**T.C.**

**ATILIM UNIVERSITY FACULTY OF MEDICINE**

**EDUCATION IN 2024-2025 ACADEMIC YEAR**

**ACADEMIC CALENDAR**

**Laboratory Lessons:**

1. Karyotyping (Dr. Sönmez & Dr. Tevlek)
2. Fetal and maternal histology (Dr. Aykanat)
3. Electrophoresis and SNP detection (Dr. Sönmez & Dr.Tevlek)

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| **COMMITTEE NAME** | **STARTING DATE** | **COMPLETION DATE** |
| **MED 105** | 09.12.2024 | 10.01.2025 |

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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** |  |  |  |  | - |  |
| **MEDICAL BIOLOGY PRACTICAL EXAM DATE** |  |  |  |  | - |  |
| **MEDICAL BIOCHEMISTRY PRACTICAL EXAM** |  |  |  |  | - |  |
| **COMMITTEE EXAM DATE** |  |  |  |  | 10.01.2025 |  |

**MED105 GROWTH AND DEVELOPMENT**

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| **PHASE I COORDINATOR** | Assoc. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT | | | |
| **CHAIR OF THE MED 105 COMMITTEE** | Prof. Dr. Çağla Sönmez | | | |
| **MED 105 COMMITTEE DATE RANGE** | 09.12.2024-10.01.2025 | | | |
| **ACADEMIC STAFF AT THE**  **MED 105 COMMITTEE** | Prof. Dr. Ahmet SALTIK- Public Health  Prof. Dr. Çağla Sönmez- Medical Biology  Assoc. Prof. Dr. Selma USLUCA-Medical Microbiology  Assoc. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT- Histology and Embryology  Asst. Prof. Dr. Sami EREN- Medical Pharmacology  Asst. Prof. Dr. Atakan TEVLEK- Medical Biology  Asst. Prof. Dr. Onur BULUT- Medical Biochemistry | | | |
| |  |  | | --- | --- | |  |  |   **ACADEMIC STAFF** | **THEORETICAL LESSON TIME** | **PRACTICAL LESSON TIME** | **INTERACTIVE EDUCATION**  **TIME** | **TOTAL TIME** |
| **Medical Biochemistry** | 4 | - | - | 4 |
| **Medical Biology** | 18 | 2 | 1 (Team-based learning) | 21 |
| **Histology and Embryology** | 11 | 1 | 3 (Case-based learning & Flipped-class) | 15 |
| **Medical Pharmacology** | 6 | - | - | 6 |
| **Public Health** | 2 | - | - | 2 |
| **Medical Microbiology** | 5 | - | - | 5 |
| **TOTAL** | 46 | 3 | 4 | 53 |

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| **CONTENT OF THE MED 105 COMMITTEE** |
| Understanding the principles of inheritance, chromosomal abnormalities, mutations and polymorphisms, epigenetics, karyotype analysis, DNA damage and repair mechanisms, cell death mechanisms, biochemistry of nucleic acids, enzymes, carbohydrates, fatty acids, phospholipids, steroids, fertilization, implantation and development of human and ongoing of embryonic period, gametogenesis, pharmacokinetics & pharmacodynamics of drugs, pharmacogenetics. |
| **MED 105 COMMITTEE AIM** |
| To teach the fundamental concepts of inheritance, chromosomal abnormalities, types of mutations and DNA repair mechanisms and to give information about the biochemistry of nucleic acids, pharmacokinetics & pharmacodynamics of drugs, pharmacogenetics, development of human embryo and extraembryonic structures, cellular injury and cell death mechanisms. |
| **MED 105 COMMITTEE LEARNING OBJECTIVES** |
| The students who succeeded in this course;   1. Describes the principles of inheritance. 2. Describes the cellular proliferation and the regulation of it. 3. Describes the cellular aging process. 4. Describes the types of cell death and the mechanisms of them. 5. Explains the mutation, its varieties, mechanisms of occurrence and detection methods. 6. Explains the packaging of DNA into chromosome and the molecules taking role in this process. 7. Explains DNA repair mechanisms. 8. Explains how nucleic acids are digested and absorbed in the human body. 9. Summarizes the importance and steps of purine and pyrimidine metabolism. 10. Explains the development of cells and tissues, the relationship and differentiation between cells in embryological period. 11. Explains the development of human embryo and extraembryonic structures. 12. Identifies anomalies that may develop during embryological period with their mechanisms. 13. Explains the fertilization and implantation. 14. Explains the embryonic stages. 15. Explains the developmental events in fetal period. 16. Explains the reasons for the development of birth defects. 17. Indicates the formation mechanism of multiple pregnancies. 18. Indicates the methods used in prenatal diagnosis. 19. Explains the birth defects. 20. Classifies each parasite. 21. Describes the structure of each parasite. 22. Explains the parasites’ life cycles. 23. Discusses the relationship between each parasite and its host. 24. Explains the sources of infection route of entry and exit of parasites in the human body, biological infection period, impact on host of parasite, host response and pathogenesis. 25. Understands the medical importance of parasites. Suggest various methods for the prevention and control of the parasite. 26. Compares the structure of fungal cells to other eukaryotic. 27. Defines mycology and describe the ecological, medical and commercial importance of fungi. 28. Describes fungal classification and taxonomic features. 29. Describes the classification of pathogenic fungi. 30. Describes diseased caused by mitochondrial mutations. 31. Compares and contrasts yeasts, molds and dimorphic fungi and give examples of each. 32. Describes examples of asexual and sexual reproduction of fungi. 33. Defines fungal structure, antigenicity, pathogenicity and immune response. 34. Differs Mendelian, non-Mendelian, polygenic, and multifactorial inheritance, some molecular events underlying them, SNP identification to study them, and genetic control mechanisms 35. Describes and summarizes the basic concepts of pharmacokinetics and pharmacodynamics. 36. Knows and summarizes pharmacogenetics 37. Knows how to conduct a karyotype analysis. 38. Knows how to do agarose gel electrophoresis. 39. Describes the fundamental aspects of epigenetics. |
| **RECOMMENDED BOOKS**   1. Harper’s Illustrated Biochemistry (30th Edition); Victor W. Rodwell, David Bender, Kathleen M. Botham, Peter J. Kennelly, P. Anthony Weil; McGraw-Hill, 2015. 2. Lippincott Illustrated Reviews: Biochemistry (Seventh Edition); Denise R. Ferrier; Lippincott Wilwims & Wilkins; Philadelphia, 2017. 3. Nelson, D.L. & Cox, M.M. (2013). Lehninger principles of biochemistry (6th ed.). W.H. Freeman and Company. 4. Marks’ Basic Medical Biochemistry A Clinical Approach (5th Edition); Michael Lieberman, Alisa Peet; Wolters Kluwer, Philadelphia, 2018. 5. Thompson & Thompson Genetics in Medicine (8th Edition); Robert L. Nussbaum, Roderick R. McInnes, Huntington F. Willard; Elsevier, Philadelphia, 2016. 6. The Developing Human (10th Edition); T. V. N. Persaud,Mark G. Torchia Keith L. Moore, Elsevier Health Books, 2015. 7. Cell and molecular biology (2th edition); Nalini Chandar, PhD, Susan Viselli, PhD, Lipincot Wiliams & Wilkins, 2019. 8. Molecular cell biology (8th edition); Harvey Lodish, W.H.Freeman & Co Ltd, 2016. 9. Klug, Cummings, Spencer, Palladino, 2016, Concepts of Genetics, Pearson, 11th Edition 10. Molecular biology of the cell (7th edition); Bruce Alberts, W. W. Norton & Company. 11. Katzung's Basic and Clinical Pharmacology (Ed. Todd W. Vanderah),16th Edition, McGraw Hill Lange, 2023. 12. Goodman and Gilman's The Pharmacological Basis of Therapeutics (Eds: L. Brunton,‎ B. Knollmann), 14th Edition, McGraw Hill, 2022 13. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, McGraw-Hill Education, 2019. 14. Medical Microbiology (9th Edition); Murray, Rosenthal, Pfaller, 2020. 15. Introduction to Molecular and Cell Biology. K. Mattaini, licensed under a Creative Commons Attribution-NonCommercial 4.0 International License. 2020. 16. Medical Genetics – An Integrated Approach. G. B. Schaefer and J. N. Thompson, Jr. McGraw Hill. 2014. 17. Perinatal Genetics. M. E. Norton, J. A. Kuller and L. Dugoff. Elsevier. 2019. 18. Human Genes and Genomes. Science, Health, Society. L. E. Rosenberg and D. D. Rosenberg. Elsevier. 2012. 19. Thompson & Thompson Genetics in Medicine, Eight Edition. R. L. Nussbaum, R. R. McInnes, H. F. Willard and A. Hamosh. Elsevier. 2016. 20. Campbell Biology. Ninth Edition. J. B. Reece, L. A. Urry, M. L. Cain, S. A. Wasserman, P. V. Minorsky and R. B. Jackson. Benjamin Cummings, Pearson. 2011. 21. Clinical Genomics. Second Edition. S. Kulkarni and S. Roy. Elsevier. 2015. 22. Basic Techniques in Molecular Biology. Springer Lab Manuals. S. [Surzycki](https://www.google.com.tr/search?hl=tr&tbo=p&tbm=bks&q=inauthor:%22Stefan+Surzycki%22&source=gbs_metadata_r&cad=3) Springer, Berlin, Heidelberg. 2000 |

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| **MED 105 COMMITTEE EXAM WEEK** | | |
| **DATE** | **EXAM NAME** | **EXAM HOUR** |
| 10.01.2025 | MED 105 Committee Exam | 09:30-12:20 |
| **Teaching Methods and Techniques** | |  |  |  |  | | --- | --- | --- | --- | | Lecture | Case based learning | Case discussion | Student presentation | | Role playing | Problem Based Learning | Project | Homework | | Laboratory practice | Team Based Learning | Self Learning | Flipped Class | | |
| **Evaluation Method** | Theoretical Exam (90%), Team-Based Learning (3%), Flipped-class (2%), Quiz (5%; Medical Biology: 1%, Histology & Embryology: 1%, Medical Microbiology: 1%,Medical Biochemistry: 1%, Medical Pharmacology: 1%) | |
| **Language of lectures, practicals and all other applications** | English | |