**T.C.**

**ATILIM UNIVERSITY FACULTY OF MEDICINE**

**EDUCATION IN 2023-2024 ACADEMIC YEAR**

**ACADEMIC CALENDAR**

**Laboratory Lessons:**

1. Cellular adaptation and injury (Dr. Yurdakan Özyradımcı, 1 hour)
2. Determination of HDL cholesterol (Dr. Kılıç, 1 hour)
3. Fetal and maternal histology (Dr. Aykanat-Dr. Süzer, 1 hour)

|  |  |  |
| --- | --- | --- |
| **COMMITTEE NAME** | **STARTING DATE** | **COMPLETION DATE** |
| **MED 105** | 04.12.2023 | 05.01.2024 |

|  |
| --- |
| **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** |  |  |  |  | 05.01.2024 |  |

**MED105 GROWTH AND DEVELOPMENT**

|  |  |
| --- | --- |
| **PHASE I COORDINATOR** | Asst. Prof. Dr. Gökşen ÖZ |
| **CHAIR OF THE MED 105 COMMITTEE** | Prof. Dr. Yekbun ADIGÜZEL |
| **MED 105 COMMITTEE DATE RANGE** | 04.12.2023- 05.01.2024 |
| **ACADEMIC STAFF AT THE** **MED 105 COMMITTEE** | Prof. Dr. Necla TÜLEK- Medical MicrobiologyProf. Dr. Ahmet SALTIK- Public HealthProf. Dr. Nedret KILIÇ- Medical BiochemistryProf. Dr. Gamze YURDAKAN ÖZYARDIMCI - PathologyProf. Dr. Yekbun ADIGÜZEL- Medical Biology and GeneticsAssoc. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT- Histology & EmbryologyAsst. Prof. Dr. Gökşen ÖZ- Medical PharmacologyAsst. Prof. Dr. Evren TUNCER- Medical PharmacologyAsst. Prof. Dr. Ayşegül SÜZER - Histology & Embryology |
|

|  |  |
| --- | --- |
|  |  |

**ACADEMIC STAFF** | **THEORETICAL LESSON TIME** | **PRACTICAL LESSON TIME** | **INTERACTIVE EDUCATION****TIME** | **TOTAL TIME** |
| **Medical Biochemistry** | 23 | 1 | 2 (Flipped class) | 26 |
| **Medical Biology**  | 11 | - | 3 (TBL)2 (Flipped class) | 16 |
| **Pathology** | 5 | 1 | - | 6 |
| **Histology and Embryology** | 11 | 1 | 2 (Case base learning) | 14 |
| **Medical Pharmacology** | 7 | - | - | 7 |
| **Public Health** | 5 | - | - | 5 |
| **Medical Microbiology** | 8 | - | - | 8 |
| **TOTAL** | 70 | 3 | 9 | 82 |

|  |  |
| --- | --- |
| **Office Hour** | - |

|  |
| --- |
| **CONTENT OF THE MED 105 COMMITTEE**  |
| Understanding the genetic material structure and abnormalities, the cell cycle, the mechanisms effecting and regulating the cell cycle, DNA 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, general concept of inflammation, neoplasm, molecular basis of cancer epidemiology, pharmacodynamics of drugs.  |
| **MED 105 COMMITTEE AIM** |
| To give information about the genetic control and biochemistry of nucleic acids, pharmacodynamics of drugs, development of human embryo and extraembryonic structures, cellular response and noxious stimuli, cellular injury and cell death mechanisms, intracellular accumulations and pathologic calcification  |
| **MED 105 COMMITTEE LEARNING OBJECTIVES** |
| The students who succeeded in this course;1. Describes the cell division and its results.
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 carbohydrates are digested and absorbed in the human body.
9. Distinguishes the mechanisms between the aerobic and anaerobic glycolysis.
10. Describes the processes occurring in gluconeogenesis, glycogenesis, glycogenolysis, citric acid cycle and pentose phosphate pathway and the importance of utilization of other carbohydrates through glycolytic pathway.
11. Summarizes the steps in lipid digestion, absorption, and transport.
12. Explains how lipids are used for energy and stored in the body.
13. Explains how ketone bodies are synthesized and utilized in the body.
14. Explains how nucleic acids are digested and absorbed in the human body.
15. Summarizes the importance and steps of purine and pyrimidine metabolism.
16. Identifies various free radical detoxifying enzymes and antioxidants.
17. Explains oxidative stress and identifies diseases associated with oxidative stress.
18. Explains the development of cells and tissues, the relationship and differentiation between cells in embryological period.
19. Explains the development of human embryo and extraembryonic structures.
20. Identifies anomalies that may develop during embryological period with their mechanisms.
21. Explains the fertilization and implantation.
22. Explains the embryonic stages.
23. Explains the developmental events in fetal period.
24. Explains the reasons for the development of birth defects.
25. Indicates the formation mechanism of multiple pregnancies.
26. Indicates the methods used in prenatal diagnosis.
27. Explains the birth defects.
28. Describes the inflammation.
29. Describes the tissue repair.
30. Describes the neoplasm and epidemiology.
31. Defines tissue damage repair mechanisms, types and important examples.
32. Defines cellular response and noxious stimuli, cellular injury and cell death mechanisms
33. Describes intracellular accumulations and pathologic calcifications
34. Classifies each parasite.
35. Describes the structure of each parasite.
36. Explains the parasites’ life cycles.
37. Discusses the relationship between each parasite and its host.
38. 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.
39. Understands the medical importance of parasites. Suggest various methods for the prevention and control of the parasite.
40. Compares the structure of fungal cells to other eukaryotic.
41. Defines mycology and describe the ecological, medical and commercial importance of fungi.
42. Describes fungal classification and taxonomic features.
43. Describes the classification of pathogenic fungi.
44. Identifies major cell structures and explain their associated functions.
45. Compares and contrasts yeasts, molds and dimorphic fungi and give examples of each.
46. Describes examples of asexual and sexual reproduction of fungi.
47. Defines fungal structure, antigenicity, pathogenicity and immune response.
48. Differs Mendelian, non-Mendelian, polygenic, and multifactorial inheritance, some molecular events underlying them, DNA isolation and SNP identification to study them, and genetic control mechanisms
 |
| **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. Marks’ Basic Medical Biochemistry A Clinical Approach (5th Edition); Michael Lieberman, Alisa Peet; Wolters Kluwer, Philadelphia, 2018.
4. Thompson & Thompson Genetics in Medicine (8th Edition); Robert L. Nussbaum, Roderick R. McInnes, Huntington F. Willard; Elsevier, Philadelphia, 2016.
5. The Developing Human (10th Edition); T. V. N. Persaud,Mark G. Torchia Keith L. Moore, Elsevier Health Books, 2015.
6. Cell and molecular biology (2th edition); Nalini Chandar, PhD, Susan Viselli, PhD, Lipincot Wiliams & Wilkins, 2019.
7. Molecular cell biology (8th edition); Harvey Lodish, W.H.Freeman & Co Ltd, 2016.
8. Molecular biology of the cell (6th edition); Bruce Alberts, W. W. Norton & Company,2015.
9. Robbins Basic Pathology (10th edition), Vinay Kumar, Abul K. Abbas, Jon C. Aster, 2018.
10. Understanding Pathophysiology First canadian Ed. 2018 by Elsevier Inc. Sue Huether; Kelly PowerKean; Mohamed ElHussein.
11. Pathophysiology of Diseases: An introduction in clinical medicine 8 ed. 2019 by McGraw-Hill Education; Lange Inc. Gary D. Hammer, MD, PhD Stephen J. McPhee, MD.
12. Pathophysiology: The biologic basis for diseases in adults and children 8th ed. 2019 by Elsevier Inc. Kathryn L. McCance, MS, PhD Sue E. Huether, MS, PhD Valentına L. Brashers, Neal S. Rote, PhD.
13. Rapid Review Pathology, Fifth Edition 2019 by Elsevier, Inc. Edward F. Goljan, MD.
14. Katzung, B.G., Vanderah, T.W., Basic &Clinical Pharmacology,15th Ed., 2021, McGrawHill Lange, New York.
15. Brunton L.L., Goodman & Gilmans’s The Pharmacological Basis of Therapeutics, 13th Ed, 2018, McGrawHill, New York.
16. Ritter, J.M., Flower R., Henderson G., Rang & Dale’s Parmacology, 9th Ed, 2020, Elsevier, Edinburg
17. Whalen K., Lippincottt Illustrated Reviews Pharmacology, 7th Ed., 2019, Wolters Kluwer, Philadelphia
18. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, McGraw-Hill Education, 2019.
19. Medical Microbiology (9th Edition); Murray, Rosenthal, Pfaller, 2020.
20. Introduction to Molecular and Cell Biology. K. Mattaini, licensed under a Creative Commons Attribution-NonCommercial 4.0 International License. 2020.
21. Medical Genetics – An Integrated Approach. G. B. Schaefer and J. N. Thompson, Jr. McGraw Hill. 2014.
22. Perinatal Genetics. M. E. Norton, J. A. Kuller and L. Dugoff. Elsevier. 2019.
23. Human Genes and Genomes. Science, Health, Society. L. E. Rosenberg and D. D. Rosenberg. Elsevier. 2012.
24. Thompson & Thompson Genetics in Medicine, Eight Edition. R. L. Nussbaum, R. R. McInnes, H. F. Willard and A. Hamosh. Elsevier. 2016.
25. 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.
26. Clinical Genomics. Second Edition. S. Kulkarni and S. Roy. Elsevier. 2015.
27. 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
 |

|  |
| --- |
| **MED 105 COMMITTEE EXAM WEEK** |
| **DATE** | **EXAM NAME** | **EXAM HOUR** |
| 05.01.2024 | MED 105 Committee Exam | 13:30-16:20 |
| **Teaching Methods and Techniques** |

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

 |
| **Evaluation Method** | Theoretical Exam (85%), Team based learning (7%), Flipped Class (4%+4%) |
| **Language of lectures, practicals and all other applications** | English |