FACULTY OF MEDICINE

UNDERGRADUATE PROGRAM

INTRODUCTION TO BASIC MEDICAL SCIENCES I			**TIP111**
ECTS 10 **CREDITS 11**	1. year – I. semester	Undergraduate	Compulsory
	Theoretical/ Lab courses: 80 + 3h/8 week		Turkish
BIOPHYSICS			
PROF. DR. RÜSTEM NURTEN			
ASST. PROF. AYSUN YOLDAŞ			
ASST. PROF. YASİN ÇELİKOK			
BIOSTATISTICS			
ASST. PROF. NURTEN DAYIOĞLU			
BEHAVIORAL SCIENCES			
PROF. DR. EMEL SARI			
INTRODUCTION TO PUBLIC HEALTH			
PROF. DR. HATİCE FERDA DOĞAN			
MEDICAL BIOCHEMISTRY			
ASST. PROF. SELİN KANKAYA			
ASST. PROF. SERVET DURANAY			
HISTORY OF MEDICINE AND ETHICS			
ASST. PROF. AYTEN ARIKAN			
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Course objectives

In medical education, each of course commission corresponds to a course. Course commissions are the course in which specific subjects are associated with and complemented each other by the kinds of interdisciplinary and constituted a meaningful whole. The main objective of the "Introduction to Basic Medical Sciences I" lasts eight weeks is to make an introduction to basic medical sciences and to give students the general features of biochemical processes and essentials of genetic material in this context. Introducing patient-doctor relationships, essentials of public health and medical history with basic principles to students are also the part of the course objectives. On the other hand, learning the basic principles, methods and usage of biostatistics in medicine take place in the course objectives.

Learning Outcomes and Sub-Skills

Students successful on this course,

1. Comprehend the basic biochemical molecules and mechanisms related with the life and their general features and mechanisms,
2. Learn the significance and special features of doctor-patient relationships,
3. Know the health concept, scope of health services and its general principles,
4. Get introductory information about public health,
5. Comprehend the significance of measurement and evaluation on health area,
6. Learn medical history.

Brief description of the course

This course gives the brief introduction about basic biochemical molecules and mechanisms, essentials of genetic material, doctor-patient relationships, medical history with biostatistics, significance of public health and its basic principles.

Teaching Methods and Techniques

Although courses are narrated by instructor, discussion and class participation are provided to the students. A part of the courses is "Laboratory practices" that turn the theoretical knowledge learned in the course into practice.

Prerequisites: NONE

Course Books
Behaviour Sciences

1. Gerrig. Zimbardo ve Sart . Psikoloji ve Yaşam. Nobel Akademik Yayıncılık
2. Okyayuz Ü H. Sağlık Psikolojisi: Giriş. Türk Psikologlar Derneği Yayınları
3. Burger J M. Kişilik Kaknüs Yayınları
4. Glanz K ve ark. Health Behavior and Health Education.b 4.Basım, San Francisco, John Wiley & Sons Inc.

Biophysics

5. Bermek E, Tiryaki D, Gökçe S, Nurten R. Biyofizik Ders Notları WEB'de bulunabilir.
6. Biyofizik Uygulama Notları, İstanbul Tıp Fakültesi, Nurten R.
7. Biyofizik, 2. Baskı, Ferit PEHLİVAN Ankara Üniversitesi Tıp Fakültesi Biyofizik Anabilim Dalı Ankara, 1997
8. Bütünleştirilmiş Molekülsel ve Hücresel Biyofizik, Raicu V., Popescu A., (Çev. Ed.) Nurten R. İstanbul Tıp Kitabevi, İstanbul, 2014.

Medical Biochemistry

9. Lippincott Biyokimya (Çev. Ed.) Ulukaya E. Nobel Tıp Kitapevi, Ankara, 2007
10. Gürdöl F, Ademoğlu E, Biyokimya. Nobel Tıp Kitapevi Ankara, 2010.

Supplementary books

11. Kılıç N (Çev): Biyokimyanın İlkeleri, Lehninger, Palme Yayıncılık, Ankara, 2005.
12. Renkli Biyokimya atlası (Çeviri). Koolman/Röhm.
13. Organik Kimya. Solomons ve Fryhle, 5, baskı, 2010

14. Color Atlas of Biochemistry, 2nd Ed. (J. Koolman, K.-H. Roehm). Thieme, 2005
15. Lehninger Principles of Biochemistry; David L. Nelson, Albert L. Lehninger, 2008
16. Harper Biyokimya. (Çev.Ed. Dikmen N, Özgünen T). Nobel Tıp Kitapevi, Ankara, 2004.
17. Fundamentals of Biochemistry 4.Ed. VOET, John Wiley & Sons, Inc., 2013
18. Dikmen N, Özgünen T (Çev.Ed.). Harper Biyokimya. Nobel Tıp Kitapevi, Ankara, 2004.
19. Metabolizma Atlası- Bir Bakışta Metabolizma (çeviri). İstanbul Tıp Kitapevi 2012

Medical History and Ethics

20. Bayat A H. Tıp Tarihi. Merkezefendi Geleneksel Tıp Derneği Yayınları. İstanbul, 2010
21. Çağdaş Tıp Etiği. Nobel Tıp Kitabevi, İstanbul, 2003
22. Biyomedikal Etik Prensipleri, Tom L. BEAUCHAMP, James F. CHILDRESS, 2017

Supplementary Books

Medical History and Ethics

23. Tıp Tarihi ve Tıp Etiği Ders Kitabı. İ Ü Cerrahpaşa Tıp Fak.Yay. İst. 2007
24. Türkiye Klinikleri Tıbbi Etik Dergileri. Hekimler Birliği Vakfı Yayınları, Ankara, 1994-2003
25. Hope T. Medical Ethics. Oxford Üniversity Press, 2004

Biostatistics

26. Dişçi R. Temel ve Klinik Biyoistatistik. Güneş Tıp Kitabevi, İstanbul
27. Basic & Clinical Biostatistics. Susan White (2026), Çeviren: Timur Köse, Mehmet Orman
28. Practical Medical Statistics. Sercan Öztürk, Pınar Okyay (2024)
29. Easy Statistics in 100 Pages. Cesur Samancı (2022)
30. Research and Statistical Methods in Health Sciences. Prof. Dr. Osman Hayran, Prof. Dr. Hanefi Özbek (2023)

Supplementary Book

31. Research Methods in Health Sciences: Biostatistics with SPSS Applications. Burak Mete (2024).

Introduction to Public Health

32. Karabay S, Önal AE, Cambaz S ed. Halk Sağlığı Bugün Ve Her Zaman, 2024 İstanbul Üniversitesi Yayınları
33. Öztek Z. Tıp Öğretiminde Halk Sağlığı Dersleri, 2023, Papatya Yayıncılık.
34. Akbaba M, Demirhindi H ed. Temel Halk Sağlığı, 2017, Akademizyen Kitapevi

COURSE CONTENT

Week	WEEKLY SUBJECTS AND RELATED PRELIMINARIES
1. WEEK	ORIENTATION WEEK
2. WEEK	Health from Past to Present, Development of Public Health DEAN'S LECTURE Definition of Medicine - Introduction to the History of Medicine - Prehistoric Period Pre-Hippocratic Medicine (Mesopotamia, Egypt, Hittites, China, India) Hippocratic Medicine Period (Ancient Greece, Rome) Development and definition of behavioral sciences Basic concepts of behavioral sciences Concepts related to culture and cultural change Medieval Medicine (in Europe and the Islamic World) and Islamic Medicine Concepts related to culture and cultural change What is social influence on behavior? Social institutions Renaissance Medicine (14th, 15th, 16th and 17th Centuries in Europe) Introduction to biophysics Molecular structure of living systems Definition of statistics, its place in science, importance in Medical Sciences, history

3. WEEK	Introduction to Biochemistry, Structure and Functions of Water Interactions of Water and Biomolecules (Hydrophobic Interactions) Learning Ionization of water and pH Perception LAB: pH Measurements (Theoretical) Research Design: Importance, research types, hypothesis, population, sample, variable, observation / experiment, measurement levels, content and importance of graphs.
4. WEEK	LAB: pH Measurements - GROUP A LAB: pH Measurements - GROUP B Acids and bases Chemical bonds and formation of molecules Buffer Solutions LAB: pH Measurements - GROUP C LAB: pH Measurements - GROUP D Emotional intelligence Concepts of Health - Disease, Social Determinants of Health Personality LAB: pH Measurements - GROUP E LAB: pH Measurements - GROUP F Basic probability (addition and multiplication rules), Binomial Distribution.
5. WEEK	Medicine among Central Asian Turks and the Seljuks Neutralization, Titration Biochemical Calculations Introduction to the laboratory: Lab introduction and safety Cellular Building Blocks Bioenergetics Personality Medicine in the Ottoman Empire Health Indicators, Primary Health Care Developmental periods Poisson Distribution, Classification of quantitative variable
6. WEEK	Health Priorities, Inequalities, Health Promotion Reform in Medical Education in the Ottoman Empire Cellular Respiration Redox Potential and Measurements Health Services and Their Characteristics Conflict Modern, Scientific and Experimental Medicine Period (17th, 18th, 19th and 20th Centuries) Attitudes Stereotypes, prejudice and discrimination Interpersonal communication LAB: Solution preparation and Titration - GROUP B LAB: Solution preparation and Titration - GROUP A Measures of Central Tendency (mean, median, mode), Measures of Dispersion

	(general information, variance – std. deviation).
7. WEEK	LAB: Solution preparation and Titration - GROUP C LAB: Solution preparation and Titration - GROUP D Medicine and Medical Schools in the Republican Period Motivation What are stress, occupational stress and methods of coping with stress? LAB: Solution preparation and Titration - GROUP E LAB: Solution preparation and Titration - GROUP F Normal Distribution.
8. WEEK	EXAM WEEK

EVALUATION SYSTEM

	NUMBER	**CONTRIBUTION**
Attendance		
Laboratory		
Practice		
Area studies		
Course related internship (if exist)		
Homework		
Presentation		
Projects		
Exams	1	15 %

RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM QUALIFICATION

		Contribution level				
	Program Qualification	1	2	3	4	5
1	Learning the organization's normal structure and functioning.					x
2	Learning the mechanisms of disease formation, know the clinical and diagnostic features.		x			
3	Can take the story of the patient and perform general systemic physical examination.	x				
4	It can apply basic medical interventions for diagnosis and treatment of diseases.	x				

5	Emergency diseases can be treated and referral centers can be referred for treatment services where necessary.	x				
6	Can practice preventive medicine and forensic medicine	x				
7	It has general information about the structure and functioning of the National Health System.		x			
8	Know their legal responsibilities and define ethical principles.					x
9	It can effectively perform first-line treatment of common diseases.	x				
10	Organize scientific meetings and conduct projects.	x				
11	To be able to use statistics and computer methods to evaluate the foreign language and scientific studies to follow the literature in the field of medicine	x				

ECTS (WORKLOAD TABLE)

Events	**Number**	**Time(Hour)**	**Total workload**
Course Time (exam week included: 8 x total course hours)	**80**	**1**	**80**
Laboratory	**3**	**2**	**6**
Course related internship (if exist)			
Area study			
Working time out of class (preliminary study, enhancements)	**156**	**1**	**156**
Presentation / Seminar			
Project			
Homework			
Exams	**1**	**3**	**3**
Total workload			**245**

FACULTY OF MEDICINE

UNDERGRADUATE PROGRAM

INTRODUCTION TO BASIC MEDICAL SCIENCES II			**TIP121**
ECTS 10 **CREDITS 16**	1. year – I. semester	Undergraduate	Compulsory
	Theoretical/Practical lab courses: 104 + 8 h/8 week		Turkish
BIOPHYSICS			
PROF. DR. RÜSTEM NURTEN			
ASST. PROF. AYSUN YOLDAŞ			
ASST. PROF. YASİN ÇELİKOK			
BIOSTATISTICS			
ASST. PROF. NURTEN DAYIOĞLU			
HISTOLOGY AND EMBRYOLOGY			
ASSOC. PROF. AHMED AYDIN			
ASST. PROF. NUR ELAGÜL TOMBUL			
MEDICAL PHARMACOLOGY			
PROF. DR. HÜLYA GÜVEN			
ASST. PROF. NURSEL HASSEYİD			
BASIC FIRST AID			
ASSOC. PROF. ÖMERUL FARUK AYDIN			
MEDICAL BIOCHEMISTRY			
ASST. PROF. SELİN KANKAYA			
ASST. PROF. SERVET DURANAY			
MEDICAL BIOLOGY AND GENETICS			
ASST. PROF. SAADET BÜŞRA AKSOYER SEZGİN			
ASST. PROF. VAROL GÜLER			
ANATOMY			
ASST. PROF. BUSE NAZ ÇANDIR GÜRSES			

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Course objectives

The main goal of the course is to teach the main constituents of life; proteins, amino acids, carbohydrates, lipids and nucleotides, cell types, morphologic features of animal cells, functions, structures and features of organelles, bioenergetics, and also histologic methods used in the investigating of cell and also cell structures. Cell cultures and microscopes will be introduced in this concept. Following the basic terminology of anatomy, the anatomy of the skeletal, articular, muscular and nervous systems is taught.

Learning Outcomes and Sub-Skills

Students successful on this course,

1. Comprehend the basic biochemical molecules and mechanisms related with the life and their general features and mechanisms,
2. Recognize the cell, identify the cell types,
3. Know the basic constituents of the cell,
4. Comprehend the structural and functional properties of cell organelles,
5. Understand the bioenergetics,
6. Get the information about general histologic methods,
7. Learn the types of microscopes with their mechanisms.
8. Learn anatomical terminology.
9. Gain general knowledge of the anatomy of the skeletal, articular, muscular, and nervous systems.

Brief description of the course

This course contains the subjects of basic biochemical macromolecules, bioenergetics, cell structure, morphology, the structure and functions of organelles, histologic methods, microscopes and their types, biostatistics, first aid, genetics, pharmacology, and anatomy.

Teaching Methods and Techniques

Although courses are narrated by instructor, discussion and class participation are provided to the students. A part of the courses is “Laboratory practices” that turn the theoretical knowledge learned in the course into practice.

Prerequisites: NONE

Course Books
Histology and Embryology

1) Demir, R. Histoloji Atlası. Palme Yayıncılık, 2008.
2) Müftüoğlu S, Kaymaz F, Atilla P (Çev). Temel Histoloji. Güneş Tıp Kitapevi ,2009
3) Müftüoğlu S. Embriyoloji ve Doğum Defektlerinin Temelleri. Güneş Tıp Kitapevi
4) Solakoğlu S, Aytekin Y. Temel Histoloji. Nobel Tıp Kitapevi, İstanbul, 2009.
5) Özer A. Temel Histoloji. Uludağ Üniversitesi Yayınları
6) Solakoğlu S, Aytekin Y, Gürsoy E. Renkli Embriyoloji Atlası. Nobel Tıp Kitapevi, İstanbul, 2000.
7) Başaklar A C (Çev): Medikal Embriyoloji Langman. Palme Yayıncılık, 2005.
8) Baykal, B. (Çev.), Histoloji Konu Anlatımı ve Atlas (İlişkili Hücre Biyolojisi ve Moleküler Biyoloji ile), Ross, MH. ve Pawlina, W., Palme Yayıncılık, 2014.
9) Solakoğlu, S., Erdoğan, A. ve Mutlu, HS. (Çev), Junqueira Temel Histoloji Konu ve Atlas, Mescher AL., Güneş Tıp Kitabevi, 2019.
10) Dalçık, H. (Çev), Klinik Yönleriyle İnsan Embriyolojisi, Moore, KL. ve Persaud, TVN., Nobel Tıp Kitabevi, 2016.
11) İrez, T. (Çev), BRS Embriyoloji, Dudek, RW., İstanbul Tıp Kitabevleri, 2016.
12) Başaklar, AC., Langman-Medikal Embriyoloji, Sadler, TW, Palme Yayıncılık, 2017.

Supplementary Books

13) Kuruş, M., HİSTOLOJİ: Hücre, Doku, Sistemler Teknikler-Moleküller-Laboratuvar ve Klinik Yönleriyle Güncel Yaklaşımlar, Akademisyen Kitabevi, 2020

Medical Biology and Genetics

14) Yanık B (Çev) Hücre ve Moleküler Biyoloji- Lippincott's serisinden, (Chandar N., Viselli S.,). Nobel Tıp Kitabevleri, İstanbul, 2012
15) TIBBİ BİYOLOJİ VE GENETİK Basım Yılı 2020 (editör: Prof.Dr.Halil KASAP) AKADEMİSYEN KİTABEVİ ISBN: 9786059354387
16) Moleküler Hücre Biyolojisi (Hasan Veysi Güneş), İstanbul Tıp Kitabevi, ISBN:978-625-7291-65-1, Basım Yılı: 2022, Gözden geçirilmiş 6. Baskı
17) Temizkan G. (1999) GENETİK: II. Moleküler Genetik. İstanbul Universitesi Yayınları Sayı:4067, ISBN 975-404-429-9
18) Tıbbi Genetiğin Esasları (2022) 6. baskı (edit.: Prof. Dr. Uğur Özbek) İstanbul Tıp Kitabevi, ISBN:9786054499823
19) Molecular Biology of the Cell. Alberts (2021) (7th Edition), New York: Garland Science,

ISBN-13: 978-0393884821
20) Lodish (2021) Molecular Cell Biology,, (9th Edition), W.H. Freeman and Company, ISBN-13: 978-1319208523
21) Lewin's GENES XII (12th Edition) ISBN-13: 978-1284104493
22) Tıbbi Biyoloji Ders Kitabı, Prof.Dr. Ayşe BAŞARAN, Hipokrat Yayınevi ISBN: 9786058914216 Basım Yılı: 2020, 10. Baskı
23) Essential Cell Biology, Bruce Alberts, Karen Hopkin, Alexander Johnson, David Morgan, Martin Raff, Keith Roberts, Peter Walter. ISBN: 978-0-393-68037-9 Basım Yılı: 2018, 5. Baskı (2023 baskısı e-book formatında mevcut)
24) Moleküler Genetik, Prof.Dr. Güler TEMİZKAN, Nobel Tıp Kitabevi ISBN: 978-605-335-021-7 Basım Yılı: 2013, Genişletilmiş 2. Baskı
25) Essentials of Genetics, Willian S. Klug, Michael R. Cummings, Charlotte A. Spencer, Michael A. Palladino, Darrell J. Killian. Pearson Yayınevi ISBN-13: 978-1-292-35042-4 Basım Yılı: 2020, 10.Baskı
26) Temel ve İleri Moleküler Biyoloji Yöntemleri Genomik ve Proteomik Analizler Prof.Dr. Güler TEMİZKAN, Prof.Dr. Nazlı ADA ISBN:9786053353621 Basım Yılı: 2021, 2. Baskı

Supplementary Books

27) Geçkil H., Ömen M., Yeşilada Ö (Çev) Moleküler Hücre Biyolojisi (Molecular Cell Biology) – Altıncı baskı, Lodish H., Berk A., Kaiser A.C. ve ark. Palme Yayıncılık, 2011
28) Veysi H. Moleküler Hücre Biyolojisi, 3. Baskı Güneş, İstanbul Tıp Kitabevi. 2013.
29) Özbek U. (Çev) Tıbbi Genetiğin Esasları (Tobias S.E., ve ark- 6. Baskı), 2014

Anatomy

30) Gövsa Gökmen F. Sistemik Anatomi, İstanbul 2013,
31) Yıldırım M. İnsan Anatomisi, Genel Anatomi, Lokomotor Sistem, NobelKitapevi, İstanbul, 2005
32) Moore Keith.L, Dalley Arthur. F, Clinically Orıented Anatomy (KliniğeYönelik Anatomi), Nobel Tıp Kitapevi, İstanbul, 2007,
33) Schünke M., Shulte E., Schumacher U. Prometheus Lernatlas der Anatomie. Algemeine Anatomie und Bewegungssystem, [Prometheus –Anatomi Atlası Cilt 1,(Genel Anatomi Ve Hareket Sistemi)] Nobel Tıp Kitapevi, İstanbul, 2006.
34) Platzer W. İnsan Anatomisi Renkli Atlası, Lokomotor Sistem Cilt 1, İstanbulTıp Kitapevi, İstanbul, 2013.
35) Ata Anatomi, (Ed.) Tekdemir İ. İstanbul Tıp Kitabevi, İstanbul, 2025.

Biophysics

36) Bermek E, Tiryaki D, Gökçe S, Nurten R. Biyofizik Ders Notları WEB'de bulunabilir.
37) Biyofizik Uygulama Notları, İstanbul Tıp Fakültesi, Nurten R.
38) Biyofizik, 2. Baskı, Ferit PEHLİVAN Ankara Üniversitesi Tıp Fakültesi Biyofizik Anabilim Dalı Ankara, 1997
39) Bütünleştirilmiş Molekülsel ve Hücresel Biyofizik, Raicu V., Popescu A., (Çev. Ed.) Nurten R. İstanbul Tıp Kitabevi, İstanbul, 2014.

Biostatistics

40) Basic & Clinical Biostatistics. Susan White (2026), Çeviren: Timur Köse, Mehmet Orman
41) Practical Medical Statistics. Sercan Öztürk, Pınar Okyay (2024)
42) Easy Statistics in 100 Pages. Cesur Samancı (2022)
43) Research and Statistical Methods in Health Sciences. Prof. Dr. Osman Hayran, Prof. Dr. Hanefi Özbek (2023)

Supplementary Book

44) Research Methods in Health Sciences: Biostatistics with SPSS Applications. Burak Mete (2024).

Medical Pharmacology

45) Kayaalp Akılcı Tedavi Yönünden Tıbbi Farmakoloji (2 Cilt, 14. Baskı), Kayaalp S. O. Pelikan

Yayınevi, Ankara, 2022.

COURSE CONTENT

Week	WEEKLY SUBJECTS AND RELATED PRELIMINARIES
1. WEEK	The Origin of Life, Cell Types Cell Membrane Structure and Function Types of Microscopes, Basic Principles of Operation and Use Cell membrane structure and functions Structure and functions of intracellular organelles Permeability of the Phospholipid Bilayer and Transport of Substances Across the Membrane Definition of disaster and emergency / Definition of emergency care and first aid Definition of first aid and first aid providers Cytoskeleton Transport mechanisms General characteristics and classification of carbohydrates Introduction to Anatomy: Historical Development and Basic Concepts Radioactivity Kurtosis and Skewness. Concept of Hypothesis Testing in Inferential Statistics, Assumptions.
2. WEEK	Methods Used in Histology and Their Basic Principles Use of Radioisotopes in Research and Medicine Definition of Triage / Triage Practices in Emergency and Disaster Situations First Aid in Traffic Accidents / Assessment of the Injured Patient at the Scene Cell Adhesion (Cell Junctions) Immunohistochemistry Techniques and Methods of Use Introduction to Medical and Anatomical Terminology Extracellular Matrix General Structural Characteristics of Monosaccharides Isomers of Monosaccharides Introduction to Pharmacology: Basic Definitions Disaccharides Polysaccharides Sample, Sampling Methods

3. WEEK	Organelles and Their Functions (Nucleus, Endoplasmic Reticulum, Ribosome, Golgi, Lysosome, Peroxisome, Mitochondria) Glycosaminoglycans General characteristics and classification of lipids Fatty acids and their derivatives Radiation Biophysics First aid in cases of poisoning Basic life support / Initial interventions in adults and children Sources from which drugs are obtained General information on Anatomy Axes, planes and movements in Anatomy Triglycerides, phospholipids and glycolipids Lipoproteins LAB: Microscope, Cell Types - GROUP A LAB: Microscope, Cell Division - GROUP A Tests for Significant Differences Between Two Independent Groups in Quantitative Data, Application with SPSS: Parametric and Non-Parametric Methods
4. WEEK	Intracellular Trafficking of Proteins Macromolecules Nucleic Acids Histochemistry Isoprene-Derived Lipids LAB: Microscope, Cell Types - GROUP B LAB: Microscope, Cell Division - GROUP B First aid interventions for fractures, dislocations and limb amputations First aid interventions for burns and frostbite General characteristics and classification of nucleic acids (Purine and Pyrimidine structures) DNA synthesis General information on bone anatomy Are plants used in treatment beneficial I? Are plants used in treatment beneficial II? LAB: Identification Reactions of Carbohydrates and Lipids - GROUP A LAB: Identification Reactions of Carbohydrates and Lipids - GROUP B Tests for Significant Differences Between Two Dependent (Case-Control) Groups in Quantitative Data, Application with SPSS: Parametric and Non-Parametric Methods

5. WEEK	LAB: Identification Reactions of Carbohydrates and Lipids - GROUP C LAB: Identification Reactions of Carbohydrates and Lipids - GROUP D Cell Structure: Microscopic Structures of Cell Compartments Proteins Signal Transduction Cell Structure: Microscopic Structures of Membrane Systems LAB: Identification Reactions of Carbohydrates and Lipids - GROUP E LAB: Identification Reactions of Carbohydrates and Lipids - GROUP F RNA synthesis First aid interventions for allergies, insect bites and animal bites First aid interventions for drowning and electric shock Control of Cell Number and Size, and Apoptosis General information on joint anatomy General information on muscle anatomy Routes of Drug Administration I Routes of Drug Administration II Post-transcriptional Modifications General information on nervous system anatomy LAB: Cell Types - GROUP C LAB: Cell Types - GROUP D Chi-Square Tests of Independence for Qualitative Data, Chi-Square Tests for Two Dependent Samples
6. WEEK	LAB: Cell Types - GROUP E / LAB: Microscope, Cell Types - GROUP C LAB: Cell Types - GROUP F / LAB: Microscope, Cell Division - GROUP C Biochemical Measurement Techniques (Spectrophotometer) Amino Acids and Their Acid-Base Properties Pharmaceutical Dosage Forms of Drugs Cell Structure: Microscopic Structures of Organelles and Inclusions Cell Structure: Nucleus LAB: Use of Spectrophotometer - GROUP D / LAB: Microscope, Cell Types - GROUP E / LAB: Routes of Drug Administration and Pharmaceutical Dosage Forms - GROUP C LAB: Use of Spectrophotometer - GROUP C / LAB: Microscope, Cell Division - GROUP E / LAB: Routes of Drug Administration and Pharmaceutical Dosage Forms - GROUP D Cell Cycle, Its Control, Cell Division and Sexual Life Cycle Interaction of Active Proteins with Their Ligands Management of Bleeding Emergencies and First Aid Interventions 112 and Emergency Response Systems, Poison Control Centers and Recognition of Emergency Department Concepts LAB: Use of Spectrophotometer - GROUP A / LAB: Cell Types - GROUP B LAB: Use of Spectrophotometer - GROUP B / LAB: Cell Types - GROUP A Power Analysis and Sample Size Calculation Applications

7.WEEK	LAB: Use of Spectrophotometer - GROUP E / LAB: Microscope, Cell Types - GROUP D LAB: Use of Spectrophotometer - GROUP F / LAB: Microscope, Cell Division - GROUP D Enzymes - Physical Principles, Enzyme Kinetics Carbohydrates and Lipids Cell Structure: Cytoskeleton and Intercellular Junctions Cell Structure: Division and Differentiation of Somatic and Germ Cells LAB: Microscope, Cell Types - GROUP F / LAB: Routes of Drug Administration and Pharmaceutical Dosage Forms - GROUP A LAB: Microscope, Cell Division - GROUP F / LAB: Routes of Drug Administration and Pharmaceutical Dosage Forms - GROUP B Biological Basis of Cancer Stem Cells: Embryonic and Adult Stem Cells, Plasticity and Stem Cell Applications (Therapies) LAB: Measurement of Action Potentials LAB: Routes of Drug Administration and Pharmaceutical Dosage Forms - GROUP E LAB: Routes of Drug Administration and Pharmaceutical Dosage Forms - GROUP F
8.WEEK	EXAM WEEK

EVALUATION SYSTEM

	NUMBER	**CONTRIBUTION**
Attendance		
Laboratory		
Practice		
Area studies		
Course related internship (if exist)		
Homework		
Presentation		
Projects		
Exam	1	15%

RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM QUALIFICATION

		Contribution level				
	Program Qualification	1	2	3	4	5
1	Learning the organization's normal structure and functioning.					x
2	Learning the mechanisms of disease formation, know the clinical and diagnostic features.	x				
3	Can take the story of the patient and perform general systemic physical examination.	x				
4	It can apply basic medical interventions for diagnosis and treatment of diseases.	x				

5	Emergency diseases can be treated and referral centers can be referred for treatment services where necessary.	x				
6	Can practice preventive medicine and forensic medicine	x				
7	It has general information about the structure and functioning of the National Health System.	x				
8	Know their legal responsibilities and define ethical principles.	x				
9	It can effectively perform first-line treatment of common diseases.	x				
10	Organize scientific meetings and conduct projects.	x				
11	To be able to use statistics and computer methods to evaluate the foreign language and scientific studies to follow the literature in the field of medicine			x		

ECTS (WORKLOAD TABLE)

Events	**Number**	**Time(Hour)**	**Total workload**
Course Time (exam week included: 8 x total course hours)	**104**	**1**	**104**
Laboratory	**8**	**2**	**16**
Practice			
Course related internship (if exist)			
Area study			
Working time out of class (preliminary study, enhancements)	**154**	**1**	**154**
Presentation / Seminar			
Project			
Homework			
Exams	**1**	**3**	**3**
Total workload			**277**

FACULTY OF MEDICINE

UNDERGRADUATE PROGRAM

INTRODUCTION TO BASIC MEDICAL SCIENCES III			**TIP132**
ECTS 10 **16 CREDITS**	1. year – II. semester	Undergraduate	Compulsory
	Theoretical/Practical lab courses: 107+21h/8 week		Turkish
ANATOMY			
PROF. DR. ZAFER ARI			
ASST. PROF. BUSE NAZ ÇANDIR GÜRSES			
BIOPHYSICS			
PROF. DR. RÜSTEM NURTEN			
ASST. PROF. AYSUN YOLDAŞ			
ASST. PROF. YASİN ÇELİKOK			
PHYSIOLOGY			
PROF. DR. ASİYE NURTEN			
ASSOC. PROF. GÜLTEN ATEŞ ULUÇAY			
HISTOLOGY AND EMBRYOLOGY			
PROF. DR. TÜLAY İREZ			
MEDICAL BIOCHEMISTRY			
ASST. PROF. SELİN KANKAYA			
ASST. PROF. SERVET DURANAY			
MEDICAL BIOLOGY AND GENETICS			
ASST. PROF. BÜŞRA AKSOYER SEZGİN			
ASST. PROF. VAROL GÜLER			
MEDICAL MICROBIOLOGY			
PROF. DR. MİNE ANĞ KÜÇÜKER			
MEDICAL ETHICS			
ASST. PROF. AYTEN ARIKAN			

PROBLEM-BASED LEARNING
PROF. DR. HÜLYA GÜVEN
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Course objectives

The main purpose of this course is to improve the students' knowledge from cell to organ level. Synthesis of biomolecules, carbohydrates and lipids, nitrogen metabolisms, mitosis and meiosis, synthesis of DNA and RNA, gene regulations, embryogenesis, fertilization, pregnancy, general mechanisms and properties of Mendelian genetics, chromosome anomalies, transcription, gene expression, gene regulation, gene repair, recombination and mutations, control mechanisms of body by omics and genetic engineering will be taught and also physiology in which the information stated above and combined will be introduced by ion and matter distributions in the parts of body liquids, transportation of molecules o cell membrane, formation of action potential and action potentials in different tissues. Anatomy of bone, joints, muscle and nervous system are taught following the general terminology of anatomy to complete the physiology. Normal flora is introduced by general concepts of medical microbiology, relations between microorganisms and human-microbe relations.

Basic principles of medical ethics, connection between doctor and law, rights of doctor and patients and relationships between the doctors are taught to students.

Learning Outcomes and Sub-Skills

Students successful on this course

1. Learn the synthesis of biomolecules
2. Know the transcription event and nucleic acid replication
3. Understand the recombination and mutations on DNA
4. Comprehend the gene expression and regulation mechanisms of gene expressions
5. Comprehend the medical genetics and its clinical relation
6. Knows the stages of embryogenesis
7. Understand the concepts of fetal membranes and multiple-pregnancy
8. Learnt the fertilization and in vitro fertilization
9. Learnt the physiology concept
10. Know the general aspects of cell physiology
11. Comprehend the terminology of anatomy
12. Have the knowledge of the anatomies of bone, joint, muscle and nerve system.
13. Know the history of microbiology
14. Identify the type and general properties of microbes
15. Learnt the microbe-microbe and microbe-human and normal flora
16. Learnt the connection between doctor and law
17. Comprehend the general principles of medical ethics
18. Human and patient rights
19. Ethics in professional relationship between doctors

Brief description of the course

In the context of this course, physiology and anatomy related with physiology are introduced by from the synthesis and metabolism of biological molecules to cell biology included genetic material and cell physiology to the organs. The information about medical genetics is introduced from the gene level to

the chromosome level. Embryogenesis and fertilization concepts are introduced. It is also given the general introduction about the general concepts on microorganisms and its relation with human. Basic principles of medical ethics, connection between doctor and law, rights of doctor and patient and relationship between doctors.

Teaching Methods and Techniques

Although courses are narrated by instructor, discussion and class participation are provided to the students. A part of the courses is "Laboratory practices" that turn the therotical knowledge learned in the course into practices.

Prerequisites: NONE

Course Books
Medical Microbiology

1. Gürler B (Ed) : Tıbbi Mikrobiyoloji 1. Ders Kitapları. Nobel Tıp Kitapevi, İstanbul,2013
2. Anğ Küçüker M, Tümbay E, Anğ Ö, Erturan Z (Çevirenler) : Tıbbi Mikrobiyoloji Nobel Tıp Kitapevleri , İstanbul (2002)
3. Anğ Ö. (Çev Ed): Lippincott Mikrobiyoloji Dördüncü Baskı, (Yazarlar: Cornelissen, C.N., Hobbs, M.M), Nobel Tıp Kitabevleri, İstanbul 2021
4. Öğrenciler İçin Tıbbi Mikrobiyoloji Uygulamaları Ders Kitabı, Küçüker M.A., Gümüş, D., K. Yüksek, F., Nobel Tıp Kitabevleri, İstanbul 2022
5. Cornelissen CN, Hobbs MM. Lippincott Şekillerle Açıklamalı Derleme Ders Kitapları: Mikrobiyoloji. Anğ Ö, çeviri editörü. İstanbul: Nobel Tıp Kitabevleri; 2022.
6. Bozkaya, E., (2002). Tıbbi Mikrobiyoloji 1, 2 ve 3. İstanbul: Nobel.

Physioloy

7. Guyton ve Hall. Tıbbi Fizyoloji, 12. baskı. Nobel Tıp Kitapevi. 2013.
8. William F. Ganong Ganong'un Tıbbi Fizyolojisi, 24. Baskı. Nobel Tıp Kitapevi. 2015
9. İnsan Fizyolojisi, İstanbul Tıp Kitabevleri; 2020

Anatomy

10. Gövsa Gökmen F. Sistemik Anatomi. , İstanbul 2013,
11. Yıldırım M . İnsan Anatomisi, Genel Anatomi, Lokomotor Sistem, Nobel Kitapevi, İstanbul, 2005
12. Standring S. (2020). Gray's anatomy e-book: the anatomical basis of clinical practice: Elsevier Health Sciences.
13. Ata Anatomi, (Ed.) Tekdemir İ. İstanbul Tıp Kitabevi, İstanbul, 2025.

Supplementary Books

Anatomy

14. Moore Keith.L, Dalley Arthur. F, Clinically Orıented Anatomy (Kliniğe Yönelik Anatomi), Nobel Tıp Kitapevi, İstanbul, 2007,
15. Schünke M., Shulte E., Schumacher U. Prometheus Lernatlas der Anatomie. Algemeine Anatomie und Bewegungssystem, [Prometheus –Anatomi Atlası Cilt 1, (Genel Anatomi Ve Hareket Sistemi)] Nobel Tıp Kitapevi, İstanbul, 2006.
16. Platzer W. İnsan Anatomisi Renkli Atlası, Lokomotor Sistem Cilt 1, İstanbul Tıp Kitapevi, İstanbul,2013.

History of medicine and ethics

1. Tıp Tarihi ve Tıp Etiği Ders Kitabı İ.Ü. Cerrahpaşa Tıp Fak yay İst.2007
2. Türkiye Klinikleri Tıbbi Etik Dergileri (Hekimler Birliği Vakfı) Ankara 1994-2003
3. Çağdaş Tıp Etiği Nobel tıp Kitabevi İst.2003
4. Medical Ethics Tony Hope Oxford Üniversity Press 2004
5. Biyomedikal Etik Prensipleri, Tom L. BEAUCHAMP, James F. CHILDRESS, 2017

Biophysics

6. Bermek E, Tiryaki D, Gökçe S, Nurten R. Biyofizik Ders Notları WEB'de bulunabilir.
7. Biyofizik Uygulama Notları, İstanbul Tıp Fakültesi, Nurten R.
8. Biyofizik, 2. Baskı, Ferit PEHLİVAN Ankara Üniversitesi Tıp Fakültesi Biyofizik Anabilim Dalı Ankara, 1997
9. Bütünleştirilmiş Molekülsel ve Hücresel Biyofizik, Raicu V., Popescu A., (Çev. Ed.) Nurten R. İstanbul Tıp Kitabevi, İstanbul, 2014.

Histology and Embryology

10. Dalçık, H. (Çev), Klinik Yönleriyle İnsan Embriyolojisi, Moore, KL. ve Persaud, TVN., Nobel Tıp Kitabevi, 2016.
11. İrez, T. (Çev), BRS Embriyoloji, Dudek, RW., İstanbul Tıp Kitabevleri, 2016.
12. Başaklar, AC., Langman-Medikal Embriyoloji, Sadler, TW, Palme Yayıncılık, 2017.

Medical Biochemistry

13. Lippincott Biyokimya (Çev. Ed.) Ulukaya E. Nobel Tıp Kitapevi, Ankara, 2007
14. Gürdöl F, Ademoğlu E, Biyokimya. Nobel Tıp Kitapevi Ankara, 2010
15. Kılıç N (Çev): Biyokimyanın İlkeleri, Lehninger, Palme Yayıncılık, Ankara, 2005.
16. Renkli Biyokimya atlası (Çeviri). Koolman/Röhm.
17. Organik Kimya. Solomons ve Fryhle, 5, baskı, 2010
18. Color Atlas of Biochemistry, 2nd Ed. (J. Koolman, K.-H. Roehm). Thieme, 2005
19. Lehninger Principles of Biochemistry; David L. Nelson, Albert L. Lehninger, 2008
20. Harper Biyokimya. (Çev.Ed. Dikmen N, Özgünen T). Nobel Tıp Kitapevi, Ankara, 2004.
21. Fundamentals of Biochemistry 4.Ed. VOET, John Wiley & Sons, Inc. 2013
22. Dikmen N, Özgünen T (Çev.Ed.). Harper Biyokimya. Nobel Tıp Kitapevi, Ankara, 2004.
23. Metabolizma Atlası- Bir Bakışta Metabolizma. (çeviri). İstanbul Tıp Kitapevi 2012

Medical Biology and Genetics

24. Yanık B (Çev) Hücre ve Moleküler Biyoloji- Lippincott's serisinden, (Chandar N., Viselli S.,). Nobel Tıp Kitabevleri, İstanbul, 2012
25. TIBBİ BİYOLOJİ VE GENETİK Basım Yılı 2020 (editör: Prof.Dr.Halil KASAP) AKADEMİSYEN KİTABEVİ ISBN: 9786059354387
26. Moleküler Hücre Biyolojisi (Hasan Veysi Güneş), İstanbul Tıp Kitabevi, ISBN:978-625-7291-65-1, Basım Yılı: 2022, Gözden geçirilmiş 6. Baskı
27. Temizkan G. (1999) GENETİK: II. Moleküler Genetik. İstanbul Universitesi Yayınları Sayı:4067, ISBN 975-404-429-9
28. Tıbbi Genetiğin Esasları (2022) 6. baskı (edit.: Prof. Dr. Uğur Özbek) İstanbul Tıp Kitabevi, ISBN:9786054499823
29. Molecular Biology of the Cell. Alberts (2021) (7th Edition), New York: Garland Science, ISBN-13: 978-0393884821
30. Lodish (2021) Molecular Cell Biology,, (9th Edition), W.H. Freeman and Company, ISBN-13: 978-1319208523
31. Lewin's GENES XII (12th Edition) ISBN-13: 978-1284104493

32. Tıbbi Biyoloji Ders Kitabı, Prof.Dr. Ayşe BAŞARAN, Hipokrat Yayınevi ISBN: 9786058914216 Basım Yılı: 2020, 10. Baskı
33. Essential Cell Biology, Bruce Alberts, Karen Hopkin, Alexander Johnson, David Morgan, Martin Raff, Keith Roberts, Peter Walter. ISBN: 978-0-393-68037-9 Basım Yılı: 2018, 5. Baskı (2023 baskısı e-book formatında mevcut)
34. Moleküler Genetik, Prof.Dr. Güler TEMİZKAN, Nobel Tıp Kitabevi ISBN: 978-605-335-021-7 Basım Yılı: 2013, Genişletilmiş 2. Baskı
35. Essentials of Genetics, Willian S. Klug, Michael R. Cummings, Charlotte A. Spencer, Michael A. Palladino, Darrell J. Killian. Pearson Yayınevi ISBN-13: 978-1-292-35042-4 Basım Yılı: 2020, 10.Baskı
36. Temel ve İleri Moleküler Biyoloji Yöntemleri Genomik ve Proteomik Analizler Prof.Dr. Güler TEMİZKAN, Prof.Dr. Nazlı ADA ISBN:9786053353621 Basım Yılı: 2021, 2. Baskı

Supplementary Books

37. Geçkil H., Ömen M., Yeşilada Ö (Çev) Moleküler Hücre Biyolojisi (Molecular Cell Biology) – Altıncı baskı, Lodish H., Berk A., Kaiser A.C. ve ark. Palme Yayıncılık, 2011
38. Veysi H. Moleküler Hücre Biyolojisi, 3. Baskı Güneş, İstanbul Tıp Kitabevi. 2013.
39. Özbek U. (Çev) Tıbbi Genetiğin Esasları (Tobias S.E., ve ark- 6. Baskı), 2014.

COURSE CONTENT

Week	WEEKLY SUBJECTS AND RELATED PRELIMINARIES
1. WEEK	Introduction to microbiology and its history Structure of hereditary material (DNA), gene structure, genome organization Gametogenesis, development of germ cells into male and female gametes General properties of amino acids and proteins Introduction to physiology Bioenergetic principles, transport of molecules across the membrane Skeleton of the lower extremity 1 (os coxae) Standard amino acids Non-standard amino acids Skeleton of the lower extremity 2 (os femoris, patella) 1st week of development; from ovulation to implantation Genome organization, extrachromosomal genetic systems and DNA replication Control systems of the body
2. WEEK	Protein structure Fibrillar and globular proteins Genome organization, extrachromosomal genetic systems and DNA replication Basic concepts of medical microbiology Introduction to medical deontology and medical ethics Protein synthesis Post-translational modifications Skeleton of the lower extremity 3 (tibia, fibula) Mutation and mutagenic factors Skeleton of the lower extremity 4 (ossa pedis) Distribution of ions and water

3. WEEK	Fundamental principles of medical ethics LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications (Theoretical - in classroom) Classification of microorganisms 2nd week of development; bilaminar germ disc 3rd week of development; gastrulation, mesoderm development, trilaminar germ disc, development of somites LAB: Protein electrophoresis (SDS - PAGE) (Theoretical - in classroom) Mutation and mutagenic factors LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group E / LAB: Protein identification reactions Group D LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group E / LAB: Protein identification reactions Group B DNA repair General characteristics of microorganisms LAB: Os coxae, os femoris, patella - Group I / LAB: Protein identification reactions Group E LAB: Os coxae, os femoris, patella - Group II / LAB: Protein identification reactions Group A Transport of ions and substances across the cell membrane
4. WEEK	Biological work, osmotic work, membrane structure Membrane potential Ectoderm, neural tube development, neurulation Endoderm, folding of the embryo, body walls, body cavities Recombination Mechanical work, muscle contraction Chemical work LAB: Protein identification reactions Group C / LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group B LAB: Protein identification reactions Group F / LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group B General properties of enzymes 1-2 Joints of the lower extremity 1 (articulatio coxae, articulatio genus) Factors affecting enzyme activity Enzyme inhibition Joints of the lower extremity 2 (articulationes tibiofibularis, articulatio talocruralis, articulationes pedis) General characteristics of microorganisms LAB: Tibia, fibula, ossa pedis - Group II LAB: Tibia, fibula, ossa pedis - Group I Relationships of microorganisms with each other Working rules in the microbiology laboratory, microscopes and their uses in microbiology, microscopic examination of microorganisms

5. WEEK	LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group F Mendelian genetics Bioelectric potentials LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group D Regulation of enzyme activity 1-2 Muscles of the lower extremity 1 (hip muscles, thigh muscles 1) Problem-based learning Embryonic period: weeks 3-8 Placenta and fetal membranes Muscles of the lower extremity 2 (thigh muscles 2) Problem-based learning (Theoretical) LAB: Enzyme kinetics Group A / LAB: Working rules in the microbiology laboratory, microscopes and their uses in microbiology Group F LAB: Enzyme kinetics Group C / LAB: Working rules in the microbiology laboratory, microscopes and their uses in microbiology Group E Chromosome anomalies
6. WEEK	LAB: Enzyme kinetics Group E LAB: Enzyme kinetics Group B Chromosome anomalies Problem-based learning (Theoretical) Gene expression Bioelectric potentials LAB: Enzyme kinetics Group F / LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group A LAB: Enzyme kinetics Group D / LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group A Regulation of gene expression and epigenetic mechanisms Legal responsibilities and duties of physicians Problem-based learning Basic food groups Molecular biophysics, DNA synthesis and energetics Fetal period Muscles of the lower extremity 3 (leg and foot muscles) LAB: General review of lower extremity bones and joints - Group I / LAB: Working rules in the microbiology laboratory, microscopes and their uses in microbiology Group D LAB: General review of lower extremity bones and joints - Group II / LAB: Working rules in the microbiology laboratory, microscopes and their uses in microbiology Group B Multiple pregnancies and molecular basis of early development Clinical embryology and assisted reproductive techniques

7. WEEK	LAB: Working rules in the microbiology laboratory, microscopes and their uses in microbiology Group A LAB: Working rules in the microbiology laboratory, microscopes and their uses in microbiology Group C Bioelectric potentials Legal responsibilities and duties of physicians The concept of rights – physician rights, right to health and patient rights Regulation of gene expression and epigenetic mechanisms LAB: Cell membrane potential, action potential (Theoretical - in classroom) LAB: DNA isolation - Spectrophotometric and electrophoretic analysis - PCR and its medical applications Group C Stem cell biology Medical applications of genetic engineering and gene therapy Paternalistic attitude in health services, professional relationships of physicians Protein synthesis and energetics General review LAB: Muscles of the lower extremity - Group II LAB: Muscles of the lower extremity - Group I Physiopathology
8. WEEK	**EXAM WEEK**

EVALUATION SYSTEM

	NUMBER	**CONTRIBUTION**
Attendance		
Laboratory		
Practice		
Area studies		
Course related internship (if exist)		
Homework		
Presentation		
Projects		
Exams	1	15%

RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM QUALIFICATION

		Contribution level				
	Program Qualification	1	2	3	4	5
1	Learning the organization's normal structure and functioning.					X
2	Learning the mechanisms of disease formation, know the clinical and diagnostic features.					
3	Can take the story of the patient and perform general systemic physical examination.	X				
4	It can apply basic medical interventions for diagnosis and treatment of diseases.	X				
5	Emergency diseases can be treated and referral centers can be referred for treatment services where necessary.	X				
6	Can practice preventive medicine and forensic medicine	X				
7	It has general information about the structure and functioning of the National Health System.			X		
8	Know their legal responsibilities and define ethical principles.					X

9	It can effectively perform first-line treatment of common diseases.	X				
10	Organize scientific meetings and conduct projects.	X				
11	To be able to use statistics and computer methods to evaluate the foreign language and scientific studies to follow the literature in the field of medicine		X			

ECTS (WORKLOAD TABLE)

Events	**Number**	**Time(Hour)**	**Total workload**
Course Time (exam week included: 8 x total course hours)	**107**	**1**	**107**
Laboratory	**21**	**2**	**42**
Practice			
Course related internship (if exist)			
Area study			
Working time out of class (preliminary study, enhancements)	**164**	**1**	**164**
Presentation / Seminar			
Project			
Homeworks			
Exams	**1**	**3**	**3**
Total workload			**316**

FACULTY OF MEDICINE

UNDERGRADUATE PROGRAM

INTRODUCTION TO BASIC MEDICAL SCIENCES IV			**TIP142**
ECTS 10 **14 CREDITS**	1. year – II. semester	Undergraduate	Compulsory
	Theoretical/Practical lab courses: 88+18h/8 week		Turkish
ANATOMY			
PROF. DR. ZAFER ARI			
ASST. PROF. BUSE NAZ ÇANDIR GÜRSES			
BIOPHYSICS			
PROF. DR. RÜSTEM NURTEN			
ASST. PROF. AYSUN YOLDAŞ			
ASST. PROF. YASİN ÇELİKOK			
PHYSIOLOGY			
PROF. DR. ASİYE NURTEN			
ASSOC. PROF. GÜLTEN ATEŞ ULUÇAY			
INTRODUCTION TO PUBLIC HEALTH			
PROF. DR. HATİCE FERDA DOĞAN			
HISTOLOGY AND EMBRYOLOGY			
ASSOC. PROF. AHMED AYDIN			
ASST. PROF. NUR ELAGÜL TOMBUL			
MEDICAL BIOCHEMISTRY			
PROF. DR. HALE ARAL			
MEDICAL ETHICS			
ASST. PROF. AYTEN ARIKAN			
HUMAN RELATIONS IN MEDICINE			
PROF. DR. EMEL SARI			

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ayten.arikan@yeniyuzyil.edu.tr

Course objectives
The general purpose of this course is to introduce the information about tissues, biochemistry of tissues, bone and muscle anatomies, muscle physiology and also, describe the principles of epidemiologic studies, teaching the rules about health studies and techniques. It is also pointed out understanding the patient communications clinically, describing the communication and especially describing the significance of the communications with patients have serious diagnosis and their relatives. Ethic rules in human studies as a part of medical ethics will be addressed.

Learning Outcomes and Sub-Skills
Students successful on this course,

20. Learnt different tissues,
21. Know the tissue biochemistry,
22. Know the bone and muscle anatomies,
23. Understood the muscle physiology,
24. Comprehend the principles of epidemiologic studies,
25. Know the definition of a scientific study and techniques in health area,
26. Understood the ethical rules and their importance in human studies,
27. Know the description of communication and learnt the importance of communication with patients.

Brief description of the course

In the context of this course, structures of tissues, tissue biochemistry, bone anatomy, muscle anatomy are taught to students. It is also pointed out the importance of the doctor-patient communication and taught how should be contact with patient have serious diagnosis and their relatives. Ethic rules in human studies as a part of medical ethics will be addressed.
Descriptions and techniques about epidemiologic studies are introduced. Studies and techniques applied in health area and principles are taught to the students.

Teaching Methods and Techniques

Although courses are narrated by instructor, discussion and class participation are provided to the students. A part of the courses is “Laboratory practices” that turn the theoretical knowledge learned in the course into practice.

Prerequisites: NONE

Course Books
Physiology

1. Guyton ve Hall. Tıbbi Fizyoloji. 12. baskı. Nobel Tıp Kitapevi. 2013.
2. William F. Ganong Ganong'un Tıbbi Fizyolojisi. 24. Baskı. Nobel Tıp Kitapevi. 2015
3. İnsan Fizyolojisi, İstanbul Tıp Kitabevleri; 2020

Anatomy

4. Gövsa Gökmen F. Sistemik Anatomi. İstanbul 2013,
5. Yıldırım M. İnsan Anatomisi, Genel Anatomi, Lokomotor Sistem, Nobel Kitapevi, İstanbul, 2005
6. Ata Anatomi, (Ed.) Tekdemir İ. İstanbul Tıp Kitabevi, İstanbul, 2025.

Medical Biochemistry

7. Lippincott Biyokimya (Çev. Ed.) Ulukaya E. Nobel Tıp Kitapevi, Ankara, 2007
8. Gürdöl F. Ademoğlu E, Biyokimya. Nobel Tıp Kitapevi Ankara, 2010.
9. Lehninger Principles of Biochemistry; 2008

Histology and Embryology

10. Demir, R. Histoloji Atlası. Palme Yayıncılık, 2008.
11. Müftüoğlu S, Kaymaz F, Atilla P (Çev). Temel Histoloji. Güneş Tıp Kitapevi, 2009
12. Solakoğlu S, Aytekin Y. Temel Histoloji. Nobel Tıp Kitapevi, İstanbul, 2009.
13. Baykal, B. (Çev.), Histoloji Konu Anlatımı ve Atlas (İlişkili Hücre Biyolojisi ve Moleküler Biyoloji ile), Ross, MH. ve Pawlina, W., Palme Yayıncılık, 2014.
14. Solakoğlu, S., Erdoğan, A. ve Mutlu, HS. (Çev), Junqueira Temel Histoloji Konu ve Atlas, Mescher AL., Güneş Tıp Kitabevi, 2019.

Supplementary Book

15. Kuruş, M., HİSTOLOJİ: Hücre, Doku, Sistemler Teknikler-Moleküller-Laboratuvar ve Klinik Yönleriyle Güncel Yaklaşımlar, Akademisyen Kitabevi, 2020.

Medical Ethics

16. Bayat A H. Tıp Tarihi. Merkezefendi Geleneksel Tıp Derneği Yayınları. İstanbul, 2010
17. Çağdaş Tıp Etiği. Nobel Tıp Kitabevi, İstanbul, 2003
18. Biyomedikal Etik Prensipleri, Tom L. BEAUCHAMP, James F. CHILDRESS, 2017

Public Health

19. Epidemiology Fourth Edition. Leon Gordis Elsevier 2009
20. Basic Epidemiyology. R Bonita et al. WHO 2006.
21. Epidemiyoloji Tuhan Akbulut, H. Hilmi Sabuncu. Sistem Yayıncılık İstanbul 1993.
22. Epidemiyoloji Sabahat Tezcan Hacettepe Üniv Yayınları Ankara 1992
23. Sağlıkta Araştırma Teknikleri ve Analiz Yöntemleri. Gazanfer Aksakoğlu. Dokuz Eylül Üniv. Yayınları. İzmir 2001
24. Health Economics Fourth Edition. Charles E. Phelps New York 2008
25. Sağlık Ekonomisi ve Sağlık Yönetimi, Prof.Dr Coşkun Can Aktan/ Dr. Ulvi Saran, Aura Kitapları, İstanbul, 2007
26. Hacettepe Nüfus Etütleri Enstitüsü. Türkiye Nüfus Ve Sağlık Araştırmaları
27. Medical Geography Third Edition. Melinda S. Meade, Michael Emch. The Guilford Press New York 2010
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COURSE CONTENT

Week	WEEKLY SUBJECTS AND RELATED PRELIMINARIES
1. WEEK	**HOLIDAY**
2. WEEK	Fundamental principles of medical ethics Introduction to histology, tissues Informed consent, medical confidentiality Environment and human, environmental education Epithelial tissue, exocrine glands Theory of knowledge Principles of cybernetics Skeleton of the upper extremity 1 (scapula, clavicula, humerus) Environmental endocrine disruptors Epithelial tissue, endocrine glands and specialized epithelium Connective tissue histology Skeleton of the upper extremity 2 (radius, ulna, ossa manus) Connective tissue cells Joints of the upper extremity 1 (articulatio acromioclavicularis, articulatio sternoclavicularis, articulatio humeri) Joints of the upper extremity 2 (articulatio cubiti, articulationes manus) LAB: Scapula, clavicula, humerus - Group I / LAB: Epithelial tissue Group D LAB: Scapula, clavicula, humerus - Group II / LAB: Epithelial tissue Group A Skeletal muscle physiology
3. WEEK	Social responsibilities in reducing environmental problems LAB: Epithelial tissue Group B LAB: Epithelial tissue Group E Connective tissue biochemistry Muscles of the upper extremity 1 (shoulder girdle muscles and arm muscles) Types of connective tissue Muscles of the upper extremity 2 (forearm muscles 1) Genetic engineering Health in disasters Home, occupational and traffic accidents Muscles of the upper extremity 3 (forearm muscles 2 and hand muscles) Definition and importance of communication - Negative communication Positive communication and its benefits Application areas of genetic engineering Cartilage tissue Bone tissue Skeletal muscle contraction

4. WEEK	LAB: Epithelial tissue Group F LAB: Epithelial tissue Group C Transition from cells to higher organisms 1-2 LAB: Radius, ulna, ossa manus - Group II LAB: Radius, ulna, ossa manus - Group I Bone growth LAB: Connective tissue Group A LAB: Connective tissue Group E Collagen synthesis and collagenopathies Axial skeleton 1 (columna vertebralis) LAB: General review of upper extremity bones and joints - Group I LAB: General review of upper extremity bones and joints - Group II Cancer problem Changing lifestyles and their effects on health Nervous tissue; neuron, axon, dendrite, glial cells Axial skeleton 2 (os sacrum, os coccygis, pelvis and pelvic diameters) Communicating with children with health problems and their families How should we communicate properly with people with disabilities? Axial skeleton 3 (thoracic skeleton) LAB: General review of upper extremity muscles - Group II / LAB: Connective tissue Group B LAB: General review of upper extremity muscles - Group I / LAB: Connective tissue Group D Smooth muscle contraction
5. WEEK	Ethical rules in human research and organ transplantation Biomechanics LAB: Biomechanics (Theoretical - in classroom) LAB: Columna vertebralis and pelvis - Group I LAB: Columna vertebralis and pelvis - Group II Changing lifestyles and their effects on health LAB: Connective tissue Group F LAB: Connective tissue Group C Bone biochemistry 1-2 Trunk muscles 1 (musculi thoracis, musculi abdominis 1) Ethical rules regarding the beginning and end of life Trunk muscles 2 (musculi abdominis 2, musculi dorsi) Demographic structure and health, geography and health How can we communicate healthily with elderly patients, especially those with Alzheimer's disease? How can we help? How can we help patients with a poor prognosis whose treatment options are limited or running out? Skeleton of the head 1 (os frontale, os parietale) Skeleton of the head 2 (os occipitale, os ethmoidale) LAB: Thoracic skeleton - Group II / LAB: Cartilage and bone tissue Group B LAB: Thoracic skeleton - Group I / LAB: Cartilage and bone tissue Group F Muscle physiology in exercise

6. WEEK	LAB: General review of trunk muscles - Group I / LAB: Cartilage and bone tissue Group E LAB: General review of trunk muscles - Group II / LAB: Cartilage and bone tissue Group A LAB: Muscle contraction (Theoretical - in classroom) LAB: Os frontale, os parietale, os occipitale, os ethmoidale - Group II LAB: Os frontale, os parietale, os occipitale, os ethmoidale - Group I Ethical rules regarding the beginning and end of life Biological receptors and psychophysics LAB: Cartilage and bone tissue Group D / LAB: Muscle contraction Group E LAB: Cartilage and bone tissue Group C / LAB: Muscle contraction Group F Muscle tissue biochemistry Muscle contraction and metabolism Muscle tissue; skeletal muscle, smooth muscle, cardiac muscle Molecular biophysical methods 1-2 Skeleton of the head 3 (os sphenoidale, os temporale) How can we help patients with a poor prognosis whose treatment options are limited or running out? How can we help the relatives of dying patients? Facial bones 1 Facial bones 2, articulatio temporomandibularis LAB: Os sphenoidale, os temporale and general review of the skull - Group I / LAB: Nervous and muscle tissue Group D LAB: Os sphenoidale, os temporale and general review of the skull - Group II / LAB: Nervous and muscle tissue Group B Masticatory muscles, neck muscles 1
7. WEEK	LAB: Facial bones - Group II / LAB: Nervous and muscle tissue Group A / LAB: Muscle contraction Group C LAB: Facial bones - Group I / LAB: Nervous and muscle tissue Group F Neck muscles 2 LAB: Facial bones, articulatio temporomandibularis, masticatory muscles - Group I LAB: Facial bones, articulatio temporomandibularis, masticatory muscles - Group II International declarations and oaths of medical ethics LAB: Muscle contraction Group D LAB: Nervous and muscle tissue Group E / LAB: Muscle contraction Group A LAB: Nervous and muscle tissue Group C / LAB: Muscle contraction Group B Muscles of facial expression LAB: Neck muscles and muscles of facial expression - Group II LAB: Neck muscles and muscles of facial expression - Group I Imaging methods used in medicine 1-2
8. WEEK	**EXAM WEEK**

EVALUATION SYSTEM

SEMESTER STUDIES	NUMBER	CONTRIBUTION
Attendance		
Laboratory		
Practice		
Area studies		
Course related internship (if exist)		
Homework		
Presentation		
Projects		
Exams	1	15%

RELATIONSHIP BETWEEN COURSE LEARNING OUTCOMES AND PROGRAM QUALIFICATION

		Contribution level				
Program Qualification		1	2	3	4	5
1	Learning the organization's normal structure and functioning.					X
2	Learning the mechanisms of disease formation, know the clinical and diagnostic features.		X			
3	Can take the story of the patient and perform general systemic physical examination.	X				
4	It can apply basic medical interventions for diagnosis and treatment of diseases.	X				

5	Emergency diseases can be treated and referral centers can be referred for treatment services where necessary.	X				
6	Can practice preventive medicine and forensic medicine	X				
7	It has general information about the structure and functioning of the National Health System.			X		
8	Know their legal responsibilities and define ethical principles.					X
9	It can effectively perform first-line treatment of common diseases.	X				
10	Organize scientific meetings and conduct projects.	X				
11	To be able to use statistics and computer methods to evaluate the foreign language and scientific studies to follow the literature in the field of medicine			X		

ECTS (WORKLOAD TABLE)

Events	**Number**	**Time(Hour)**	**Total workload**
Course Time (exam week included: 8 x total course hours)	**88**	**1**	**88**
Laboratory	**18**	**1**	**18**
Course related internship (if exist)			
Area study			
Working time out of class (preliminary study, enhancements)	**176**	**1**	**176**
Presentation / Seminar			
Project			
Homework			
Exams	**1**	**3**	**3**
Total workload			**285**