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| **Course Title:**  | Urinary System Block |
| **Course Code:** | 401 URN-4 |
| **Program:** | Bachelor of Medicine and Bachelor of Surgery (MBBS) |
| **Department:**  | N/A |
| **College:** | Medicine |
| **Institution:** | Najran University |

# A. Course Identification

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| **1. Credit hours:**  |  **4 (3**+1) |
| **2. Course type** |
| **a.** | University |  | College |  | Department |  | Others \*(Program) | **√** |  |
| **b.** | \*Required | **√** | Elective |  |  |
| **3. Level/year at which this course is offered:** | Year 4 - Semester-1 (level 10) |
| **4. Pre-requisites for this course** (if any)**:** Blocks of phase 1 |
| **5. Co-requisites for this course** (if any)**:** \*None |
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6. Mode of Instruction **(mark all that apply)**

| **No** | **Mode of Instruction** | **Contact Hours** | **Percentage**  |
| --- | --- | --- | --- |
| **1** | **Traditional classroom** |  61 | 67%  |
| **2** | **Blended**  |  |  |
| **3** | **E-learning** |  |  |
| **4** | **Distance learning**  |  |  |
| **5** | **Other**  |  30 | 33% |

**7. Contact Hours** (based on academic semester)

|  |  |  |
| --- | --- | --- |
| **No** | **Activity** | **Contact Hours** |
| **1** | **Lecture** | 33 |
| **2** | **Laboratory/Studio** | 30 |
| **3** | **Tutorial**  |  |
| **4** | **Others** (specify) |  |
| **A** | **Problem-Based Learning (PBL)**  | 16 |
| **B** | **Team-Based Learning (TBL)** | 6 |
| **C** | **Self-Directed Learning (SDL)**  | 6 |
|  | **Total** | 91  |

# B. Course Objectives

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| 1. Course Description  |
| This course is delivered to the medical students at the level seven/4th year. It has been designed to achieve horizontal and vertical integration of urinary system structures, functions, its common relevant disorders, and their diagnosis and management. The students are expected to develop a problem-solving approach to the relevant urinary system disorders, their diagnoses, and non- pharmacological and pharmacological management. |
| 2. Course Main Objective **By the end of this course, the students are expected to:**1. Acquire sound knowledge of the structure, function, the main problems, and diseases of the urinary system
2. Describe the symptoms and signs of some common diseases, injuries and disturbances of the urinary system and their prevention.
3. Develop a problem-solving approach to urinary system disorders.
4. Explain the pathogenesis of various urinary system disease categories and their presentation.
5. Examine clinically patients with urinary system disorders.
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# C. Course Content

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| No | **List of Topics** | Contact Hours |
|  | Introduction to the block (coordinator) |  |
| Week 1 structure and function of the renal system  |
|  | PBL1 (1st week) | 2 |
|  | Posterior abdominal wall (lumbar vertebrae. muscles& lumbar plexus) (Anat.) (Theory) | 1 |
|  | Posterior abdominal wall & pelvic peritoneum. DR (Anat) (practical) | 2 |
|  | The kidneys (Anat) (Theory) | 1 |
|  | Histology of the kidney (Anat) (practical) | 2 |
|  | General functions of the Kidney, renal reserve and Structure of the Nephron(Phys) (Theory) | 1 |
|  | Structure of the Nephron(Phys) (Theory) SDL | 3 |
|  | Renal Dynamics and RBF 1 (phys) (Theory) | 1 |
|  | Renal Dynamics and RBF 2 (phys) (Theory) | 1 |
|  | The ureters & urinary bladder , prostate and urethra (Anat) (Theory) | 1 |
|  | Kidney, urinary bladder, prostate & urethra DR 1(Anat.) Lab ( practical) | 2 |
|  | Kidney, urinary bladder, prostate & urethra DR 2 (Anat.) Lab ( practical) | 2 |
|  | Renal Handling of Electrolytes (Phys) (Theory) | 1 |
|  | Hist. of ureter, urinary bladder, urethra and prostate (Anat) (Theory) | 1 |
|  | Measurement of GFR practical (phy) ( practical) | 2 |
|  | PBL 2 (1st week) | 2 |
|  | Glomerulonephritis (path) (Theory) | 1 |
|  | Renal handling of Glucose, Urea, and amino acids (phys) (Theory) | 1 |
| Week 2 Microbes and the renal system  |
|  | PBL 1 (2nd week) | 2 |
|  | Bacterial UTI 1 (Micro) (Theory) | 1 |
|  | Bacterial UTI 2 (Micro) (Theory) | 1 |
|  | Histology of ureter, urinary bladder, urethra, and prostate gland (Anat) ( practical) | 2 |
|  | Infections of the Kidney (Path) (Theory) | 1 |
|  | Renal Changes in Systemic diseases (Path) (Theory) | 1 |
|  | TBL 1 | 2 |
|  | Renal Antibacterial Agents (Pharma) (Theory) | 1 |
|  | Drugs for Urolithiasis, Renal Colic (Pharma) (Theory) | 1 |
|  | Development of the kidney , urinary bladder, ureter ,& urethra (Anat) (Theory) | 1 |
|  | Diagnostic Methods of bacterial 1 UTI (Micro) (practical) | 2 |
|  | Diagnostic Methods of bacterial 2 UTI (Micro) (practical) | 2 |
|  | PBL 2 (2nd week) | 2 |
|  | Sterile pyuria and aseptic bacteriuria (Micro) | 1 |
|  | Congenital anomalies of the urinary system (Anat) (Theory) | 1 |
|  | Parasitic UTI (Micro) (Theory) | 1 |
|  Week 3 Renal disorders  |
|  | MID BLOCK EXAM |  |
|  | PBL 1 (3rd week)  | 2 |
|  | Renal Handling of H2O & mechanisms of urine concentration (Phys) (Theory) | 1 |
|  | Urine Properties & normal Composition (Bio) (Theory) | 1 |
|  | Abnormal constituents of Urine (Bio) (Theory) | 1 |
|  | TBL 2 | 2 |
|  | Acid Base Balance (Phys) (Theory) | 1 |
|  | Diagnostic Methods of parasitic UTI (Micro) (practical) | 2 |
|  | Pyelonephritis SDL (Micro) | 3 |
|  | Renal Tumors (Path) (Theory) | 1 |
|  | Antibilharzial drugs (Pahrma) (Theory) | 1 |
|  | Management of BPH and Erectile Dysfunction Drugs (Pahrma) (Theory) | 1 |
|  | Vesicoureteral Reflux (Surg) (Theory) | 1 |
|  | Biochemical Changes in Renal Failure (Bio) (Theory) | 1 |
|  | PBL 2 (3rd week) | 2 |
|  | Micturition and Bladder Dysfunction (Phys) (Theory) | 1 |
|  | Pathology of Renal Failure (Path) (Theory) | 1 |
| Week 4 Renal stones  |
|  | PBL 1 (4th week) | 2 |
|  | Pharmacology of Diuretics (pharma) (Theory) | 1 |
|  | Pharmacology of renal problems (Pharma) ( practical) | 2 |
|  | TBL 3 | 2 |
|  | Normal appearance of UT different imaging modalities (Radio) (practical) | 2 |
|  | Abnormal urinary tract imaging modalities (Radio) (practical) | 2 |
|  | Renal Function Tests (Bio) ( practical) | 2 |
|  | Renal Failure (med) (Theory) | 1 |
|  | PBL 2 (4th week) | 2 |
|  | Renal pathology 1 (Path) ( practical) | 2 |
| Week 5 (Exam)  |
|  | Renal pathology 2 (Path) ( practical) | 2 |
|  | Total | 93 |

# D. Teaching and Assessment

## 2. Assessment Tasks for Students

| **#** | **Assessment task\***  | **Week Due** | **Percentage of Total Assessment Score** |
| --- | --- | --- | --- |
| **1** | Mid-block exam  | Week 3 | 20 % |
| **2** | TBL evaluation | Weeks 2-4 | 10% |
| **3** | PBL evaluation | Weeks 1-4 | 10 % |
| **4** | End of course exams:- Theory: MCQs (40%) - Practical: OSPE (20%) | Week 5 | 60% |
| **5** | Peer feedback for practical skills | Twice | formative |
| **6** | Total  |  | 100% |

**\*Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

# F. Learning Resources and Facilities

## 1.Learning Resources

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| **Required Textbooks** | ANATOMY, EMBYOLOGY AND HISTOLOGY:1) Snell: Clinical Anatomy by Systems 1st ed2) Sadler: Langman’s Medical Embryology 11th ed3) Junqueira: Basic Histology 10th ed PHYSIOLOGY:• 1) Guyton and Hall Textbook of Medical Physiology, 13th Edition by John E. Hall, Arthur  C Guyton Hardcover, 1120 Pages, Published (2016) by SaundersISBN: 978-4557-7005-• 2) Ganong's Review of Medical Physiology, 24th Edition (LANGE Basic Science) 24th Edition  by Kim E. Barrett (Author), Susan M. Barman (Author), Scott Boitano (Author), Heddwen Brooks (Author) McGraw-Hill's (2012) ISBN-13: 978-0071780032, ISBN-10: 0071780033 BIOCHEMISTRY:1) Review of Biochemistry by Harper.2) Lippincott clinical biochemistry. PHARMACOOGY:1) Pharmacological basis of therapeutics by Goodman and Gillman. 2) Basic & Clinical Pharmacology by B.G. Katzung. PATHOLOGY: 1) Basic Pathology by Cotran, Kumar and Robbins.2) Textbook of Pathology. Rubin and Farber. MICROBIOLOGY:3) Parasitology by Blacklock. Jawetz, Melnick, &Adelberg's Medical Microbiology. Latest edition.4) Manual of Clinical Microbiology. Murray PR, et al. ASM Press. Latest Edition. MEDICINE:1) Current Medical diagnosis & treatment.2) Davidson’s principles and practice of medicine.  SURGERY:1) Bailey & loves: short practice of surgery |
| **Essential References Materials** | ANATOMY, EMBYOLOGY AND HISTOLOGY:1) Drake: Gray’s Anatomy for Medical Students 2nd ed flashcards2) Moore: Clinically Oriented Anatomy 6th ed3) Moore: Essential Clinical Anatomy 3rd ed4) Agur: Grant’s Atlas of Human Anatomy 12th ed5) Abrahams: McMinn’s Atlas of Human Anatomy 6th ed + 6) Lumely: Surface Anatomy: The Anatomical Basis of Clinical Examination 4th ed7) Melloni: Melloni’s Illustrated Review of Human Anatomy 3rd ed8) Putz: Sobota Atlas of Human Anatomy, volume 1 14th edition 9) Standrig: Gray’s Anatomy: The Anatomical Basis of Clinical Practice, Expert Consult 40th ed10) Goldberg: Clinical Anatomy Made Ridiculously Simple 3rd ed11) Lisowski: Anatomical Terms and Their derivation 1st ed12) Norton: Netter’s Head and Neck Anatomy for Dentistry 1st ed13) Canby: Problem-Based Anatomy 1st ed14) Ellis: Clinical Anatomy 11th ed15) Netter: Atlas of Human Anatomy, Professional Edition 4th ed16) Sinnatamby: Last’s Anatomy 11th ed17) Snell: Clinical Anatomy: An Illustrated Review with Questions and Explanations 4th ed18) Drews: Color atlas of Embryology19) Sadler: Langman’s Medical Embryology 11th ed20) Moore: The Developing Human: Clinically Oriented Embryology with Student Online Access 8th ed21) Bogart: Elsevier’s Integrated Anatomy and Embryology 1st ed22) Snell: Clinical Embryology for Medical Students 2nd ed (or latest)23) Eroschenko: Di Fiores Atlas of Histology with Clinical Correlations 11th ed24) Kerr: Functional Histology 2nd ed25) Kiernan: Histological and Histochemical Methods: Theory and Practice 4th ed26) Ovalle: Netter’s Essential Histology 1st ed27) Young: Wheater’s Functional Histology 5th ed28) Junqueira: Basic Histology 10th ed29) Jensh: Questions and Answers in Microscopic Anatomy 1st ed30) Tesler: Elseviers Integrated Histology 1st ed31) Snell: Clinical and Functional Histology for Medical Students (latest ed)32) Basic Histology text and atlas by Jangueira. 2. PHYSIOLOGY: 1) Principle of Anatomy & physiology by Tortora. 3. BIOCHEMISTRY: 1) Review of Biochemistry by Harper.2) Lippincott clinical biochemistry.4. PHARMACOOGY:1) Pharmacological basis of therapeutics by Goodman and Gillman. 2) Basic & Clinical Pharmacology by B.G. Katzung.5. PATHOLOGY: 1) Basic Pathology by Cotran, Kumar and Robbins.2) Textbook of Pathology. Rubin and Farber.3) Pocket companion to pathological Basis of disease by Robbins. Basic pathology, Robin’s and Cotran4) Mur’s pathology 6. MICROBIOLOGY:1) Medical Microbiology and Immunology by warren Levinson. 2) Medical Microbiology and Immunology by Warren Levinson &Ernest Jawetz, Examination Board Review.3) Parasitology by Blacklock. Jawetz, Melnick, & Adelberg's Medical Microbiology. Latest edition.4) Manual of Clinical Microbiology. Murray PR, et al. ASM Press. Latest Edition.5) Bailey and Scott’s Diagnostic microbiology. Latest edition.7. MEDICINE: 1) Current Medical diagnosis & treatment.2) Davidson’s principles and practice of medicine.3) Harrison’s principles of internal medicine. 8. SURGERY:1) Bailey & loves: short practice of surgery |
| **Electronic Materials** | * Saudi Digital Library (<https://sdl.edu.sa>)

<http://www.adameducation.com/interactive-physiology>1. [www.Uptodate.com](http://www.Uptodate.com)
2. Medicalstudent.com
3. [www.medscape.org](http://www.medscape.org)
4. [www.WHO.org](http://www.WHO.org)
5. [www.jbcrs.org/](http://www.jbcrs.org/)
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| **Other Learning Materials** | Saudi Digital Library |

## 2. Facilities Required

| **Item** | **Resources** |
| --- | --- |
| **Accommodation**(Classrooms, laboratories, demonstration rooms/labs, etc.) | 1. Lecture room suitable for students.
2. Laboratory (dissection room-DR, physiology, biochemistry, microbiology, pathology, pharmacology and clinical skills) suitable for students.
3. Teaching hospital for bedside teaching
 |
| **Technology Resources** (AV, data show, Smart Board, software, etc.) | 1. Computers, multimedia in lecture room, PBL room and laboratories.
2. There is a need for 25 computers with networking and internet access for student learning. As well as a number of computers and multimedia projectors in the other rooms.
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| **Other Resources** (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list) | Library supplied with reference, textbooks, and electronic resources |

# H. Specification Approval Data

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| --- | --- |
| **Council / Committee** |  |
| **Reference No.** |  |
| **Date** |   |