</td>
<td>Epistemology, History &amp; Ethics of Medicine</td>
<td></td>
</tr>
<tr>
<td>14:00-15:00</td>
<td>Epistemology, History &amp; Ethics of Medicine</td>
<td>Biology I (Lab)</td>
<td>Medical Chemistry</td>
<td>Use of English Medical Terminology*</td>
<td></td>
</tr>
<tr>
<td>15:00-16:00</td>
<td>Epistemology, History &amp; Ethics of Medicine</td>
<td>Biology I (Lab)</td>
<td>Medical Statistics</td>
<td>Medical Chemistry</td>
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<tr>
<td>16:00-17:00</td>
<td>Medical Chemistry</td>
<td>Medical Statistics</td>
<td>Medical Chemistry</td>
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<tr>
<td>17:00-18:00</td>
<td>Medical Chemistry</td>
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*Elective Courses
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<tr>
<th>TIME</th>
<th>MONDAY</th>
<th>TUESDAY</th>
<th>WEDNESDAY</th>
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<tr>
<td>9:00-10:00</td>
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<td>Neuroanatomy</td>
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<tr>
<td>10:00-11:00</td>
<td>Neurophysiology</td>
<td>Biology II - Genetics</td>
<td>Neuroanatomy</td>
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</tr>
<tr>
<td>11:00-12:00</td>
<td>Neurophysiology</td>
<td>Biochemistry I</td>
<td>Biology II - Genetics</td>
<td>Biology II - Genetics</td>
<td></td>
</tr>
<tr>
<td>12:00-13:00</td>
<td>Histology - Embryology I</td>
<td>Biochemistry I</td>
<td>Histology - Embryology I</td>
<td>Biology II - Genetics</td>
<td></td>
</tr>
<tr>
<td>13:00-14:00</td>
<td>Biology II - Genetics</td>
<td>Neurophysiology</td>
<td></td>
<td>Biology II - Genetics</td>
<td></td>
</tr>
<tr>
<td>14:00-15:00</td>
<td>Biology II - Genetics</td>
<td>Neurophysiology</td>
<td>Biochemistry I</td>
<td>Histology - Embryology I</td>
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<tr>
<td>15:00-16:00</td>
<td>Neuroanatomy</td>
<td>Neurophysiology (Lab)</td>
<td>Biochemistry I</td>
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<td>Biology II - Genetics (LAB)*</td>
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<tr>
<td>16:00-17:00</td>
<td>Neuroanatomy</td>
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<td>Histology - Embryology I (Lab)</td>
<td>Biology II - Genetics (LAB)</td>
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<tr>
<td>17:00-18:00</td>
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<td></td>
<td></td>
<td>Histology - Embryology I (Lab)</td>
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</table>

*Class starts at 15:30*
5.2. ACADEMIC CALENDAR 2022-2023 FALL AND SPRING SEMESTER

Fall Semester

Lectures: Monday 03 October 2022-Friday 20 January 2023
Exam period (fall semester): Tuesday 31 January 2023 — Friday 10 February 2023
Public holidays/Lecture-free days:
• National Holiday: Friday, 28 October 2022
• Athens' Polytechnic uprising: Thursday 17 November 2022
• Christmas holidays: Saturday, 24 December 2022 - Friday, 6 January 2023
• Feast Day of the Three Great Hierarchs: Monday, 30 January 2023

Spring Semester

Lectures: Monday 13 February 2023 - Friday 2 June 2023
Exam period (spring semester): Monday 12 June 2023 — Friday 23 June 2023
Public holidays/Lecture-free days:
• Ash Monday (Beginning of Lent): Monday, 27 February 2023
• National Holiday: Saturday, 25 March 2023
• Easter Holidays: Monday, 10 April 2023 - Friday, 21 April 2023
• Labor Day: Monday, 1 May 2023
• Monday of the Holy Spirit: Monday, 5 June 2023
5.3. COURSE DESCRIPTION

1st Semester

• BIOLOGY I (54406) 65 hours
A strong foundation for further medical studies is provided by this course, which covers the fundamentals of cell biology, including the regulation of cell cycle and death, differentiation, motility, intracellular signal transduction, metabolism, cell transport, and malignant transformation. The course provides practical laboratory instruction in microscopy and basic protein biology methods.

Learning outcomes
At the end of the course, students will be acquainted with the different types of cells and their components. They will have a thorough understanding of key cellular functions.

• EPISTEMOLOGY, HISTORY AND ETHICS OF MEDICINE (54721) 52 hours
History, philosophy, sociology, and ethics are all incorporated into the teaching of medicine in the course Epistemology, History, and Ethics of Medicine. The overarching aim of the course is to familiarize students with the evolution and development of medical knowledge and science, while highlighting the ways in which scientific advancements have impacted not just medicine but also culture and social ethics over time.

Learning outcomes
Upon completion of the course, students will have gained significant understanding of the epistemological concepts and will be able to relate philosophy to medicine, deal responsibly with ethical dilemmas and common medical misconceptions, and practice medicine in accordance with moral and ethical standards.

• MEDICAL CHEMISTRY (54722) 71.5 hours
This course covers the following topics and subtopics: atomic structure and bonding, thermodynamics, kinetics, acids and bases, reactions in organic chemistry, oxidation-reduction and bioenergetics, isomerism, functional groups in biomolecules, structural biochemistry, classification of carbohydrates, glycoproteins, proteoglycans, lectin-carbohydrate interactions, amino acids, protein structure, types of proteins, keratin and collagen, myoglobin, structure and function of hemoglobin, ligand binding
cooperativity, Bohr effect, protein denaturation, glycosylation, classification of fatty acids, triglycerides, steroids, phospho- and sphingolipids, structure and function of DNA and RNA.

**Learning outcomes**
The fundamentals of chemistry, particularly those that are closely relevant to biochemistry and the structure of the main biomolecules, will be familiar to students by the end of the course.

- **MEDICAL PHYSICS (54723) 71,5 hours**
  This course covers the following topics: mechanics of the human body, blood pressure and the cardiovascular system, electric signals from the body, hearing and speech, interaction and biological effects of ionizing radiation, basic principles of radiation protection, diagnostic radiology, nuclear medicine, radiotherapy, ultrasounds, magnetic resonance imaging and medical lasers.

  **Learning outcomes**
  Upon completion of this course, students will be familiar with the aspects of physics which are related to the human body, as well as the diagnostic and therapeutic applications of ionizing and non-ionizing radiation in medicine. Hence, the course will be a physics foundation for their medical degree curriculum as well as for postgraduate medical training.

- **MEDICAL STATISTICS (54314) 65 hours**
  This course gives an overview of the most commonly used analyses linking them to study design, including descriptive statistics, estimation and hypothesis testing, t-test, chi-squared test, correlation, linear regression, logistic regression, non-parametric tests, an introduction to probability theory and basic concepts in the evaluation of medical tests.

  In addition to lectures, students will receive practical instruction with a focus on the SPSS statistical software package.

  **Learning outcomes**
  At the end of this course, students will be familiar with the statistical methods now employed in medical research. They will also understand how to interpret the results. Sound knowledge of statistical methods and their applications in medical research allows the choice of the appropriate study designs and data analysis methods that ultimately lead to valid conclusions based on evidence. That is the cornerstone of evidence-based medicine.
2nd Semester

- **BIOLOGY II - GENETICS (54724) 91 hours**
  This course offers an introduction to studying the cellular and molecular basis of inheritance by covering such topics as: genome structure, regulation of gene expression and patterns of inheritance pertinent to the monogenic and polygenic nature of human pathologies. A component on population and developmental genetics is also included in the course. Cutting-edge applications of genetics in modern medical practice are discussed, including pharmacogenetics, nutrigenetics, gene and stem cell therapies.

*Learning outcomes*
Medical students who complete *Biology 2* course gain a solid understanding of molecular biology and medical genetics as well as practical DNA technology abilities.

- **NEUROANATOMY AND NEUROPHYSIOLOGY (54725) 104 hours**
The *Neuroanatomy* component of the course covers the anatomy and organization of the nervous system, including spinal cord and pathways, sensory and motor systems, brain anatomy, autonomic nervous system (ANS) and cerebral circulation. The *Neurophysiology* component covers membrane potentials, synaptic transmission, neurotransmitters, spinal reflexes, ANS, somatosensory system, special senses control of voluntary movement, basal ganglia, cerebellum, cerebrospinal fluid, blood-brain barrier, sleep and wakefulness, electroencephalogram, learning and memory.

*Learning outcomes*
At the end of this course, students will have the knowledge to understand the structure and function of the nervous system—from the properties of individual nerve cells to their role in organized neuronal circuits that generate behavior.

- **BIOCHEMISTRY I (54355) 78 hours**
*Biochemistry 1* covers the fundamentals of the role and action of enzymes (catalytic theory, mechanisms of catalysis, Michaelis-Menten equation, types of inhibition, coenzymes and cofactors, allosteric enzymes), the metabolic pathways of carbohydrates, lipids, amino acids, proteins and nucleotides (purines and pyrimidines), the hormonal regulation of the metabolic pathways and the molecular mechanisms underlying related diseases and their treatment.
Learning outcomes
At the end of the course, students will be able to understand the mechanisms of energy production, the regulation of the reactions, as well as the consequences of any deficiencies.

- HISTOLOGY - EMBRYOLOGY I (54408) 71.5 hours
The course Histology - Embryology 1 aims to equip students with knowledge on the structure and functions of the human cell. Different types of human tissues, such as epithelial, connective, bone and cartilage, muscular, blood, neural, cardiovascular, immune and lymphoid are discussed and practical laboratory training is provided. Lectures cover topics including the menstrual cycle, mitosis and meiosis, spermatogenesis and ovarian follicle development, as well as the process of reproduction, the stages of embryo and placental development and the associated congenital anomalies. Furthermore, a variety of important aspects of crucial mechanisms, such as cellular signaling and senescence, apoptosis and carcinogenesis, are being elucidated.

Learning outcomes
Students who complete this course will be familiar with the structure and functions of the human cell.

3rd Semester

- DESCRIPTIVE ANATOMY I (54322) 65 hours
Through Descriptive Anatomy students have the opportunity to study in detail the anatomical regions of the human body, along with the organs and functional systems. Cadaver dissection, lectures in the amphitheater and locations with Anatomage tables or Human Body Navigators are all used to teach anatomy. This course’s subjects include: abdominal anatomy, the digestive system, the abdominal wall and groin, the peritoneum and omentum, the retroperitoneum, the abdominal aorta, the inferior vena cava, the nerves, the lymphatics/lymph nodes, the abdominal organs, the esophagus, the stomach, the small intestine, the appendix, the large intestine and anorectum, the liver, the extrahepatic biliary tract and gallbladder, the pancreas, the spleen, the respiratory system, the genitourinary system, the kidneys and ureters, the adrenal glands, the urinary bladder, the male and female genital systems, breast anatomy and anatomy of the heart.

Learning outcomes
By the end of the course, students will possess a comprehensive base of knowledge with respect to the anatomical regions, the organs and the functional systems of the human body.
• PHYSIOLOGY I (54727) 91 hours
The basic principles that underlie the operation of the human body’s various systems and processes are covered in Physiology 1, along with the ways in which they interact to maintain the body alive and in proper condition. The course provides basic background information on homeostatic mechanisms and cellular communication, endocrine physiology, metabolism, reproductive physiology, the muscular system, blood physiology and immunology, wound healing and thermoregulation, experimental methodology and technological advances.

*Learning outcomes*
By the end of the course, students should be able to discuss the molecular and cellular pathways responsible for physiological processes as well as how their dysregulation leads to the generation of pathology.

• BIOCHEMISTRY II (54329) 39 hours
The course covers the fundamental aspects of eukaryotic gene transcription, the targeting of DNA repair mechanisms in cancer, the mechanisms of cell-cycle regulation and apoptosis, the role of hormones in mediating hormonal physiological outputs, the metabolic interrelationships between liver, adipose tissue, brain and skeletal muscles in the integration of metabolism.

*Learning outcomes*
Upon completion of the course, students shall be familiar with the cell signaling pathways in cancer, the hormone cascade pathways and the effector responses in a variety of hormonoregulated physiological processes and the metabolic interrelationships during feeding-starvation cycle, exercise and the metabolic integration in diabetes.

• HISTOLOGY - EMBRYOLOGY II (54409) 71,5 hours
The Histology component of this course covers the organization of tissues in the respiratory system, the digestive system, the urinary system, the male and female reproductive systems, the skin and dermal appendages, the mammary gland and the sensory organs. The Embryology component of this course covers the development of the respiratory system, the digestive system, the liver and biliary system, the pancreas, the urinary system, the endocrine and exocrine glands, the genital system, the nervous system, the face and palate, the skin and its appendages, the musculoskeletal system, the circulatory system and the sensory organs.
Learning outcomes
Throughout this course, students will develop a sound knowledge of the organization of tissues. Detailed microscopic observation in the laboratory will be used to improve students’ understanding of the subject matter taught.

4th Semester

• DESCRIPTIVE ANATOMY II (54728) 65 hours
This course covers topics including: head and neck anatomy, specific organs; thoracic anatomy, thoracic wall, axilla, mediastinum, thoracic duct; pericardium, diaphragm, abdominal wall, abdominal cavity; pelvis and perineum, pelvic sidewall, pelvic floor; spinal column, skull and foramen; osteology, arthrology, syndesmology, peripheral vascular and nervous systems, plexus (brachial, lumbar-sacral) of the upper (arm, forearm, hand) and the lower (thigh, leg and foot) extremity. The course entails unilateral in-depth neck, thorax, axilla, abdomen, groin and pelvis cadaveric dissection.

Learning outcomes
Students completing this course are expected to demonstrate an understanding of the contribution of the deceased to the education of the living and display appropriate professional behaviors, including compassion and respect for the dignity of the departed.

• PHYSIOLOGY II (54729) 91 hours
This course aims to introduce students to the structure and function of the cardiovascular, respiratory, urinary and digestive systems, linking basic medical sciences with clinical medicine. It covers such topics as: cardiac rhythm, blood and lymph flow, circulation, mechanics of the heart and lungs, gas exchange, respiration, renal function, pH regulation, urination, digestion, absorption, gastrointestinal motility, physiology of the liver, the gallbladder and the pancreas.

Learning outcomes
By the end of the course, students should be able to discuss the molecular and cellular pathways responsible for physiological processes as well as how their dysregulation leads to the generation of pathology.

• PATHOLOGY II (54334) 52 hours
In general pathology, disease processes are explained in the light of malfunctions at the cellular and
tissue level, offering a rich understanding of the clinical correlates of all aspects of fundamental cellular pathology, pathophysiology, and basic biomedicine. The following topics of systematic pathology are included in *Pathology 1*: diseases of bone, joints, soft tissues, lymphoid tissue, neural tissue, special sense organs, endocrine glands and skin.

**Learning outcomes**
This course presents an up-to-date but deep understanding of disease states at the cell and tissue levels. It is concerned with cellular pathology, inflammation, immunopathology, tumor biology, and the genetic basis of disease.

- **GENERAL MICROBIOLOGY ‐ IMMUNOLOGY (54357) 52 hours**
In *General Microbiology - Immunology* students are introduced to such topics as: bacteriology, virology, parasitology, mycology, microbial taxonomy, the interaction between microbes and the host, microbial genetics, basic immunology and immunology related to infectious diseases. Furthermore, they are introduced to the mechanics of antibiotics, disinfectants and antiseptics, as well as to the immunological assays. Lectures are supplemented by tutorials and practicals related to basic microbiological methods, namely microscopy, culture, susceptibility testing, immunological and molecular assays. The above-mentioned activities involve small groups of students.

**Learning outcomes**
This course provides students with an introduction to specific branches of microbiology and immunology. They are also offered laboratory-based discussions and practical sessions.

**5th Semester**

- **PATHOLOGY II (54337) 78 hours**
All systematic pathology topics to be studied in this course are packed with clinical-laboratory correlations. The course is delivered within a case-based learning approach. Topics to be covered throughout the semester include: digestive tract and related organs, head and neck, respiratory system, circulatory system, nephropathology - genitourinary pathology, gynecological and breast pathology, pathology of pregnancy and the fetus, polysystematic diseases.

**Learning outcomes**
By the end of the semester, students will be familiar with the origins of diseases, the morbid and reactive
processes, and the outcomes of diseases as they affect the different systems and, through them, the body as a whole.

- **PATHOPHYSIOLOGY (54730) 91 hours**
  The objective of this course is to provide direct insights into the disease pathophysiology of: the immune system; fluid, electrolyte and acid-base balance; kidney; the respiratory system; the cardiovascular system; the hematopoietic system; infections; the endocrine glands; the gastrointestinal tract; liver and pancreas.

**Learning outcomes**
Through the *Pathophysiology* course students, having already been taught the normal function of the human body, are introduced to the mechanisms of diversion from normal and disease development. This knowledge renders them capable of perceiving the molecular mechanisms and functional changes of the human body that lead to disease clinical expression, with the further goal of supporting their future diagnostic and therapeutic approach on an etiopathogenetic basis.

- **PHARMACOLOGY I (54332) 52 hours**
  Through lectures and the use of digital technologies this course equips students with the fundamental information and the general principles underlying the action and use of drugs in medical practice. During the semester, students also have the option of taking experimental pharmacology classes.

**Learning outcomes**
At the end of this course, students will be acquainted with the properties of the clinically relevant drug classes and prototypes, including molecular actions, pharmacokinetics, major therapeutic indications, side effects and interactions.

- **MEDICAL MICROBIOLOGY (54339) 52 hours**
  This course covers fundamental and clinical aspects of microbiology and immunology related to the infectious agents (bacteria, viruses, fungi, parasites, etc.). These are thoroughly discussed, with a special focus on their morphology, biology, diagnosis, epidemiology, pathogenesis, therapy and prevention. The role of the specific and non-specific immune systems in defense against infection and disease, as well as in the causation of disease (immunopathogenesis), is emphasized.

**Learning outcomes**
Students who complete this course will have a broad understanding of medical and molecular aspects
of bacteriology, virology, parasitology, mycology, epidemiology, and immunity to infection. They will also receive practical training on topics ranging from infections to diagnostic methods used.

• **MEDICAL PSYCHOLOGY (54316) 26 hours**

The key objective of this course is to provide students with a basic knowledge of topics of psychology pertinent to medical practice, including the cognitive and psychosocial processes as well as the psychological development of an individual under conditions of health and illness. Cognitive processes will be discussed in the context of clinical thinking and reasoning, with the aim of facilitating medical problem-solving and treatment decision-making, with a lower probability of medical error. Students will also discuss learning as a means of modifying maladaptive patients’ beliefs and behaviors within the context of the doctor - patient relationship. Another major goal of the course is to examine doctor - patient communication and the psychosocial factors that influence it. Particularly in patients with chronic diseases, this communication can be used as a tool for enhancing health and aiding in sickness adaptation through the development of self-regulation skills. In this context, students will become more sensitized to the impact of psychological stress on health and illness; a special emphasis will be placed on the importance of the patients’ and the doctors’ well-being on the one hand and the prevention of professional burnout among health care workers on the other. Students will also be introduced to the basic psychometric and neuropsychological evidence of dysfunction so as to be able to detect, in their capacity as young doctors, the coexistence of physical and mental disorders in an individual and promptly refer him/her to a specialist for evaluation. In the second part of the course, students will be introduced to the psychobiological, behavioral, psychodynamic and psychosocial models of health and illness, as well as to methodological issues. The importance and significance of mental health prevention and promotion will be discussed, as well as doctor - patient communication. Moreover, the brain - behavior relationship will be investigated, with the emphasis being placed on the functional organization of the nervous system and the psychological factors that affect human body systems, like the cardiovascular, the respiratory, the endocrine, the gastrointestinal, the urogenital and the immune systems. Finally, an introduction to social psychology, ethology and psychophysics will be provided.

*Learning outcomes*

Upon completion of the course, students will be acquainted with aspects of psychology related to the development of medical skills and competence. They will also learn how to apply the fundamentals of memory and learning to the challenging learning process of theoretical and practical medical skills.
6th Semester

- **INTERNAL MEDICINE I: SYMPTOMS AND SIGNS / NOSOLOGY (54358) 156 hours**
  This course is taught in a hybrid format, meaning that half of the lessons are given in a classroom setting and the other half as training in hospital wards. Training involves obtaining medical history by body system and performing a physical examination, followed by a general medical history taking, which also includes a physical examination.

  *Learning outcomes*
  By the end of the course, students will have explored the nosology of approximately 40 major disorders of the respiratory, cardiovascular, digestive, urinary, endocrine, musculoskeletal and hematopoietic systems, together with that of common infectious diseases, and will be sufficiently knowledgeable in recognizing their indicative signs and symptoms.

- **CLINICAL SURGERY I (54359) 78 hours**
  The objectives of this course are to: introduce medical students to the fundamentals of the surgical field; familiarize them with the specific features of surgical patients; provide them with the necessary knowledge regarding the pathophysiology and natural history of surgical pathologies; assist them in obtaining the patients’ history in conjunction with performing clinical assessment procedures; and perform a differential diagnosis through patients’ evaluation on the grounds of clinical and complementary medical testing data.

  *Learning outcomes*
  By the end of the course, students will be acquainted with diseases of the neck and facial region (thyroid, parathyroid, parotid glands, metastatic tumors), breast diseases, thoracic trauma, benign diseases of the esophagus, diaphragmatic hernias, peritonitis, benign diseases of the stomach and duodenum, tumors of the esophagus and stomach, hydatid disease of the liver and the lung, hepatic neoplasms, portal hypertension, ascites, cholelithiasis, neoplasms of the biliary tree, pancreatitis, pancreatic tumors, diseases of the appendix, intestinal obstruction, benign diseases of the large intestine and the rectum, colon and rectal tumors, hernias, diseases of the adrenal glands, disease of the arterial system, diseases of the venous system, diseases of the lymphatic system, neoplasms of the skin and soft tissue.

- **CLINICAL PHARMACOLOGY (54745) 52 hours**
  This course focuses on pharmacogenomics, precision pharmacotherapy, clinical trials and pharmaco-economics. It also includes drug administration training in hospitals.
Learning outcomes
Throughout this course, students are expected to gain theoretical and practical knowledge on how to sustain and advance best health care via the safe, economical and effective use of drugs.

- RADIOLOGY I (54360A) 78 hours
This course is designed to introduce students to the basic techniques of imaging modalities, including plain X-ray, ultrasonography, computed tomography, magnetic resonance imaging, and angiography. Additionally, it covers radiation protection, radiation therapy nuclear medicine and interventional radiology. The course adopts a system-based approach.

In Radiology I, chest and mediastinum, gastrointestinal and urogenital imaging are covered extensively. Tutorials discuss cross-sectional anatomy, imaging patterns and imaging findings of pathology. Indications for imaging and the use of the appropriate imaging modalities in the workup of patients are analyzed.

Learning is primarily through lecture attendance and small group, case-based tutorials, where students are encouraged to present cases and explore options.

Learning outcomes
By the end of this course, students will be acquainted with all current imaging modalities.

- PREVENTIVE MEDICINE AND PUBLIC HEALTH (54365) 65 hours
The course syllabus includes the following topics: principles of screening and screening for specific conditions; hereditary conditions and principles of genetic counseling; vaccination of children and adults; basic concepts of infectious diseases and infectious disease epidemics; infectious diseases prevented by vaccination; prevention of HIV/AIDS and sexually transmitted diseases; prevention of iatrogenic infections; etiology and prevention of chronic conditions with emphasis on cardiovascular diseases and malignancies; public health nutrition; environment and public health; inequalities in access to prevention and primary health care; health services research and evaluation; health promotion; international organizations and collaborations in public health. Content is delivered through lectures and practical training in groups.

Learning outcomes
At the end of the course, students will be familiar with the basic principles and concepts of public health and primary and secondary prevention.
7th Semester

- INTERNAL MEDICINE II - DIFFERENTIAL DIAGNOSIS (54362) 104 hours
  This course includes detailed instruction on the clinical approach and differential diagnosis of patients with multiple conditions, such as cough, hemoptysis, chest pain, pleural effusion, cyanosis, ascites, abdominal pain, diarrhea, gastrointestinal bleeding, jaundice, dyspnea, edema, shock, coma, electrolyte disorders, arthritis, fever of unknown etiology, headache, hepatosplenomegaly, lymphadenopathy, anemia, respiratory, heart and kidney failure, paraneoplastic syndromes, metabolic and hemostasis disorders. The course is taught in a hybrid format, meaning that half of the lessons are given in a classroom setting and the other half as training in hospital wards.

  Learning outcomes
  By the end of the course, students will have gained practical experience of differential diagnosis of disease.

- CLINICAL SURGERY II (54359) 117 hours
  The same topics as in Clinical Surgery I are covered in this course with the emphasis once more on the surgical and medical treatment of diseases. The following topics are also presented and analyzed: fluid, electrolyte, and acid-base disturbances, cardiopulmonary resuscitation, shock, surgical metabolism and nutrition, surgical infections, wound healing, burns, pulmonary embolism and retroperitoneal disease.

  Learning outcomes
  On successful completion of this course, students will have a thorough understanding of surgical disease, which is essential for their clinical training.

- GENERAL EPIDEMIOLOGY AND METHODOLOGY OF RESEARCH (54333) 65 hours
  Epidemiology is essential in preventive and clinical medicine because it allows for the identification of disease causes as well as the evaluation of diagnostic tools, prognostic indicators, and treatments. The course syllabus includes the following topics: key sources of epidemiologic data; measures of association and disease frequency; descriptive epidemiology; formulation of etiologic hypotheses; observational studies (cohort and case-control designs); clinical epidemiology (diagnostic test evaluations, prognostic scores, clinical trials); confounding, bias and interaction; systematic reviews, meta-analyses and evidence-based decision-making; writing and reviewing epidemiological papers;
ethics in medical research; subspecialties of epidemiology. Teaching includes lectures and practical training in groups.

Learning outcomes
By the end of this course, students will have a thorough understanding of basic epidemiology concepts. They will also become more acquainted with biomedical research issues and will be better equipped to practice evidence-based medicine.

• RADIOLOGY II (54360A) 65 hours
In Radiology 2 central nervous system, musculoskeletal system, head, neck and breast imaging are covered extensively. Additionally, students are introduced to cardiovascular and interventional radiology, emergency/trauma imaging, oncologic imaging, pediatric imaging, artificial intelligence in radiology, radiation therapy, nuclear medicine diagnostics and therapeutic procedures. Tutorials discuss cross-sectional anatomy, imaging patterns and imaging findings of pathology. Indications for imaging and the use of the appropriate imaging modalities in the workup of patients are all analyzed. Learning is primarily through lecture attendance and small group, case-based tutorials, where students are encouraged to present cases and explore options. The course concludes with a two-week rotation in the Radiology Department.

Learning outcomes
Upon completion of the course, students will further their knowledge on medical imaging and the related subjects.

8th Semester - 9th Semester

• RESPIRATORY DISEASES - INTENSIVE CARE (54761) 124 hours
The core topics of this course include the following: general approach to critical illness, sepsis, respiratory failure, circulatory shock, hemodynamics, blood gases, acids/bases, introduction to mechanical ventilation, trauma critical care, airway management. More specifically, through lectures and small-group bedside teaching sessions, this course emphasizes on: physiology and pathophysiology of breathing, clubbing, functional respiratory syndromes, pulmonary function tests (interpretation), breathing sleep disorders, respiratory infections (community-acquired pneumonia, tuberculosis), bronchiectasis, bronchial asthma, chronic obstructive pulmonary disease, diffuse parenchymal lung diseases (sarcoidosis, idiopathic interstitial pneumonias, pulmonary alveolar proteinosis), pulmonary-renal
syndromes, the lung involvement in autoimmune rheumatic diseases, occupational and environmental lung diseases, pleural diseases, rare lung diseases, lung cancer, critical care, COVID-19.

**Learning outcomes**

By the end of the semester, students will have been introduced to the basic principles of critical care medicine.

- **CARDIOLOGY (54414) 56 hours**

  Cardiology training lasts four weeks and consists of lectures and clinical practice—with a discussion of interesting clinical cases—in wards, CCUs and laboratories for echocardiography, cardiac catheterization, pacing, and electrophysiology (72 hours in total, corresponding to 8 accredited points). The course syllabus includes training in obtaining medical history and developing skills on clinical examination of patients with cardiovascular disease. The topics analyzed are the following:
  - acute and chronic coronary syndromes
  - arrhythmias
  - sudden cardiac death
  - valvular heart disease
  - cardiomyopathies
  - heart failure
  - pericardial disease
  - endocarditis
  - congenital heart disease
  - pulmonary embolism
  - preventive cardiology
  - pulmonary hypertension
  - aortopathies and peripheral vessel diseases.

**Learning outcomes**

Upon completion of this course, students will be able to perform a full examination of the patient’s cardiovascular system and identify acute coronary syndromes and significant coronary abnormalities on the ECG. Furthermore, they will be familiarized with indications of echocardiography, cardiac catheterization and electrophysiology techniques, as well as with the current therapeutic strategies in cardiac disease.
• **NEUROLOGY (54412) 100 hours**
Neurology rotation lasts 4 weeks and includes daily formal lectures covering all aspects of clinical neurology, seminar-style sessions, inpatient rotations (with patient assignments and participation in day-to-day clinical management), and rotations in Neurological Emergencies.

*Learning outcomes*
Students will have a relatively complete understanding of most aspects of clinical neurology, after completing the course; they will be familiar with the principles of neurological history taking, neurological examination, and the general neurological diagnostic approach; they will be able to recognize neurological emergencies and initiate treatment; and they will have a comprehensive knowledge of the most common neurological conditions and diseases.

• **UROLOGY (54420) 48 hours**
This course delves into some of the most important aspects of the study of urology, such as urological symptoms, clinical evaluation, imaging, infections, lithiasis, congenital anomalies, BPH/LUTS, urological oncology, infertility, sexual dysfunction, neurourology and urological emergencies. By attending clinics, operating theater sessions and other Units of the Department, students are exposed to a wide range of urological conditions (e.g., urological oncology, lithiasis, prostate diseases, urogynaecology) and have the opportunity to develop diagnostic and technical skills, working with faculty and urological residents. Furthermore, students are encouraged to participate in various research projects underway in the 2nd University Department of Urology, a European Board of Urology (EBU) accredited Urological Unit, which boasts a full spectrum of units for urological training. The Department collaborates with European and American Urological Associations. It should here be mentioned that all departmental teaching and clinical conferences are mandatory for students to attend.

*Learning outcomes*
Upon completion of this course, students will have developed an understanding of the various domains of urology. Furthermore, they will have become familiar with the initial stages of urological evaluation and management. Additionally, they will have obtained useful experience from their work as active members of the urology team and from their participation in clinical rounds, patient evaluations, surgical operations, clinics, and post-operative care.

• **OPHTHALMOLOGY (54422) 56 hours**
The medical and surgical specialty of ophthalmology focuses on addressing conditions of the eye and
In this course, students will have the chance to learn the basics of ophthalmology as well as become accustomed to the fundamental clinical evaluation of patients with ocular and orbital problems. More specifically, students take 16 hours of theoretical instruction in the several subspecialties of ophthalmology. Additionally, they practice on ocular and medical history taking, slit-lamp examination, direct ophthalmoscopy, as well as on how to approach patients with ocular disease, rotating through different stations (cornea, retina, glaucoma, ophthalmic theater, Emergencies Department). Moreover, all students receive a session of drylab and wetlab practice of microsurgical skills. The Ophthalmology syllabus is enriched with students’ involvement in patient examinations in various specialized Ophthalmological Departments (glaucoma, vitreoretinal, medical retina and cornea units, etc.), in outpatient clinics and in hospital wards. Finally, students attend operating theater sessions and other surgical ophthalmological procedures.

Learning outcomes
After completing this course, students will be able to understand the fundamental principles and concepts of ophthalmology. They will also be able to recognize the difference between the major ophthalmic diseases.

• OTORHINOLARYNGOLOGY (54424) 50 hours
This course’s overall goal is to introduce students to the diseases of the ear, nose, paranasal sinuses, oral cavity, pharynx, larynx and upper esophagus, as well as to the diagnosis and treatment of diseases affecting the neck (primary and metastatic). Moreover, students are trained in the physical examination (including the use of endoscopes) of the ear, nose, mouth, pharynx, larynx and neck, rotating between the ENT Department, the wards, the audiology lab and the emergencies. Furthermore, they observe live surgery and, occasionally, “scrub in”. Lastly, students are exposed to all facets of the specialty including otology, audiology, rhinology and facial plastics, head and neck oncology, laryngology and pediatric otolaryngology through the attendance of practical workshops, special clinics, and operating theater sessions.

Learning outcomes
At the end of this course students shall be able to: take a detailed history and perform a complete ENT examination; interpret basic audiological investigations and head and neck imaging; diagnose, assess and manage common ENT diseases; assess and provide immediate care—with appropriate hospital referral—in common ENT emergencies, including trauma, epistaxis and airway obstruction; and perform simple clinical procedures, such as tracheostomy tube change, nasal cautery with silver nitrate and nasal packing.
• ORTHOPEDICS - TRAUMATOLOGY (54426) 52 hours
The aim of this course is to introduce students to the following:
• evolution of orthopedics and traumatology
• related sciences
• orthopedic biology - histology
• imaging
• applied biomechanics in orthopedics
• perioperative management and care
• physical examination and clinical anatomy
• geriatric orthopedics
• polytrauma patient and emergency medicine
• principles of fracture healing and fracture management
• closed management - open management complications
• disorders and trauma of the shoulder girdle
• disorders and trauma of the elbow
• disorders and trauma of the wrist and hand and microsurgery
• spine: trauma, disorders, disc herniation, deformities
• disorders and trauma of the hip and pelvis
• disorders and trauma of the knee, ankle and foot
• degenerative joint diseases
• joint reconstruction surgery
• trauma: compartment syndrome, muscle and tendon injuries
musculoskeletal tumors and limb salvage surgery
• orthopedic pathology; metastatic bone disease
• bone tumors
• soft tissue tumors
• infectious diseases
• general principles (etiology, diagnosis, etc.)
• osteomyelitis, infectious arthritis, septic arthritis
• tuberculosis and other infections
• metabolic bone diseases, osteoporosis, osteomalacia, rickets
• neurovascular disorders, nerve injuries
• congenital and developmental abnormalities
• neuromuscular and paralytic disorders (cerebral palsy etc.)
• pediatric disorders, fractures, dislocations in children
• sports medicine, arthroscopic surgery; amputations, diabetic foot
• rehabilitation and pain management
• orthoplastic surgery and soft tissue surgery
• minimally invasive techniques, CT-guided tumor ablation, osteoplasty
• new technologies (3D-printed technology, custom-made implants, navigation, robotics)
• principles of practice.

Mandatory requirements for the completion of the course include among other things:
• clinical training in the examination, and treatment of orthopedic patients (basic trauma as well as degenerative lesions and tumors)
• detection of fractures, degenerative lesions and tumors in various imaging modalities participation in the Department’s clinical services
• identification of emergency and urgent presentations
• training in the basic methods of fracture immobilization and cast application
• observation of basic surgical procedures and participation in the Department’s outpatient clinics and rounds on the one hand, and the emergency on-call duties on the other, all the above under the direct supervision of senior residents

Learning outcomes
Having studied this course, students will be aware of the general topics of orthopedics and traumatology, which range from bone biochemistry and physiology to modern imaging and surgical techniques for complex orthopedic issues. They will be familiar with the clinical manifestations, diagnosis, medical and surgical management and prevention of the musculoskeletal injuries and disorders.

• ANESTHESIOLOGY - EMERGENCY MEDICINE (54731) 50 hours
The Anesthesiology component of the course covers such topics as:
• basic anesthetic management plan
• risks and benefits associated with general and regional anesthesia
• perioperative pain management and acute resuscitation

The Emergency Medicine component of the course covers such topics as:
• prevention, diagnosis and management of urgent and emergency aspects of illness and injury,
affecting patients of all age groups with a full spectrum of undifferentiated physical and behavioral disorders

- in-hospital and out-of-hospital triage
- resuscitation
- initial assessment and telemedicine

Learning outcomes
Upon completion of the course, students will have the knowledge and skills necessary to formulate a basic anesthetic management plan. They will also have the knowledge and skills necessary for the prevention, diagnosis and management of urgent and emergency aspects of illness and injury.

- DERMATOLOGY (54418) 50 hours
This course consists of two parts: a theoretical one in which students attend lectures on several topics related to dermatology and a practical one in which students observe clinical examinations, decision-making processes, and patients' treatment.

Learning outcomes
After completing this course, students will be familiar with the following: dermatology-related history taking; basic dermatological nomenclature; main cutaneous and venereal diseases; specific diagnostic and therapeutic techniques and approaches used in dermatology-venereology. They will also be able to: perform a complete dermatological examination; evaluate various clinical and laboratory findings and produce an appropriate differential diagnosis; and recognize the possibility of systemic comorbidity associated with cutaneous disease.

- THERAPEUTICS (54428) 48 hours
Therapeutic decision-making in fields like oncology, cardiology, nephrology, gastroenterology, pulmonology, infectious diseases, endocrinology, neurology, and critical illnesses is the main focus of this course. While the course is essentially clinical in orientation, it nevertheless analyzes such pharmacological issues as receptor interaction, pharmacokinetics and dynamics, and drug interactions in the context of specific organ system involvement and treatment of disease states. Emphasis is placed on clinical case discussions, which are supplemented by lectures and panel discussions.

Learning outcomes
At the end of this course, students will be acquainted with concepts and methods of therapeutic
communication, as well as with issues pertaining to the clinical relationship between therapist and patient.

10th - 11th - 12th Semesters

• INTERNAL MEDICINE (54464) 560 hours

This course employs an active involvement of students in the Department of Internal Medicine, with their duties including medical history taking, physical examination, application of the findings from patient examination in the formulation of a differential diagnosis, blood sample taking and performing small surgical procedures, interpretation and follow up of laboratory tests and management of patients, participation in daily ward rounds performed by medical teams, presentation and discussion of cases admitted in the Department of Internal Medicine, attendance at the scientific meetings of the Department, at literature review sessions and at hospital interdepartmental meetings. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

Learning outcomes

Upon completion of this course, students will have applied knowledge from the relevant 6th and 7th semester courses as well as the general principles of therapeutics to medical practice.

• PAEDIATRICS (54466) 440 hours

This course aims at introducing students to the following topics of pediatrics:

- nutrition and feeding of the growing infant and child
- vaccinations
- child abuse
- infectious diseases
- inborn errors of metabolism
- endocrine disorders
- neurological disorders (including neurodevelopmental delay)
- nephrological disorders
- disorders of the gastrointestinal tract
- pulmonary
- hematological and oncological diseases of the child and adolescent
Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

Learning outcomes
Upon completing this course, students will be familiar with normal neonatal, infant and child development—and deviations from the norm—as well as with the approach required by children of different developmental stages during physical examination.

• SURGERY (54465) 320 hours
This course introduces students to the care of the surgical patient, from initial admission, diagnostic evaluation, and preoperative work-up, through to operative treatment and post-operative care. Apart from the clinical training, the course also includes lectures on the following advanced topics: management of the injured patient; postoperative complications; surgical oncology; endoscopic surgery; cardiac surgery; thoracic surgery; plastic surgery; and pediatric surgery. Other topics covered include: emergency surgery and trauma, diseases of GI tract, vascular, endocrine, skin, and soft tissues, antiseptic preparation of the surgical field (video watching), benign and malignant diseases of the esophagus, benign and malignant diseases of the stomach, diagnostic and therapeutic approach to breast tumors, writing medical instructions, benign and malignant diseases of the colon, breast reconstruction after mastectomy with autologous tissues, laparoscopic and robotic surgery, indications and perspectives, diseases of the thyroid and parathyroid glands, shock in the surgical patient, genetic basis of GI neoplasms - genetic counseling, bariatric surgery, lithiasis and bile duct neoplasms, surgical adrenal diseases, primary and metastatic liver neoplasms, acute and chronic pancreatitis, pancreatic neoplasms, wound suturing, diagnostic and therapeutic approach to vein diseases, diagnostic and therapeutic approach to arterial diseases. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

Learning outcomes
Upon completion of this course, students will have applied knowledge from the relevant 6th and 7th semester courses as well as the general principles of therapeutics to medical practice. More specifically, they will be able to differentially diagnose clinical syndromes and evaluate surgical patients’ clinical signs and symptoms. Practice in the wards and active participation in daily and grand rounds with the professor and other faculty members will improve students’ knowledge of preoperative patient preparation and postoperative follow-up. Their participation in the operating room (OR) and on-call
responsibilities in the Emergency Department (ED) will allow them to practice and acquire new skills such as blood sampling, venous catheter placement, urinary catheter placement, Levin catheter placement, wound suturing, etc. Students will also acquire specialized knowledge from their contact with the different Units of the Department, namely the Breast Unit, the Upper and Lower GI Surgery Unit, the HPB Surgery Unit, and the Intensive Care Unit.

• **GYNECOLOGY AND OBSTETRICS (54467) 328 hours**
This course is an introduction to the provision of comprehensive medical care and counseling services to adolescent and adult female patients. The expectation for the basic OB/GYN course is that it will provide a solid foundation for students in obstetrics and gynecology, no matter which medical specialty they will join in the future. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**Learning outcomes**
At the end of the course in obstetrics and gynecology, students will be able to perform histories, physicals, and medical workups and complete breast and pelvic exams on appropriate patients. Moreover, they will acquire knowledge on OB/GYN conditions and diseases. They will also further develop their interpersonal communications skills and their professionalism within the field.

• **PSYCHIATRY (54468) 175 hours**
This course is taught in a hybrid format, meaning that half of the lessons are given in a classroom setting and the other half as training in hospital wards. The theoretical part is in reality a description of key topics of psychiatry, including psychiatric interview and history taking; psychiatric phenomenology (disorders of mental functions); psychiatric nosology (psychoses, mood and anxiety disorders, psychiatric disorders due to medical conditions, substance use disorders); differential diagnostics; psychiatric therapies (biological therapies, psychotherapies); child and adolescent psychiatry. Special topics of psychiatry are also discussed, namely psychogeriatrics, sleep disorders, eating disorders, liaison psychiatry, forensic psychiatry, and community psychiatry. In the practical part, students examine inpatients at the adult psychiatry inpatients’ wards and participate in psychiatric rounds with interns and consultants. They are also involved in outpatient clinics, the Emergency Department, as well as various other Departments and Units, such as the Day Care Hospital, the Liaison Psychiatry Service, the Child Psychiatry Unit, etc. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.
Learning outcomes
Upon completing this course, students will be familiar with psychiatric nosology and diagnosis.

- FORENSIC MEDICINE AND TOXICOLOGY (54364) 68 hours
Forensic medicine is a multidisciplinary subject, defined in brief as the application of medical knowledge to the investigation of crime. It includes thanatology (study of the cause and manner of death), clinical forensic medicine (study of the injuries of the living), forensic toxicology, forensic histopathology, forensic anthropology, and medical deontology. Students learn about the aspects of everyday forensic practice by observing post-mortem examinations and attending targeted lectures. Other topics of interest to medical students (death certification, medical liability, etc.) are also thoroughly covered.

Learning outcomes
By the end of this course, students will be provided with all necessary knowledge for everyday forensic practice with a special emphasis on the proper completion of the death certificate.

- CLINICAL ELECTIVES (320 hours)
Hematology or Anesthesiology or Gastroenterology or General Medicine or Endocrinology or Intensive Care or Thoraco-Cardiovascular Surgery or Clinical Genetics or Neurosurgery or Nephrology or Medical Oncology or Child Psychiatry or Rheumatology.

Hematology
In this elective course students are actively involved in all clinical activities of the Department of Hematology. The topics discussed in the course are the following: approach to a patient with leukopenia;
  - approach to a patient with leukocytosis;
  - approach to a patient with pancreatopenia;
  - approach to a patient with eosinophilia;
  - approach to a patient with erythrocytosis;
  - approach to a patient with lymphadenopathy;
  - approach to a patient with splenomegaly;
  - approach to a patient with thrombocytopenia;
  - approach to a patient with thrombocytosis;
  - approach to a patient with paraproteinemia; multiple myeloma; lymphomas; peculiarities of pediatric hematology;
- approach to a patient with bleeding tendencies; acute leukemia types; hematopoietic cell transplantation;
- approach to a patient with thrombophilia;
- discussion of cases.

Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**Gastroenterology**
In this elective course students are actively involved in all clinical activities of the Department of Gastroenterology. The course is in reality a diagnostic and therapeutic approach to the most common and important disorders of the digestive system (esophagus, stomach, small and large intestine, liver/bile ducts and pancreas) and an introduction to diagnostic and therapeutic endoscopies. The topics discussed in the course are the following: dysphagia - non-cardiac chest pain, acute and chronic diarrhea, constipation, malabsorption syndrome, food allergies, prevention of colorectal cancer, pathological liver biochemistry syndrome in an asymptomatic patient, jaundice, ascites, medical ethics and safety of the digestive system endoscopies, diagnostic - therapeutic endoscopy of the upper and lower digestive tract, cholangiopancreatography, examination of the small intestine, endoscopic ultrasound.

Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**General Medicine**
This elective course is an introduction to providing health care to patients on their first contact with the health care system (primary health care). It analyzes topics such as: the continued provision of health care by the same physician regardless of the clinical problem, the treatment of health issues in primary health care, the coordination of different health services, and the provision of integrated care by the primary health care system physicians within their area of responsibility. The objectives of this course are as follows:

i. to describe the approach used by a physician to provide patient-centered primary health care; questions to be answered in this context are: what are the consultation steps? How should a serious illness or death be announced? How should patients with common acute and chronic problems be managed in primary health care? How can a physician support a hypothesis with evidence? What skills are required to apply cost-benefit guidelines in the health care system?
ii. to familiarize students with preventive interventions used as primary prevention on adults; questions to be answered in this context are: What is the procedure for determining the need for preventive intervention? What are the fundamental diagnostic techniques used in primary health care? Which of these techniques are the most dependable? What are the causes of misdiagnosis in primary care?

iii. to introduce students to assessment plans for elderly patients; questions to be answered in this context are: What is the best way to deal with issues when providing palliative care to end-stage patients in primary health care? How can compliance of patients receiving multiple drug treatments be assessed by a physician? How can compliance be improved? When should medication be changed? How should guidelines be applied to patients with multiple morbidities in primary health care? How should a multimorbidity management plan be developed?

**Endocrinology**
In this elective course students are actively involved in all clinical activities of the Department of Endocrinology. The topics discussed in this course are the following: pituitary diseases - thyroid diseases; parathyroid diseases - calcium disorders; type 1 diabetes - hypoglycemia; obesity - metabolic syndrome; type 2 diabetes; gonadal dysgenesis in men; gonadal dysgenesis in women; growth - disorders of sex development/adolescence; adrenal diseases; gestational endocrinology - menopause; lipid disorders; other endocrine issues. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**Intensive Care**
In this elective course students are actively involved in all clinical activities of the Department of Intensive Care. In reality, this course is the application of knowledge from the relevant 8th semester course.

Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**Thoraco-cardiovascular Surgery**
The *Vascular* component of this course addresses diseases of the arteries, veins, and lymphatics. Students attend ward rounds and learn vascular clinical examination skills and how to use a handheld Doppler to assess arterial and venous circulation and measure the ankle-brachial index. They also perform ex-vivo vascular anastomosis on vascular grafts. Additionally, they learn how to distinguish between normal and abnormal blood flow using angiography and CT scans and observe blood flow assessments in small groups. The following topics are covered in small group sessions: aneurysms,
peripheral arterial disease, embolism and thrombosis in the arteries, carotid artery disease, acute and chronic deep venous thrombosis, venous insufficiency (including modern endovenous treatment), lymphoedema, arteriovenous fistulas for hemodialysis and vascular malformations. The Cardiothoracic component of this course exposes students to perioperative evaluation and treatment and gives them the chance to observe cardiac and thoracic surgical procedures. It should be noted here that heart disease and malignancies are the leading causes of death; coronary heart disease and lung cancer are still on the rise, and surgery remains the primary treatment option. Among the objectives of this course is to encourage students to focus on a feasible short-term clinical project that may lead to a publication or presentation and also provide them with an opportunity for surgical research and experimental animal lab practice.

**Clinical Genetics**
This course discusses the following topics: genetics in the prevention and diagnosis of genetic diseases, chromosomal diseases (clinical picture and classic methodological studies), application of new technologies in the clinical practice of genetic diseases (array CGH, next-generation sequencing), clinical and diagnostic approach of patients with dysmorphologies - syndromes, monogenic diseases - the example of Mediterranean anemia, monogenic diseases - the example of cystic fibrosis, multifactorial diseases - the example of cardiovascular diseases, the genetic basis of cancer, the importance of genetic testing in neuromuscular diseases, the potential of prenatal and preimplantation genetic diagnosis, the role of genetic counseling for patients with genetic diseases - congenital anomalies. The course also includes laboratory practice in key aspects of clinical genetics.

**Neurology**
In this elective course students are actively involved in all clinical activities of the Department of Neurosurgery. The topics discussed in this course are the following: traumatic brain injury; tumors of the central nervous system; functional neurosurgery; spine diseases. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**Nephrology**
In this elective course students are actively involved in all clinical activities of the Department of Nephrology. The topics discussed in this course are the following: diagnostic approach to kidney diseases - kidney biopsy; acute kidney damage; nephritis syndrome - rapidly evolving glomerulonephritis - pulmonary syndromes; nephrotic syndrome; interstitial nephritis - nephrolithiasis; chronic kidney disease;
hemodialysis peritoneal dialysis; kidney transplant; cardiorenal syndrome, hypertension and kidney; hereditary kidney diseases; water and electrolyte homeostasis; acid-base balance - practical training in general urine test. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**Medical Oncology**
The general objective of this elective course is to familiarize students with the basic principles of molecular biology, epidemiology, diagnosis and treatment of malignant neoplastic diseases. In this sense, it is a necessary complement primarily to the course of Pathology, and secondarily to courses such as Epidemiology, Surgery, and other more specialized subjects. In accordance with the above aims, the course focuses on general subjects, with only a small number of lectures concentrating on particular neoplasms, which are highly prevalent and pose difficult public health issues. In this elective course students are actively involved in all clinical activities of the Department of Oncology. The topics discussed are the following: epidemiology and prevention of malignancies; toxicity of antineoplastic agents; hospitalized oncology patients; hematopoietic cell transplantation; prostate cancer; gastrointestinal cancer; principles of radiotherapy oncology; hematological malignancies; breast cancer; urinary tract cancer (excluding prostate cancer); targeted antineoplastic therapies; paraneoplastic syndromes; immunology of malignant neoplasms; molecular methods in oncology. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.

**Child Psychiatry**
In this elective course students are actively involved in all clinical activities of the Department of Psychiatry. The topics discussed in this course are the following: normal psychological development of the child with emphasis on the emotional and psychosocial side; classification in child psychiatry; diagnostic evaluation in child psychiatry; emotional disorders - suicidality; diffuse developmental disorders; attention deficit hyperactivity disorder; conduct disorders - delinquency; mental retardation; gender identity disorder; learning disabilities; substance use in adolescence; psychopharmacology in children and adolescents; psychoses in children and adolescents; child and divorce; child abuse and neglect; anxiety disorders; school phobia - school refusal; psychodynamic psychotherapy of children and adolescents; cognitive - behavioral therapies; family psychotherapy; organization of child psychiatric services. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.
Rheumatology

In this elective course students are actively involved in all clinical activities of the Department of Rheumatology. The topics discussed in this course are the following: diagnostic approach to a patient with musculoskeletal pain; basic laboratory testing in patients with musculoskeletal and/or systemic rheumatic manifestations; degenerative arthropathy; crystalline arthritis; rheumatoid arthritis (RA); spondylarthropathies; newer therapeutic interventions (biological agents) in patients with RA and vertebral arthropathy; autoimmunity: from pathogenesis to treatment; systemic lupus erythematosus /Sjögren’s syndrome; vasculitis / rheumatic polymyalgia; scleroderma / myositis / Adamantiadis-Behçet disease; regional and generalized pain syndromes. Throughout the course, students shadow Department residents from 08:00-16:00 every working day and work night shifts at least once a week.
Program Registrar’s Office contact details

The Registrar’s office also hosts the Secretariat of the program and is in the campus of the School of Medicine, building 13, 1st floor, 75, Mikras Asias str., Goudi, 11527 Athens, Greece, tel.: (+30)210 746 2124.

Library of Health Sciences

The Library of Health Sciences first opened its doors to the public in October of 1996, with Professor Phedon Fessas as the first President of the Library Committee. Since the founding of our library we try to make biomedical study easier and we aim to contribute to the progress of biomedical practice in Greece. Being the Central Library of the School of Health Sciences, we support the education and the research activities.

The Health Sciences Library collection includes printed and electronic books, journals, PhD thesis, master dissertations and reference material. The main Lecture Hall of the Program is located on the ground floor of the Library building.

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“Papoulakeio” reading room  
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