T.C.

ATILIM UNIVERSITY FACULTY OF MEDICINE

EDUCATION IN 2025-2026 ACADEMIC YEAR

ACADEMIC CALENDAR

Laboratory Lessons:

1. Histology of the urinary system (Dr. Aykanat)
2. Clinical Skills Lab: Ability to insert a urinary catheter-1 (Dr. Bozdereli Berikol)
3. The kidneys, ureters, urinary bladder & urethra (Dr. Öktem)
4. Biochemistry of Urine (Dr. Kılıç & Dr. Boyacıoğlu)
5. Histology of male genital system (Dr. Aykanat)
6. Urine Culture (Dr. Tülek, Dr. Usluca, Dr. Ozcan)
7. Interpretation of Urine Culture (Dr. Tülek, Dr. Usluca, Dr. Ozcan)
8. The pelvis and perineum (Dr. Öktem)
9. The male genital organs (Dr. Öktem)
10. The female genital organs (Dr. Öktem)
11. Histology of female genital system (Dr. Aykanat)
12. Clinical Skills Lab: Ability to insert a urinary catheter-2 (Dr. Bozdereli Berikol)
13. Urinary system pathology, Reproductive system diseases male & female, breast (Dr. Aydın)

COMMITTEE NAME	STARTING DATE	COMPLETION DATE
MED 301	22.09.2025	31.10.2025
MED 303	**03.11.2025**	**12.12.2025**
MED 305	15.12.2025	09.01.2025

	MED 301	MED 303	MED 305
ANATOMY PRACTICAL EXAM DATE		12.12.2025	
CLINICAL SKILLS EXAM DATE		12.12.2025	
COMMITTEE EXAM DATE		12.12.2025	

MED303 UROGENITAL SYSTEM

PHASE III COORDINATOR	Prof. Dr. Yekbun ADIGÜZEL
CHAIRMAN OF THE MED 301 COMMITTEE	Assoc. Prof Dr. Ezgi BEKTUR AYKANAT
MED 303 COMMITTEE DATE RANGE	**03.11.2025-12.12.2025**
ACADEMIC STAFF AT THE MED 301 COMMITTEE	Prof. Dr. Necla TÜLEK – Medical Microbiology Prof. Dr. Nedret KILIÇ – Medical Biochemistry Prof. Dr. Yekbun ADIGÜZEL – Medical Biology Prof. Dr. Selma USLUCA- Medical Microbiology Prof. Dr. Gürol CANTÜRK – Forensic Medicine Prof. Dr. Kadri Şafak GÜÇER- Pediatry Assoc. Prof. Dr. Hale ÖKTEM – Anatomy Assoc. Prof. Dr. Nuriye Ezgi BEKTUR AYKANAT- Histology and Embryology Assoc. Prof. Dr. Ali Doğan DURSUN- Physiology Assoc. Prof. Dr. Göksu BOZDERELİ BERİKOL- Emergency Medicine Assoc. Prof. Dr. Çiğdem EROL- Medical Microbiology Assoc. Prof. Dr. Yusuf Aytaç TOHMA- Obstetrics and Gynecology Assoc. Prof. Dr. Emre GÜNAKAN- Obstetrics and Gynecology Asst. Prof Dr. Badegül SARIKAYA – Physiology Asst. Prof Dr. Sami EREN – Pharmacology Asst. Prof Dr. Melike EROL DEMİRBİLEK- Biochemistry Asst. Prof Dr. Özge BOYACIOĞLU- Biochemistry Asst. Prof Dr. Gülin ÖZCAN KUYUCU- Medical Microbiology Asst. Prof Dr. Zekiye Safinur KESKİN – Radiology

ACADEMIC STAFF	**THEORETICAL LECTURE TIME**	**PRACTICAL LECTURE TIME**	**INTERACTIVE EDUCATION TIME**	**TOTAL TIME**
Anatomy	10	4	2 (Flipped Class)	16
Histology and Embryology	11	3	1 (Flipped Class)	15
Microbiology-Immunology	9	2	-	11
Pharmacology	6	-	-	6
Medical Biochemistry	14	1	-	15
Medical Pathology	15	1	-	17
Physiology	13	-	-	13
Medical Genetics	2	-	-	2
Gynecology	5	-	-	5
Forensic Medicine	2	-	-	2
Medical Informatics	-	-	2 (Clinical Skills)	2

Radiology	2	-	-	2
Problem Based Learning	-	-	6	6
TOTAL	89	11	11	111

CONTENT OF THE MED 303 COMMITTEE
Location of urinary system organs; Neighborhood of kidneys; Calyx system and renal pelvis; Ureter; Vessels and innervation of kidney and ureter; Bladder; Male and female urethra; Development of the urinary system; The structure of the glomerulus; Structure of kidney tubules and collection tubules; Juxtaglomerular apparatus histology; Ureter, bladder and urethra histology; Renal functions and RAAS system; Glomerular filtration; Tubular reabsorption and secretion mechanisms; Water balance; Clearance; Hydrogen balance; Regulation of acid-base balance; Body fluids, osmotic pressure and edema; Electrolyte balance; Mycoplasma and Ureaplasma; Nisseriae; Treponema pallidum; Papillomaviruses; Polyomaviruses; Human Herpesviruses; Glomerular diseases of the kidney; Interstitial diseases of the kidney; Approach to acute renal injury; Approach to chronic kidney disease; Fluid-electrolyte balance disorders; Acid-base balance disorders; Drugs affecting acid-base balance, Diuretics; Bladder tumors and non-tumor diseases; Prostate tumors and non-tumor diseases; Tumors of the kidney and excretory tract; Urinary system Stones; Tumor and diseases in testis and appendages; Female genital tumors and diseases, Breast tumors and diseases, Pregnancy-related diseases and tumors, Pharmacology of Gonodal Hormones and Oral Contraceptives.
MED 303 COMMITTEE AIM
To gain the knowledge about the development, structure and functions of the urinary system. To gain the knowledge about the development, structure and functions of the reproductive system. To gain knowledge about etiopathogenesis, pathology, symptoms and signs, prevention, diagnosis and principles of treatment of the disorders related to these systems. To evaluate the effects and uses of drugs targeting the urinary and reproductive systems.
MED 303 COMMITTEE LEARNING OBJECTIVES
1. Describes the embryonic development of the excretory system organs. 2. Describes the microscopic structure of the kidney and nephron. 3. Lists the functions of the kidney. 4. Explains the mechanisms of the glomerular filtration, tubular reabsorption and tubular secretion process and its control. 5. Describes the medullary osmotic gradient mechanisms. 6. Describes the dilution and concentration mechanisms of the urine. 7. Describes the concept and measurement of renal clearance. 8. Lists the factors affecting body water content, and defines the body fluid compartments and their electrolyte composition. 9. Explains how water balance is regulated. 10. Describes the concept of osmolality and its role in the regulation of water balance. 11. Describes the normal physical and chemical properties of urine. 12. Describes how the sodium and potassium balance is regulated. 13. Interprets the results of arterial blood gas analysis, and distinguishes the acidosis and alkalosis from respiratory or metabolic causes.

14. Describes the location, structure, and function of the ureters.
15. Describes the location, structure, and function of the urinary bladder.
16. Defines micturition and explains its control.
17. Describe the major metabolic pathways for the synthesis and degradation of glycine, serine, alanine, cysteine, methionine, and threonine; branched-chain amino acids (leucine, isoleucine, valine), aspartate, asparagine, glutamate, glutamine, proline, and arginine; histidine, lysine, and aromatic amino acids (phenylalanine, tyrosine, tryptophan).
18. Explain how these amino acids serve as precursors for important biological molecules.
19. Discuss the clinical significance of metabolic disorders related to these amino acids, such as phenylketonuria (PKU).
20. Classify amino acids as glucogenic, ketogenic, or both, based on the metabolic fate of their carbon skeletons.
21. Outline how the carbon skeletons of various amino acids are converted into intermediates of the citric acid cycle.
22. Describe the steps of the urea cycle and the key enzymes involved.
23. Explain the purpose of the urea cycle in converting toxic ammonia into urea for excretion.
24. Analyze the integration of the urea cycle with the citric acid cycle via shared intermediates.
25. Discuss the regulation of the urea cycle and the clinical implications of its dysregulation, leading to hyperammonemia and associated metabolic disorders.
26. Explain the role of the kidneys in regulating acid-base balance and maintaining blood pH.
27. Describe the biochemical mechanisms for excreting excess acid, including the production of ammonium and titratable acids.
28. Describe the principle and procedure for determination of bilirubin in urine.
29. Discuss possible diseases for increase in bilirubin in urine.
30. Lists the infectious agents of excretory systems, and describe their virulence, microbiological and epidemiological properties.
31. Explains the mechanisms of the diseases caused by the infectious agents and the methods of protection from these diseases.
32. Describes the sample management for microbiological diagnosis and microbiological diagnostic methods of infection agents, and interprets the results.
33. Describes the etiopathogenesis, pathology, symptoms / signs and diagnostic methods of glomerular and tubulointerstitial diseases of the kidney.
34. Describes the etiopathogenesis, pathology, symptoms / signs, complications and diagnostic methods of acute renal injury.
35. Classifies chronic kidney disease, and describes its etiopathogenesis, progression mechanisms, symptoms / signs, complications and diagnostic methods.
36. Describes the structure and function of the testes, penis and accessory reproductive organs of the male.
37. Defines meiosis and mitosis.
38. Defines spermatogenesis.
39. Discusses hormonal regulation of testicular function and the physiological effects of testosterone on male reproductive anatomy.
40. Describes the structure, and function of each of the organs of the female reproductive duct system.
41. Describes the anatomy of the female external genitalia.
42. Describes the regulation of the ovarian and uterine cycles.

43. Discusses the physiological effects of estrogens and progesterone.
44. Defines fertilization, embryogenesis, and implantation.
45. Describes the formation of placenta and its appendages, and lists the functions of placenta.
46. Defines organogenesis and indicates the important roles of the three primary germ layers in this process.
47. Discusses the determination of genetic sex and prenatal development of male and female structures.
48. Describes the major events of fetal development.
49. Describes anatomic and functional during pregnancy.
50. Explains the mechanism of labor, their stages and how normal labor is initiated.
51. Describes the puerperium.
52. Explains the lactogenesis and galactopoiesis processes and the roles of prolactin, oxytocin, insulin, glucocorticoids in these processes.
53. Describes in vitro fertilization and ART techniques.
54. Explains contraceptive methods.
55. Lists the sexually transmitted and other genital infectious agents, and describes their virulence, microbiological and epidemiological characteristics.
56. Lists the Intrauterine infectious agents, and describes their virulence, microbiological and epidemiological properties.
57. Describes the menstrual cycle disorders.
58. Defines etiologic factors, physiopathologic mechanisms, morphologic types of diseases of the testis & epididymis. Identify testis neoplasms & classify morphologic types.
59. Describe malformations, inflammatory & neoplastic diseases of the penis. Associate morphological changes seen in these conditions with signs and symptoms.
60. Explains epidemiology and pathophysiology of inflammatory diseases of the prostate.
61. Depict physiopathologic mechanisms involved in benign prostate hypertrophy, explain symptoms & signs.
62. Defines etiologic factors, physiopathologic mechanisms, morphologic types of prostate neoplasms.
63. Explains nonneoplastic epithelial disorders of the vulva. Connect vulvar intraepithelial neoplasia to vulvar carcinogenesis, explain the importance of neoplastic diseases, define histomorphological subtypes and prognostic factors of vulvar neoplasms.
64. Defines nonneoplastic disorders of the uterine cervix. Classify & describe etiologic factors, clinical manifestation, histomorphologic findings of uterine cervical neoplasms.
65. Describe etiologic factors, and pathophysiologic mechanisms, histomorphologic types of nonneoplastic uterine corpus diseases.
66. Defines etiologic factors, physiopathologic mechanisms, morphologic types of uterine neoplasms. Analyze clinical signs & symptoms, treatment options.
67. Explains physiopathologic mechanisms and morphologic changes in nonneoplastic diseases of the ovaries & tubes.
68. Classify neoplasms of the ovaries & tubes. Describe their etiologic factors, pathophysiologic mechanisms and clinical manifestations.
69. Explains & classifies inflammatory diseases & benign masses of the breast, explains etiologic factors, signs and symptoms of these diseases.
70. Delineate etiologic factors, morphologic presentation and clinical manifestations of premalignant-malignant lesions of the breast.

71. Describes, and explains the pharmacological agents affecting the urinary and reproductive systems.

RECOMMENDED BOOKS

1. Goldman-Cecil Medicine (26th Edition); Lee Goldman, Andrew I. Schafer; Elsevier, New York, 2021.
2. Gray's Anatomy for Students (3rd Edition); Richard L. Drake, A. Wayne Vogl, Adam W. M. Mitchell; Churchill Livingston Elsevier, Philadelphia, 2015.
3. Gray's Anatomy. Editor: Susan Standring, 41st Edition, 2015, Elsevier
4. Moore Clinically Oriented Anatomy. Authors: Keith L. Moore, Anne M. R. Agur, Arthur F. Dalley. 7th Edition, 2013, Lippincott Williams Wilkins
5. Atlas of Human Anatomy (Netter Basic Science). Author: Frank H. Netter. 7th Edition, 2019, Elsevier
6. Guyton and Hall Textbook of Medical Physiology (13th Edition); John E. Hall; Elsevier, Philadelphia, 2016.
7. Histology and Cell Biology: An Introduction to Pathology (4th Edition); Abraham L. Kierszenbaum, Laura L. Tres; Elsevier Saunders, Philadelphia, 2015.
8. Lehninger Principles of Biochemistry, 8th Edition, David L. Nelson, Michael M. Cox. W.H. Freeman & Company, 2021.
9. Lippincott® Illustrated Reviews: Biochemistry, 9th Edition, North American Edition. Emine Ercikan Abali, Susan D. Cline, David S. Franklin, Dr. Susan M. Viselli, 2025.
10. Peter J. Kennelly, Kathleen M. Botham, Owen McGuinness, Victor W. Rodwell, P. Anthony Weil - Harper's Illustrated Biochemistry-McGraw Hill, 2022.
11. John W. Baynes PhD, Marek H. Dominiczak Dr Hab Med FRCPath (Editor), Medical Biochemistry, 6th Edition, Elsevier, 2022.
12. Tietz Fundamentals of Clinical Chemistry and Molecular Diagnostics (Tietz Textbook of Clinical Chemistry and Molecular Diagnostics) 9th Edition, Nader Rifai PhD (Editor), 2023.
13. Medical Microbiology (9th Edition); Patrick Murray, Ken Rosenthal, Michael Pfaller; Elsevier Saunders, Philadelphia, 2020.
14. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases. John Bennett Raphael Dolin Martin J. Blaser. 9 th edition., 2019
15. Jawetz, Melnick, & Adelberg's Medical Microbiology, 28e, McGraw-Hill Education, 2019
16. Robbins Basic Pathology (10th Edition); Vinay Kumar, Abul K. Abbas, Jon C. Aster; Elsevier Saunders, Philadelphia, 2018.
17. Understanding Pathophysiology, first Canadian edition 2018 Elsevier Canada, by Sue E. Huether and Kathryn L. McCance
18. Smith and Tanagho's General Urology (19th Edition); Jack W. McAninch, Tom F. Lue; McGraw-Hill, New York, 2020.
19. The Developing Human: Clinically Oriented Embryology (10th Edition); Keith L. Moore, T. V. N. Persaud, Mark G. Torchia; Elsevier, Philadelphia, 2015.
20. Berek & Novak's Gynecology, 16th Edition, Jonathan S Berek MD, MMS, LWW, 2019.
21. Speroff's Clinical Gynecologic Endocrinology and Infertility 9th Edition, Hugh S Taylor MD, Lubna Pal MD MBBS MRCOG MS, Emre Sell MD, LWW, 2019.
22. Williams Obstetrics, 25th Edition, F. Gary Cunningham, Kenneth Levenoz, Steven Bloom, Catherine Spong, Jodi Dashe, Barbara Hoffman, Brian Casey, McGraw-Hill Education / Medical; 25th edition, 2018.

23. Harrison's Principles of Internal Medicine, Twentieth Edition (Vol.1 & Vol.2), J. Larry Jameson, Anthony Fauci, Dennis Kasper, Stephen Hauser, Dan Longo, Joseph Loscalzo, McGraw-Hill Education / Medical, 2018.
24. Symptom to Diagnosis: An Evidence Based Guide, Fourth Edition, Scott Stern, Adam Cifu, Diane Altkorn, McGraw-Hill Education / Medical, 2019.2018.
25. Katzung's Basic and Clinical Pharmacology (Ed. Todd W. Vanderah), 16th Edition, McGraw Hill Lange,2023.
26. Basic and Clinical Pharmacology (Ed. Katzung BG, Masters SB, Trevor A), 12th Edition, McGraw Hill Lange, 2012.
27. Goodman and Gilman's The Pharmacological Basis of Therapeutics (Eds: L. Brunton, B. Knollmann), 14th Edition, McGraw Hill, 2022.
28. Goodman & Gillman's The Pharmacological Basis of Therapeutics (Ed. Brunton LL, Hilal-Dandan R, Knollman BC), 13th Edition, McGraw-Hill Education,2018.

MED 303 COMMITTEE EXAM WEEK

DATE	EXAM NAME	EXAM HOUR
12.12.2025	MED 303 Committee Exam	9.30-12.00
12.12.2025	MED 303 Practical Exam	13.30-16.20
12.12.2025	MED 303 Clinical Skills Exam	13.30-16.20

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	☐ Student Panel
☒Flipped Class			

Evaluation Method	Theoretical Exam (74%), Problem Based Learning (5%), Anatomy Practical Exam (5%), Clinical Skills Exam (5%+%5), Flipped Class (2%+%2+%2),
Lesson Language	English