Course Title: Urinary and Reproductive system
Course Code: M352.
Credit Hours: 8 credit hours.
Calendar Description: 8 weeks/ Sem 2/ year 3.
Teaching Approaches: Integrated System Course.
Contact: medicine@just.edu.jo

A. Course description
This course is a multidisciplinary integrated course deals with the gross morphology, vasculature, lymphatic drainage and innervation of different organs forming urinary and reproductive system. Various functions, normal development and congenital anomalies of this system will be covered. In addition, normal and pathological microscopic appearance of different components of the system will be discussed. Biochemical and genetic aspects, microorganisms that infect the system as well as drugs that affect this system will be conferred. Teaching methods including lectures, practicals, seminars and small group discussions of clinical oriented problems to enhance self directed learning, will be followed.

B. General Objectives
Upon successful completion of this course students should be able to:
1. Describe the gross morphology of different organs forming the Urinary and Reproductive System.
2. Understand the normal development of the Urinary and Reproductive System and its congenital anomalies.
3. Discuss the vasculature, lymphatic drainage and innervation of different parts of the Urinary and Reproductive System.
4. Understand various functions of the Urinary and Reproductive System.
5. Describe the microscopic appearance of different components of the Urinary and Reproductive System.
6. Discuss the microorganisms that infect the Urinary and Reproductive System.
7. Understand the pathogenesis of various diseases of the Urinary and Reproductive System.
8. List and describe the pharmacology of various drugs acting on the Urinary and Reproductive System.
9. Understand the bases of the inherited diseases.

II. Methods of Instruction:
- Lectures.
- Practical sessions.
- Clinically oriented discussions.

III. Evaluation and Distribution of Marks:
- Written exam at the end of the system * = 40%
- Practical exam at the end of the system * = 16%.
- Discussion evaluation* = 4%
- Final end-course exam at the end of the semester (Written)* = 40%.
* Indicates integrated exam format
IV. Recommended Text Books and Atlases:

- **Anatomy:**
  - Basic Histology, By L. Carlos Junqueira, latest edition.
  - Before we are born. By K.L. Morre and T.V.N. Persaud, latest edition.

- **Physiology:**

- **Biochemistry:**
  - Supplementary Departmental Handouts.

- **Pharmacology:**
  - Supplementary Departmental Handouts.

- **Pathology:**
  - Supplementary Departmental Handouts.

- **Microbiology:**

- **Public Health (Community Medicine):**
  - Supplementary Departmental Handouts.
C. Learning (specific) objectives of the Urinary & Reproductive system:
After studying the material covered in lectures, practical sessions, clinical seminars and case presentations of this course, and after using his/her private self learning time in a productive way, the student is expected to achieve the following specific objectives:

**Lectures:**

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<thead>
<tr>
<th>#</th>
<th>Lecture Title</th>
<th>Lecture Objectives</th>
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</thead>
</table>
| 1  | Introductory case presentation for the urinary part of the system            | 1. Understand the general outline of the urinary system.  
2. Be familiar with the modalities of teaching throughout the course.  
3. Acknowledge the important relation between normal and abnormal structure and function.  
4. Appreciate the importance of basic sciences in clinical application. |
| 2  | General topographic anatomy of the urinary system.                           | 1. Overview of the urinary system.  
2. Kidney: understand its gross appearance, location in the body, relation to important organs in the abdomen.  
3. Describe the shape of the kidney, renal capsule dimenions, surfaces, poles and the perirenal fat pad.  
4. Understand the gross appearance of the internal structures: cortex, medulla, calicies and pelvis.  
5. Understand the blood supply and how it is distributed, the venous drainage and how it is collected.  
6. Discuss the lymphatic drainage and nervous control of the kidney. |
| 3  | Gross anatomy of the urinary system, blood vessels, lymphatic drainage and innervation. | 1. Understand the anatomical structure of the ureter and its location in the body.  
2. Describe how pain is referred from both kidnies and ureters.  
3. Understand the blood supply, venous drainage and lymphatics of the urinary system.  
4. Discuss the innervation of different parts of the urinary system, with special attention to the nervous control of urinary bladder. |
| 4  | Embryology of the urinary system.                                            | 1. Understand the development of the kidney and related organs of the urinary system.  
2. Define the pronephrons, mesonephrons and metanephrons.  
3. Understand the major and common congenital abnormalities in the urinary system. |
| 5  | Histology of the kidney.                                                     | 1. Describe the normal microscopic appearance of the different parts of the kidney including cortex, medulla, juxtaglomerular apparatus and the distribution of the vasculature within the kidney.  
2. List the different parts of the nephron with the details of each part. |
| 6  | Congenital and cystic diseases of the kidney.                                | 1. Define the main congenital diseases of the kidney.  
2. Understand different types, pathogenesis, morphology, and presentation of cystic diseases of the kidney. |
| 7  | Glomerular filtration (GF).                                                  | 1. Review the functions of the nephron.  
2. Understand the process of renal blood flow and glomerular filtration.  
3. Understand the glomerular membrane, and the dynamics of glomerular filtration.  
4. List the factors that affect glomerular filtration rate (GFR). |
| 8  | Reabsorption and secretion.                                                  | 1. Understand the transport and the pathways of reabsorption.  
2. Discuss the reabsorption of water and electrolytes.  
3. Discuss the reabsorption of glucose, urea, creatinine and protein. |
| 9  | Special aspects of renal metabolism. Role of kidney in acid base balance.   | 1. Discuss urea and creatinine metabolism.  
2. Understand the role of kidney in the regulation of hydrogen ions and bicarbonate buffer system.  
3. Discuss amino acids absorption by the kidney and their disorders. |
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|10 | Regulation of the GF and renal-blood flow (RBF). **(Physiology)** | 1. Understand the autoregulation and tubuloglomerular feedback.  
2. Understand the juxtaglomerular apparatus and its role in renin-angiotensin system.  
3. Understand the glomerulotubular balance.  |
|11 | Glomerulonephritis. **(Pathology)** | 1. Discuss the pathogenesis of glomerulonephritis.  
2. Recognize the basic reactions of glomerulus to injury.  
3. List the different renal syndromes associated with renal Pathology.  |
|12 | Nephritic syndrome. **(Pathology)** | 1. Discuss the manifestations and mechanism of nephritic syndrome.  
2. List the types of glomerulonephritis associated with nephritic syndrome.  
3. Discuss the etiology, pathogenesis, morphology and clinical features of the common types of glomerulonephritis leading to nephritic syndrome.  |
|13 | Nephrotic syndrome. **(Pathology)** | 1. List the components of nephrotic syndrome.  
2. Discuss the pathogenesis of nephrotic syndrome.  
3. List the main causes of nephrotic syndrome.  
4. Discuss the etiology, morphology, pathogenesis and clinical features of the common types of glomerulonephritis leading to nephrotic syndrome.  |
|14 | Glomerular pathology in systemic disease. **(Pathology)** | 1. Discuss the glomerular lesions associated with - Diabetes mellitus.  
- Systemic lupus erythematosis.  
- Henoch-shonlein purpura.  
- Multiple myeloma.  
- Gout.  
- Endocarditis.  |
|15 | Parameter of renal active transport. **(Physiology)** | 1. Discuss the renal tubular transport maximum (Tm).  
2. Define the filtered load and excretion.  
3. Understand the glucose and para-aminohippuric acid (PAH) titration curve.  |
|16 | Renal clearance. **(Physiology)** | 1. Understand the mechanisms of renal clearance and its applications.  
2. Describe the inulin, creatinine and PAH clearance.  |
|17 | Renal concentration and dilution of urine. **(Physiology)** | 1. Understand the mechanisms of dilution and concentration - Counter current multipliers.  
- Counter current exchangers.  
2. Discuss the role of urea.  |
|18 | Diuretic agents-I. **(Pharmacology)** | 1. List major types of diuretics and relate them to their sites of action.  
2. List the major applications, toxicities, and the efficacy of thiazides, loop diuretics and potassium-sparing diuretics.  
3. Describe two drugs that reduce potassium loss during diuresis.  |
|19 | Diuretic agents-II. **(Pharmacology)** | 1. Describe a therapy that will reduce calcium excretion in patients who have recurrent urinary stones.  
2. Discuss the principle of force diuresis.  
3. Describe the drugs for reducing urine volume in nephrogenic diabetes insipidus.  |
|20 | Gross anatomy and histology of ureter urinary bladder and urethra. **(Anatomy)** | 1. Describe the structure of the urinary bladder and its relations to the peritoneum.  
2. Understand the urethra and the difference between males and females.  
3. Describe the structure and relations of the male urethra in different regions.  
4. Describe the microscopical appearance of the ureter, urinary bladder and urethra.  
5. Compare the histological appearance of the distended and contracted bladder.  |
| 21 | Urinary tract infection (UTI). (Microbiology) | 1. Understand the role of *E. coli* and other gram negative bacteria as well as gram positive organisms in UTI, their laboratory diagnosis and susceptibility to antibiotics. |
| 22 | Diseases of blood vessels; renal failure. (Pathology) | 1. Define causes, pathogenesis, pathology and presentation of renal diseases of blood vessels.  
2. Contrast acute and chronic renal failure with the emphasis on pathogenesis, causes, morphology and clinical course. |
| 23 | Drugs and the Kidney. (Pharmacology) | 1. Understand the usefulness of altering urine pH by drugs.  
2. Discuss the mechanisms by which drugs and chemicals damage the kidney.  
3. Understand how to select and prescribe drugs for patients with renal impairment. |
| 24 | Schistosomiasis. (Microbiology) | 1. Describe *Schistosoma Hematobium*, its pathogenesis, immune response, epidemiology, life cycle and clinical manifestations.  
2. Describe the laboratory diagnosis, treatment, prevention and control measures. |
| 25 | Tubulointerstitial nephritis; urinary tract infection. (Pathology) | 1. Define the features and general morphology of tubulointerstitial nephritis.  
2. Define the pathogenesis, morphology and clinical features of drug induced tubulointerstitial nephritis.  
3. Define the morphology and clinical features of acute and chronic pyelonephritis.  
4. Define the morphology and clinical features of obstructive uropathy and the common sites of ureteric obstruction.  
5. Discuss the pathogenesis, clinical features and types of urinary stones.  
6. Discuss the predisposing factors, causes and pathology of cystitis. |
| 26 | Renal tumors; pathology of ureter and urinary bladder. (Pathology) | 1. Discuss the main features of angiomyolipoma and oncocytoma (benign renal neoplasms).  
2. Discuss the risk factors, morphology and clinical features of renal cell carcinoma (RCC).  
3. List the main features of urothelial carcinoma of the renal pelvis.  
4. Discuss the risk factors, morphology and clinical features of nephroblastoma.  
5. Describe the pathology of bladder cancer including; epidemiology, types, grading, staging and prognosis. |
| 27 | Living and radiological anatomy. (Anatomy) | 1. Discuss the normal position of different parts of the urinary system with the help of living examination.  
2. Understand the radiological examination, normal plain KUB and normal IVP. |
| 28 | Introductory case presentation for the reproductive part of the system. (Multidisciplinary) | 1. Understand the general outline of the reproductive system.  
2. Be familiar with the modalities of teaching throughout the course.  
3. Acknowledge the important relation between normal and abnormal structure and function.  
4. Appreciate the importance of basic sciences in clinical application. |
| 29 | Pelvic walls, perineum, and pelvic diaphragm. (Anatomy) | 1. Describe the structure of bony pelvis, perineum, and pelvic diaphragm.  
2. Discuss the nerves of the pelvis.  
3. Describe the radiographic images and the surface landmarks of the pelvis. |
| 30 | Urogenital diaphragm in both males and females. (Anatomy) | 1. Describe the perineum and its boundaries.  
2. Describe the anal triangle including anal canal, levator ani muscles and anal sphincters.  
3. Describe the urogenital triangle. |
| 31 | Anatomical components of male reproductive system. (Anatomy) | 1. Describe the peritoneal foldings on the pelvic viscera in males.  
2. Describe male genital organs.  
3. Describe the relationship, blood supply, innervation, and lymph drainage of the above listed parts. |
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<th>Section</th>
<th>Description</th>
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<td>Developmental Anatomy. “Embryology” of the reproductive system. (Anatomy)</td>
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<td>33</td>
<td>Hormonal regulation of sex determination. (Physiology)</td>
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<td>34</td>
<td>Male reproductive physiology. (Physiology)</td>
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<td>35</td>
<td>Histology of the male reproductive system. (Anatomy)</td>
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<td>36</td>
<td>Androgens and their antagonists. (Pharmacology)</td>
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<td>37</td>
<td>Disease of the penis, scrotum and testis. (Pathology)</td>
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<td>38</td>
<td>Diseases of the prostate. (Pathology)</td>
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<td>39</td>
<td>Anatomical components of the female internal reproductive system. (Anatomy)</td>
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<td>41</td>
<td>Erection. (Physiology)</td>
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<td>42</td>
<td>Histology of the female reproductive system. (Anatomy)</td>
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<td>Female reproductive physiology-I. (Physiology)</td>
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<td>Female reproductive physiology-II. (Physiology)</td>
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<td>45</td>
<td>Disease of the vulva and vagina. (Pathology)</td>
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| 46    | **Gonorrhoea.** *(Microbiology)*                                        | 1. Understand the role of *Neisseria gonorrhoea* as the commonest cause of sexually transmitted diseases.  
2. Describe the laboratory diagnosis, pathogenesis, susceptibility to antibiotics and epidemiology of *N. gonorrhoea*. |
| 47    | **Trichomoniassis & Ectoparasites.** *(Microbiology)*                   | 1. Describe *Trichomonas vaginalis* and other ectoparasites transmitted by sexual means, their morphology, structural features and life cycle.  
2. Briefly describe clinical presentations and drugs used for treatment. |
| 48    | **Physiology of pregnancy.** *(Physiology)*                            | 1. Describe, fertilization, transport and implantation of the developing ovum.  
2. Describe the function of placenta.  
3. Describe the response of the mother’s body to pregnancy.  
4. Describe and discuss fetal circulation. |
| 49    | **Female sex steroids and contraceptives agents.** *(Pharmacology)*    | 1. Describe the nature, mechanisms of actions and the adverse effects of female sex steroids and various female contraceptive agents.  
2. Indicate the therapeutic applications of antiestrogenic agents. |
| 50    | **Diseases of the cervix.** *(Pathology)*                              | 1. Describe the histopathologic changes, age incidence and risk factors for cervical intraepithelial neoplasia and its association with human papilloma virus.  
2. Discuss the age incidence, predisposing factors, pathologic characteristics and sites of metastases for squamous cell carcinoma of the cervix. |
| 51    | **Infections by Chlamydia, Gardnerella, and Ureaplasma.** *(Microbiology)* | 1. Describe the differences in structure, morphology and replication of these organisms from other bacteria or viruses.  
2. Describe the pathogenesis stressing the role of virulence factors and their implication on the clinical picture.  
| 52    | **Parturition and lactation.** *(Physiology)*                          | 1. Discuss the factors currently thought to be involved in the initiation of parturition.  
2. Discuss the hormonal requirements for mammary gland development and establishment of lactation.  
3. Describe the milk composition. |
| 53    | **Diseases of the breast-I.** *(Pathology)*                            | 1. Understand the diagnostic approach to palpable and non-palpable breast lesions.  
2. Describe the non-neoplastic disorders and benign tumors of the breast with emphasis on mastitis, fat necrosis, fibrocystic changes in the breast, fibroadenoma, phyllodes tumor, and intraduct papilloma.  
3. List breast cancer risk factors. |
| 54    | **Diseases of the breast-II.** *(Pathology)*                           | 1. Describe the major types of breast cancer including, in situ, invasive ductal, lobular, medullary, mucinous and tubular carcinomas.  
2. List the important factors in assessing the prognosis of breast cancer.  
3. Understand the role of estrogen and progesterone receptors in the management of breast cancer. |
| 55    | **Drugs acting on the uterus.** *(Pharmacology)*                      | 1. Describe drugs (stimulants and relaxants) of the uterus and their therapeutic uses and adverse effects. |
| 56    | **Disease of the uterus.** *(Pathology)*                              | 1. Distinguish between endometriosis, adenomyosis and endosalpingiosis by clinical, pathological features and natural history.  
2. Distinguish between the different types of endometrial hyperplasia by histological appearance, clinical and natural history.  
3. Understand the age incidence, and pathologic findings, of leiomyoma and leiomyosarcoma of uterus.  
4. Identify age incidence, predisposing factors, hormonal influence, pathologic characteristics and sites of metastases for endometrial carcinoma. |
| 57    | **Syphilis.** *(Microbiology)*                                        | 1. Describe the morphology of *Treponema pallidum,* pathogenesis and laboratory diagnosis of the disease.  
2. Describe the various stages of the disease and appropriate treatment as well as preventive measures. |
| 58    | **Inherited diseases-I.** *(Biochemistry)*                             | 1. Understand the genetic bases for sex determination.  
2. Understand the autosomal dominant inheritance with examples on related diseases.  
2. Understand the autosomal recessive inheritance with examples on related diseases. |
<table>
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<th>Page</th>
<th>Section</th>
<th>Description</th>
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</table>
| 59   | Inherited diseases-II. | 1. Understand the sex-linked inheritance with examples on related diseases.  
2. Understand the mitochondrial inheritance with examples on related diseases.  
3. Understand the multifactorial inheritance with examples on related diseases. |
| 60   | Diseases of the ovaries and fallopian tubes. | 1. Classify ovarian tumors with the emphasis on serous, mucinous, endometrioid carcinoma, epithelial tumors and germ cell tumors of the ovary.  
2. Describe the age incidence, predisposing factors, pathological characteristics, sites of metastases for epithelial tumors and germ cell tumors of the ovary. |
| 61   | HIV and AIDS. | 1. Describe the nature of the virus, life cycle and its role in the understanding of pathogenesis and immunopathology of AIDS with emphasis on its epidemiology.  
2. Describe the laboratory measures for screening, confirmation and follow up of treatment.  
3. Highlight the treatment regimens and preventive measures. |
| 62   | Herpes, Cytomegalovirus, Human Papillomavirus and Moluscum contagiosum. | 1. Describe the structure, morphology, replication cycle and serotypes of each virus as well as epidemiology of the diseases they cause.  
2. Describe the pathogenesis and role of these viruses in cervical cancer.  
3. Describe the cell culture and serology for identification and highlight role of antiviral drugs in treatment. |
| 63   | Gestational disease. | 1. Describe age incidence, predisposing factors, natural history and pathological characteristics for complete and partial hydatidiform mole, invasive mole and gestational choriocarcinoma. |
| 64   | Candidiasis. | 1. Describe the morphology of *Candida albicans*, its pathogenesis and the association between the immune system and fungal infections.  
2. Briefly describe clinical presentation and the nature of the vaginal discharge.  
3. Describe laboratory methods of diagnosis as well as drugs used for treatment. |
| 65   | Infections of urinary and reproductive system. | 1. Identify the risk factors for urinary and reproductive system infections and disease. |
| 66   | Community awareness | 1. Describe methods to promote community awareness regarding menses, menstrual changes, and fertility. |
### A. Practical Laboratory Sessions

<table>
<thead>
<tr>
<th>Lab #</th>
<th>Lab. Title</th>
<th>Objectives</th>
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</table>
| 1     | Gross anatomy of the urinary system. (Anatomy) | 1. Define different parts of the urinary system in the abdomen and pelvis.  
2. Localize the kidney within posterior abdominal compartment, and its relation to the surrounding organs.  
3. Trace the ureter from the pelvis of the kidney until the urinary bladder.  
4. Define the urinary bladder and apply knowledge about its elations in the pelvic cavity both in males and females.  
5. Compare the urethra in both sexes.  
6. Identify all parts of the urinary system in normal conditions on plain X-rays and IVP.  
7. Identify major congenital anomalies affecting this system by imaging techniques. |
| 2     | Histology. (Anatomy) | 1. Identify the microscopical appearance of the:  
- Nephron and its parts.  
- Renal medulla.  
- Ureter.  
- Urinary bladder.  
- Urethra. |
| 3     | Glomerular pathology. (Pathology) | 1. Identify the main light microscopical features of the different types of glomerulonephritis plus selected examples of electron microscopic (EM) and immunofluorescence (IF). (for this class use Webpath images & glass slides from your slide box). |
| 4     | Non-neoplastic diseases of the kidney. Neoplasms of kidney and urothelial tumors. (Pathology) | 1. Identify the congenital and cystic diseases of the kidney grossly.  
2. Examine kidneys with pyelonephritis grossly and microscopically.  
3. Examine kidneys with hydronephrosis, lithiasis and tuberculosis grossly; (for this class use Webpath, glass slides and gross specimens in the museum)  
4. Examine the gross and histological slides of renal cell carcinoma and nephroblastoma (Wilms tumor).  
5. Examine urinary bladder cancer grossly and histologically; (for this class use the Webpath, glass slides and gross Specimens). |
| 5     | Urinalysis and urine culture. (Microbiology) | 1. Describe methods of urine collection.  
2. Examine the following characteristics of urine:  
- Physical.  
- Chemical.  
- Microscopic.  
3. Demonstrate the lab diagnosis of urinary tract infection.  
4. Demonstrate the significance of antibiotic sensitivity test in urinary tract infection.  
5. Identify the morphological features of Schistosoma Hematobium. |
| 6     | Pelvis I. (Anatomy) | Describe the following:  
1. Bony pelvis.  
2. Pelvis muscles.  
3. Pelvic peritoneum.  
4. Urogenital triangle in males.  
5. Male internal genitalia:  
- Vas deferens.  
- Seminal vesicles.  
- Ejaculatory ducts.  
- Prostate.  
- Prostatic urethra. |
| 7     | Pelvis II. (Anatomy) | Describe the following:  
1. Female internal genitalia:  
- Ovary.  
- Uterine (Fallopian) tube.  
- Uterus.  
- Vagina.  
2. The perineum.  
3. Anal triangle.  
4. Urogenital triangle in females. |
5. Vessels and nerves of pelvis and perineum.

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<th>No</th>
<th>Vessels and nerves of pelvis and perineum.</th>
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<td>8</td>
<td>Male reproductive system. (Pathology)</td>
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</tbody>
</table>
|    | 1. Identify the gross and histological features of:  
|    |   - Benign prostatic hyperplasia.  
|    |   - Carcinoma of the prostate.  
|    |   - Carcinoma of the penis.  
|    |   - Testicular tumors.  
|    | 2. Identify the gross appearance of hydrocele and torsion of testis.  
|    | 3. Identify the histological features of testicular atrophy associated with infertility cases. |
| 9  | Female genital tract-I. (Pathology)       |
|    | 1. Identify and recognize the pathologic changes in:  
|    |   - Human papilloma virus infection.  
|    |   - Squamous cell carcinoma of the vulva, vagina and cervix.  
|    |   - Dysplasia and squamous intraepithelial neoplasia of the cervix.  
|    |   - Endometrial adenocarcinoma.  
|    |   - Adenomyosis and endometriosis.  
|    |   - Benign and smooth muscle tumors of the uterus. |
| 10 | Female genital tract-II. (Pathology)      |
|    | 1. Identify and recognize the pathologic changes in:  
|    |   - Ectopic tubal pregnancy.  
|    |   - The following ovarian tumors: serous, mucinous, granulosa cell, teratomas and Krukenberg tumor  
|    |   - Gestational disease: molar pregnancies and choriocarcinoma. |
| 11 | Urethral Discharge. (Microbiology)        |
|    | 1. Describe specimen collection methods used in sexually transmitted disease, and storage of specimens.  
|    | 2. Recognize in microscopic slides bacteria, fungi, and parasites causing urethral discharge.  
|    | 3. Culture a urethral discharge simulated specimen that has Neisseria sp. Identify it by biochemical tests. |

### Summary of the teaching activities in the module

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<tr>
<th>Department</th>
<th>No of Lectures</th>
<th>No of Labs</th>
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<tbody>
<tr>
<td>Anatomy</td>
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<tr>
<td>Physiology</td>
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<td>8:15 – 11:15</td>
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</table>
| 11:15 – 12:15 | Introduction to Urino-Genital System (UGS), urinary part (Multidisciplinary) (Science Hall-2) | General topographic anatomy of the urinary system.  
(Anatomy) | Glomerular filtration (GF).  
(Physiology) | Gross anatomy and histology of ureter, urinary bladder and urethra.  
(Anatomy) | Regulation of the GF and renal-blood flow (RBF).  
(Physiology) |
(Anatomy) | Reabsorption and secretion.  
(Physiology) | Special aspects of renal metabolism. Role of kidney in acid base balance.  
(Biochemistry) | Glomerulonephritis.  
(Pathology) |
| 1:15 – 2:15 | M382 | Histology of the kidney.  
(Anatomy) | M362 | Congenital and cystic diseases of the kidney.  
(Pathology) | Parameter of renal active transport.  
(Physiology) |
| 2:15 – 5:15 |                                           |                                               |                                              |                                                | Lab(1) Anatomy (A) Lab(2) Histology (B)    |
# Urino-Genital System (UGS, M352)
(11:15-2:15)/Science Hall-2
week 2

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<tr>
<td>8:15 – 11:15</td>
<td>Lab(1) Anatomy (C) Lab(2) Histology (D) Lab(3) Pathology (E)</td>
<td>Lab(1) Anatomy (D) Lab(2) Histology (E) Lab(3) Pathology (B)</td>
<td>Lab(1) Anatomy (E) Lab(2) Histology (C) Lab(3) Pathology (D)</td>
<td>Lab(3) Pathology (C)</td>
<td>Lab(5) Microbiology(B) Lab(4) Pathology (A)</td>
</tr>
<tr>
<td>1:15 – 2:15</td>
<td>M382</td>
<td>Diuretic agents –I. (Pharmacology)</td>
<td>M362</td>
<td>Urinary tract infection. (Microbiology)</td>
<td>Schistosomiasis (Microbiology)</td>
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<td>2:15 - 5:15</td>
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<td>Lab(3) Pathology (A)</td>
<td>Lab(5) Microbiology(E) Lab(4) Pathology (B)</td>
<td>Lab(5) Microbiology(C)</td>
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### Urino and reproductive system
(11:15-2:15)/Science Hall-2
week 3

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<th>Time</th>
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<tr>
<td>8:15 - 11:15</td>
<td>Lab(4) Pathology (E) Lab(5) Microbiology(D)</td>
<td>Lab(4) Pathology (C) Lab(5) Microbiology(A)</td>
<td>Lab(4) Pathology (D)</td>
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<tr>
<td>11:15 – 12:15</td>
<td>Tubulointerstitial nephritis; Urinary tract infection (Pathology)</td>
<td>Discussion groups Renal failure (C1, C2, C3, C4) 11:15-12:45</td>
<td>Discussion groups Renal failure (D1, D2, D3, D4) 11:15-12:45</td>
<td>Introduction to Urino-Genital System (UGS), genital part (Multidisciplinary) (Science Hall-2) 12:15-1:15</td>
<td>Urogenital diaphragm in both males and females. (Anatomy)</td>
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<tr>
<td>12:15 – 1:15</td>
<td>Living and Radiological anatomy (Anatomy)</td>
<td>Discussion groups Renal failure (A1, A2, A3, A4) 1:15-2:45</td>
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<td>1:15 – 2:15</td>
<td>M382</td>
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<td>M362</td>
<td>Pelvic walls, perineum, and pelvic diaphragm. (Anatomy)</td>
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<td>2:15 – 5:15</td>
<td>Discussion groups Renal failure (B1, B2, B3, B4) 2:15-3:45</td>
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<td>Discussion groups Renal failure (E1, E2, E3, E4) 2:15-3:45</td>
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<td>Hormonal regulation of sex determination. (Physiology)</td>
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<td>8:15 - 11:15</td>
<td>Lab(6) Anatomy (A)</td>
<td>Holiday</td>
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<td>Lab(6) Anatomy (C)</td>
<td>Lab(7) Anatomy (A)</td>
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<td>Lab(8) Pathology (E)</td>
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<td>Lab(8) Pathology (A)</td>
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## Urino-Genital System (UGS, M352)
**(11:15-2:15) / Science Hall-2**
### week 5

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<td>8:15 - 11:15</td>
<td>Lab(7) Anatomy (E) Lab(8) Pathology (D)</td>
<td>Lab(7) Anatomy (D) Lab(8) Pathology (C)</td>
<td>Lab(7) Anatomy (C) Lab(8) Pathology (B)</td>
<td>Lab(7) Anatomy (B)</td>
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<td>8:15 – 11:15</td>
<td>Lab(9) Pathology (B)</td>
<td>Lab(9) Pathology (D)</td>
<td>Lab(11) Microbiology (A)</td>
<td>Lab(11) Microbiology (C)</td>
<td>Lab(11) Microbiology (D)</td>
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<td>Lab(9) Pathology (E)</td>
<td>Lab(10) Pathology (A)</td>
<td>Lab(10) Pathology (C)</td>
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<td>11:15 - 12:15</td>
<td>Diseases of the breast-II.</td>
<td>Herpes, Cytomega\al Virus, Human Papilloma Virus and Moluscum contagiosum. (Microbiology)</td>
<td>HIV and AIDS. (Microbiology)</td>
<td>Inherited diseases-I. (Biochemistry)</td>
<td>Genital-urinary tract infections. (Public Health)</td>
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<td>(Pathology)</td>
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<td>12:15 – 1:15</td>
<td>Syphilis (Microbiology)</td>
<td>Candidiasis. (Microbiology)</td>
<td>Gestational diseases. (Pathology)</td>
<td>Inherited diseases-II. (Biochemistry)</td>
<td>Community awareness (Public Health)</td>
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<td>1:15 – 2:15</td>
<td>M382</td>
<td>Diseases of the ovries and fallopian tubes. (Pathology)</td>
<td>M362</td>
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<td>Discussion groups Infertility (B1, B2, B3, B4)</td>
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<td>2:15 - 5:15</td>
<td>Lab(9) Pathology (C)</td>
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<td>Lab(11) Microbiology (B)</td>
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**Urino and reproductive system M352)**  
**11:15-2:15)/Science Hall-2**  
**week 7**

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<tr>
<td>8:15 – 11:15</td>
<td>Lab(11) Microbiology (E) Lab(10) Pathology (D)</td>
<td>Discussion groups Infertility (C1, C2, C3, C4) 8:30-10:00</td>
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<td>Revision Anatomy, Physiology, Biochemistry, Pathology, Pharmacology and Histology 11:15-2:15 (OFFICE HOURS)</td>
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<td>11:15 – 12:15</td>
<td>Discussion groups Infertility (D1, D2, D3, D4) 11:15-12:45</td>
<td>Discussion groups Infertility (A1, A2, A3, A4) 10:15-11:45</td>
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<td>12:15 – 1:15</td>
<td>M382</td>
<td>Discussion groups Infertility (E1, E2, E3, E4) 12:15-1:45</td>
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<td>1:15 – 2:15</td>
<td>Lab(10) Pathology (B)</td>
<td>Lab(10) Pathology (E)</td>
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**Case Presentation-1**

**Acute renal failure**

A previously well 32-year-old man is brought to the emergency department having been involved in a motor vehicle accident. The circumstances of the accident are initially unclear. However, the ambulance officers who attended the accident noted that he was trapped in the vehicle for three hours before being freed. At this time he was hypotensive with a systolic blood pressure of 80 mmHg, and had significant injuries to his lower limbs with probable fracture of both femora. He was initially treated with colloid and subsequently crystalloid fluid resuscitation, and his systolic blood pressure stabilized at 100 mmHg. At the time of admission to the emergency department, abdominal, thoracic, and cerebral injuries were excluded and his injuries were assessed as being confined to his lower limbs. He was tachycardic and his blood pressure was 100/60 mmHg, and his jugular venous pressure was not visible even though he was lying flat. In preparation for surgical stabilization of his lower limbs, he had a urinary catheter inserted and 50 ml of dark urine, which tested strongly positive for blood on urinalysis, was drained, after which minimal urine output was documented.

**Initial laboratory investigations revealed the following results:**

- Hemoglobin 79 g/L
- Sodium 140 mmol/L
- Potassium 7.8 mmol/L
- Chloride 98 mmol/L
- Bicarbonate 11 mmol/L
- Urea 13 mmol/L
- Creatinine 0.19 mmol/L

**Goals and Objectives:**

1. Briefly summarize the case to the students.
2. List the signs and symptoms that this patient had and explain them.
3. Define the Acute Renal Failure.
4. Discuss the causes of acute renal failure.
5. What are the factors involved in the development of this man’s acute renal failure?
6. Explain the initial laboratory findings and what additional biochemical abnormalities are likely to be present?
7. Discuss how to evaluate renal function with the emphasis on blood urea nitrogen and serum creatinine.
8. Describe in general terms the expected course and prognosis of this renal failure.
9. Discuss the complications of acute renal failure.
10. Describe the basic principles in the treatment of acute renal failure.

**Case Presentation-2**

**Infertility**

A 25 year-old married nurse had an emergency caesarean section performed for fetal distress associated with a placental abruption at 38 weeks gestation. The baby was delivered safely, but the postnatal recovery was complicated by puerperal pyrexia and a foul-smelling vaginal discharge. She was next seen 3 years later in the gynaecology outpatient clinic complaining of infertility. She had started trying for a second child 6 months after her caesarean section, having relied on the sheath for contraception during this time. She was still married to the same husband, had remained in good health and menstruated regularly for 4 days out of every 28 days. Nothing untoward was found on examination and a postcoital test on the 12th day of her cycle showed plentiful actively motile spermatozoa in a copious clear mucus. Serum prolactin was 258mu/L, FSH 4.6 U/L, LH 6.0 U/L and thyroid function was normal. Her Temperature chart was clearly biphasic and day 21 serum progesterone suggestive of ovulation (> 40 nmol/L).

Diagnostic laparoscopy was therefore performed and revealed a normal uterus, right tube and ovary. The left tube, however, was bound down by adhesions to the back of the broad ligament and there was evidence of chronic sepsis and adhesions in the pouch of Douglas. The left ovary could not be seen. Methylene blue dye was injected through the cervix and passed easily through the right tube but not the left.
Objectives:

1) Briefly summarize the case to the students.
2) List the signs and symptoms that this patient had and explain them.
3) Define and classify infertility.
4) List the causes of infertility (male and female).
5) What investigations should be performed before embarking on the treatment of infertility.
6) How significant is the finding of unilateral tubal blockage in this particular case?
7) If the tubal blockage is responsible for this lady's secondary infertility, what can be done in the way of treatment?
8) Describe the basic principle in the treatment of infertility.