**T.C.**

**ATILIM UNIVERSITY FACULTY OF MEDICINE**

**EDUCATION IN 2021-2022 ACADEMIC YEAR**

**ACADEMIC CALENDAR**

**Laboratory Lessons:**

1. Normal, molar, percent solutions (1 hour, Dr. Kılıç)
2. pH-meter (1 hour, Dr. Kılıç)
3. Spectrophotometer & Chromatography (1 hour, Dr. Kılıç)
4. Fundamentals of microscopy (1 hour, Dr. Aykanat)
5. Cellular adaptation and injury (1 hour, Dr. Boduroğlu & Dr. Yurdakan)
6. Gram staining (1 hour, Dr. Acar & Dr. Tülek)

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| **COMMITTEE NAME** | **STARTING DATE** | **COMPLETION DATE** |
| **MED 101** | 27.09.2021 | 22.10.2021 |
| **MED 103** | 25.10.2021 | 10.12.2021 |
| **MED 105** | 13.12.2021 | 13.01.2022 |
| **MED 102** | 07.02.2022 | 18.03.2022 |
| **MED 104** | 21.03.2022 | 29.04.2022 |
| **MED 106** | 02.05.2022 | 10.06.2022 |

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| **COMMITTEE NAME** |
|  | **MED 101** | **MED 102** | **MED 103** | **MED 104** | **MED 105** | **MED 106** |
| **ANATOMY PRACTICAL EXAM DATE** |  |  | - |  |  |  |
| **HISTOLOGY AND EMBRYOLOGY PRACTICAL EXAM DATE** |  |  | - |  |  |  |
| **COMMITTEE EXAM DATE** |  |  | 10.12.2021 |  |  |  |

**MED103 THE CELL**

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| **PHASE I COORDINATOR** | Prof. Dr. Veli Cengiz ÖZALP |
| **PHASE I VICE COORDINATOR** | Asst. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT |
| **CHAIRMAN OF THE MED 103 COMMITTEE** | Prof. Dr. Nedret Kılıç |
| **MED 103 COMMITTEE DATE RANGE** | 25.10.2021 - 10.12.2021 |
| **ACADEMIC STAFF AT THE MED 103 COMMITTEE** | Prof. Dr. Nedret KILIÇ - Medical BiochemistryProf. Dr. Necla TÜLEK - Medical MicrobiologyProf. Dr. Gamze YURDAKAN – Medical PathologyProf. Dr. Ahmet SALTIK – Public HealthProf. Dr. Ali ACAR - Medical MicrobiologyProf. Dr. Veli Cengiz ÖZALP - Medical BiologyAssoc. Prof. Dr. Filiz KORKMAZ ÖZKAN - BiophysicsAsst. Prof. Dr. Gökşen ÖZ - Medical PharmacologyAsst. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT - Histology and EmbryologyAsst. Prof. Dr. Esin BODUROĞLU - Medical PathologyAsst. Prof. Dr. Ali Doğan DURSUN - PhysiologyAsst Prof. Dr. Badegül SARIKAYA - Physiology |
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**ACADEMIC STAFF** | **THEORETICAL LECTURE TIME** | **PRACTICAL LECTURE TIME** | **INTERACTIVE EDUCATION****TIME** | **TOTAL TIME** |
| **Histology and Embryology** | 4 | 1 | - | 5 |
| **Medical Microbiology** | 13 | 1 | - | 14 |
| **Medical Pharmacology** | 9 | - | - | 9 |
|  **Medical Biochemistry** | 7 | 3 | - | 10 |
| **Medical Pathology** | 8 | 1 | - | 9 |
| **Physiology** | 5 | - | - | 5 |
| **Medical Biology** | 20 | - | - | 21 |
| **Biophysics** | 6 | - | - | 6 |
| **Public Health** | 6 | - | - | 6 |
| **TOTAL** | 78 | 6 | - | 84 |

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| **Office Hour** | - |

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| **CONTENT OF THE MED 103 COMMITTEE**  |
| The basic cell structure, DNA and RNA structure, methods used in DNA isolation, cellular organelles, their structure and function, general overview to cell and cytoplasm, membranous and non-membranous organelles, cell nucleus, cellular secretion, cell skeleton, motor proteins, movement and polarisation in the cell, mechanics of cell division and cytokinesis, laboratory safety and basic principle of microscopy, tissue preparation techniques, intracellular structures, transition of drugs through the biological membrane, pharmacokinetics of drugs, amino acids, introduction to microbiology, bacteria,viruses |
| **MED 103 COMMITTEE AIM** |
| To introduce basic biochemistry, genetics and microbiology in order to learn the normal structure, function and their pathological conditions. To be able to understand basic interaction techniques and medical applications. |
| **MED 103 COMMITTEE LEARNING OBJECTIVES** |
| The students who succeeded in this course;1. Describes the basics of cell structure and cytoskeleton; the intracellular communication pathways.
2. Explains the structure and function of DNA and RNA that store genetic information and interprets the relation between them; DNA isolation from cell.
3. Describes the structures and functions of organelles found in cell.
4. Describes the physiological features of homeostasis and properties of body fluid compartments.
5. Explains the transport system of substances through cell membrane.
6. Explains the electrical electrical potential mechanisms and action potential in a neuron.
7. Understands the mechanism of protein synthesis including transcription, translation, posttrancriptional and posttranslational modifications and intracellular protein trafficking.
8. Lists the cell structures of microorganisms.
9. Understands the classification and metabolism of bacteria; bacterial genetics.
10. Explains the mechanisms of bacterial pathogenesis.
11. Describes the classification, structure and replication of viruses; viral pathogenesis.
12. Describes the structure of a cell under microscope.
13. Applies basic cultivation techniques.
14. Describes the structures, reactions of amino acids, peptides and proteins.
15. Understands the structures of hydrocarbons and chemical bonds.
16. Understands how to calculate normality, molarity and percent volumes of solutions.
17. Understands how to prepare buffer solutions and measure pH.
18. Describes the principles of bioenergetics.
19. Explains cellular response to stress and noxious stimuli.
20. Describes cellular injury and cell death.
21. Describes the drug and routes and mechanism of drug administration.
22. Distinguishes cell membrane, nucleus, cytoplasm and organelles with histochemical dyes.
23. Examines and explains the parts of the microscope.
24. Sorts cell skeleton components and indicates their differences.
25. Explains the content of physiology science, establishes a relationship between physiology and clinics; Defines homeostasis;
26. Explains the regulation mechanisms of body functions;
27. Explains control systems;
28. Defines the physiological importance of feedback systems
29. Defines the body fluid compartments (intracellular and extracellular fluid);
30. Explains the content differences of fluid compartments;
31. Defines the physiological importance of body fluids
32. Describes the functions of the cell membrane;
33. Explains the selective permeability property of the cell membrane;
34. Explains the properties of structural elements of the cell membrane, their relations with each other, and their functional importance.
35. Explains the transport mechanisms in the cell membrane;
36. Describes the role that osmotic pressure and hydrostatic pressures play together in body fluid balance;
37. Expalains the difference between osmotic and oncotic pressure and defines the physiological meaning of these pressures
38. Explains the signal transduction ways in the control of cells with chemical messengers
39. Defines secondary messenger molecules
40. Explains receptor localizations and differences in response
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| **RECOMMENDED BOOKS**1. Emery's Elements of Medical Genetics (15th Edition); Peter D. Turnpenny, Sian Ellard; Elsevier, Philadelphia, 2017.
2. Harper’s Illustrated Biochemistry (31st Edition); Robert K. Murray, David A. Bender, Kathleen M. Botham, Peter J. Kennelly, Victor W. Rodwell, P. Anthony Weil McGrawHill-Lange, 2018
3. Jawetz, Melnick & Adelberg’s Medical Microbiology (27th Edition);‎ Karen C. Carroll,‎ Stephen A. Morse, Timothy Mietzner, Steve Miller; McGraw-Hill, China, 2016.
4. Lippincott Illustrated Reviews: Biochemistry (7th Edition); Denise R. Ferrier; Lippincott Wilwims & Wilkins; Philadelphia, 2017.
5. Marks’ Basic Medical Biochemistry A Clinical Approach (5th Edition); Michael Lieberman, Alisa Peet; Wolters Kluwer, Philadelphia, 2018.
6. Thompson & Thompson Genetics in Medicine (8th Edition); Robert L. Nussbaum, Roderick R. McInnes, Huntington F. Willard; ; Elsevier, Philadelphia, 2016.
7. Histology and Cell Biology: An Introduction to Pathology (4th Edition); Abraham Kierszenbaum Laura Tres, Elsevier Saunders, Philadelphia, 2015.
8. Robbins Basic Pathology (10th edition); 2018 [edited by] Vinay Kumar, Abul K. Abbas, Jon C. Aster
9. Cell and Molecular Biology (2nd edition); Nalini Chandar, PhD, Susan Viselli, PhD, Lipincot Wiliams & Wilkins, 2019.
10. Molecular Cell Biology (8th edition); Harvey Lodish, W.H.Freeman & Co Ltd, 2016.
11. Molecular Biology of the Cell (6th edition); Bruce Alberts, W. W. Norton & Company, 2015.
12. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, McGraw-Hill Education, 2019.
13. Medical Microbiology (8th Edition); Murray, Rosenthal, Pfaller, 2016.
14. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases (9th Edition); Bennett, JE, Dolin R, Blaser MJ. Elsevier, 2019.
15. Lehninger Principles of Biochemistry (7th Edition), David L. Nelson, Michael M. Cox W H Freeman & Co, 2017.
16. Textbook of Biochemistry with Clinical Correlations (7th Edition); Thomas M. Devlin (Editor) John Wiley & Sons, 2011.
17. Integrative Medical Biochemistry: Examination and Board Review, 1st Edition Michael W. King, Mc Graw Hill
18. Bertram G. Katzung, Todd W. Vanderah - Basic & Clinical Pharmacology, 15th Ed., McGraw-Hill Education (2020)
19. Rang and Dale’s Pharmacology, Elsevier Ltd, 9th Ed. 2020
20. Katzung & Trevor’svPharmacologyExamination & Board Review. LANGE medical book 12th Ed. 2019
21. Lippincott® Illustrated Reviews: Pharmacology 7th Ed. Wolters Kluwer 2019
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| **MED 103 COMMITTEE EXAM WEEK** |
| **DATE** | **EXAM NAME** | **EXAM HOUR** |
| 10.12.2021 | MED 103 Committee Exam | 10:30-13:20 |
| **Teaching Methods and Techniques** |

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| [x]  Lecture | [ ]  Case based learning | [ ] Case discussion | [ ] Student presentation |
| [ ]  Role playing | [ ]  Problem Based Learning | [ ] Project | [ ]  Homework |
| [x] Laboratory practice | [x]  Team Based Learning  | [x]  Self Learning |  |

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| **Evaluation Method** | Theoretical Exam (85%), Team Based Learning (10%), Practical Exam (Medical Biochemistry: 4%; Medical Microbiology 1%) |
| **Language of lectures, practicals and all other applications** | English |