

**NEAR EAST UNIVERSITY**

**FACULTY OF MEDICINE**

**PHASE II**

**COURSE CATALOG**

**2022 – 2023**

# PHASE II COORDINATOR

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### Curriculum of Phase II, general information

### Tissue&skeletal system ( course type: compulsory course; course code: MED 201)

**Course Objective:** The student is expected to gain the knowledge and skills about important structural features and pathogenesis of human skeletal, main approaches to microbial diagnostics and treatment.

**Course content**: This committee includes lectures and practicals concerning fundamental concepts in basic tissues,skeleton and human embryology.

### Muscular and Peripheral nervous System ( course type: compulsory; course Code: MED 202)

**Course objective:** This committee aims to develop the knowledge about muscular and peripheral part of the nervous system and identify the structures in each of the courses included in the committee eg. Gross and microscopic anatomy, physiology.

**Course content**:basic knowledge in the muscular and peripheral nervous systems in aspect of anatomy, embryology, histology and physiology.

### Nervous system (course type: compulsory; course code: MED 203)

**Course Objective:** The students are expected to gain knowledge about the development, structure (gross and microscopic) and functional principles of human nervous system.

**Course content**: Anatomy, physiology and microscobic structure of the nervous system. Basic physical principals of the central and peripheral nervous sytems.

### Cardiology, respiratory and blood system (course type: compulsory; course code: MED 204)

**Course Objective:**  the students are expected to gain knowledge and skills about human circulatory system, blood tissue, respiratory system together with the embryological developments of the cells, tissues and organs, histological and anatomical structures, physiological properties, functions and mechanisms, interactions between these systems and responses of these organs, tissues and systems to internal and external changes.

**Course content:** basic knowledge in the related systems namely anatomy, embryology, histology and physiology of blood, cardiovascular and respiratory systems.

### Gastrointestinal system and metabolism (course type: compulsory; course code: MED 205)

**Course Objective:** the successful student is expected to comprehend the anatomy, embryology, histology, physiology and biochemistry of the gastrointestinal system; to learn the digestion and absorption of nutrients, and molecular mechanisms of normal human metabolism and obesity.

**Course content.** Normal human metabolism, anatomy, embryology, histology and physiology of gastrointestinal system.

### Endocrine& Urogenital system (course type: compulsory; course code: TFT:206)

**Course Objective:** To provide the basic knowledge about the structural and functional features of endocrine and urogenital systems at the organ, tissue, cell type and molecular levels and to identify the structures macroscopically, microscopically and with other examinations.

**Course content**: the basics of anatomy, embryology, histology, biochemistry and physiology of the endocrine and urogenital systems.

### Biological Basis of diseases (course type: compulsory; course code: TFT 207)

**Course Objective**: the student is expected to describe the basic mechanisms of the immune system and to gain knowledge on pathology, pharmacology, biochemistry, biostatistics, genetics and medical ethics for understanding the biological basis of diseases.

**Course content:** Introduction to immunology, basic pathology, general pharmacology and clinical biochemistry.

**INDEPENDENT LEARNING**

***Description:***

*Independent learning is also described as ‘personalised learning’, ‘student-centred learning’ and ‘ownership’ of learning and enables shifting of responsibility for the learning process from the teacher to the student. Independent learning*

* *has a vital role for continuing development of a system of school education that promotes high quality and lifelong learning and social equity and cohesion.*

***Benefits of independent learning for students***

*Indepent learning aims to achieve the following objectives:*

* *improved academic performance*
* *increased motivation and confidence*
* *greater student awareness of their limitations and their ability to manage them*
* *enabling teachers to provide differentiated tasks for students*
* *fostering social inclusion by countering alienation*

***What a student should do for learning independently?***

|  |  |  |
| --- | --- | --- |
|  | **Strategies to Enable Independent**  **Learning (Crawford)** | ***Activities to Structured Learning (Keste*** |
| ***S*** | *Select and focus topic and information needs.* | *Diagnose Need* |
| ***U*** | *Uncover potential sources of information. Learn how to access them.* | *Identify Learning Resources* |
| ***C*** | *Collect, examine, and select suitable resources.* | *Identify Learning Resources* |
| ***C*** | *Compile relevant information from selected sources.* | *Use Resources* |
| ***E*** | *Evaluate, interpret, analyze, and synthesize the information.* | *Use Resources* |
| ***E*** | *Establish and prepare an appropriate format and present the information.* | *Use Resources* |
| ***D*** | *Determine the effectiveness of the whole process.* | *Assess learning* |

***References for further reading:***

1. *http://www.leeds.ac.uk/educol/documents/193305.pdf*
2. *http://www.curee.co.uk/files/publication/%5Bsitetimestamp%5D/Whatisindependentlearningandwhatarethebenefits.pdf*
3. *https://westpoint.edu/sites/default/files/inlineimages/centers\_research/center\_for\_teching\_excellence/PDFs/mtp\_project\_papers/DeLongS\_ 09.pdf*

## ASSESSMENT PROCEDURE

In the first three years of the medical faculty, students are evaluated by MCQ (multiple choice questions) exams and laboratory exams.

The Assessment Procedure of the Phase covers exams and scores and their abbrevations that shown below.

**Exams:**

o Committee Exam (CE)

o Final Exam (FE)

o Make-up Exam (MUE)

o Committee Score (CS)

o Committee Average Score (AVG)

o Good Medical Practice (GMP)

o Final Exam Score (FES)

o Year End Grade (YEG)

o Grade Point Average (GPA)

All exam grades are between 0-100 points. Assessment approaches, assessment methods and assessment tools related with the exams and score types, are described below:

In CEs,students are given a maximum of 100 MCQs. In the FEs and MUEs the question numbers are 100. The number of questions for the CEs are determined according to the number of lectures in each subject committee. The general rule is one question per hour of lecture. However, when the lecture hours are more than 100 hours then the question numbers are adjusted to be 100 questions max. These MCQs are expected to be answered in 90-120 minutes depending on the number of questions on the exam. As a rule, 1.2 minute is given per question unless the questions are very long questions, in which case additional 5-10 minues are provided for that exam. The answer sheets are evaluated by an optic reader. Four (4) incorrect answers will cancel 1 correct answer. The CE score will be determined automatically by the computer using the following algorithym:

**(The number of correct answers – (the number of wrong answers/4))x(100/y) where y is the number of questions in the CE.**

Results of the laboratory sessions (microbiology, histology and biochemistry), whenever appropriate, will be added to the CE and will yield CS. The letter grades for the students will be assigned according to the table below. The students who obtained ≥ 50% (CC and better) will be considered as successful for that committee exam. However, even if a student fails a specific committee, it is the year end grade that determines if a student passes the whole year.

At the end of the completion of subject committees, the average CSs of the 4 committees (AVG) will be used for the calculation of year end grade. The student’s grade for the FE or the MUE grade, which will replace the FE grade if the student has failed in the FE, will be used for calculation of year end grade. Students will also get a grade for Good Medical Practice (GMP) – Max grade for this is 4%. The formula for calculating the year end grade is as follows:

(AVG \* 0.6) + (FINAL \* 0.36) + GMP = Year end grade. Year end grade is named as the year course block score.

**Grading Scheme and Grades:**

|  |  |  |  |
| --- | --- | --- | --- |
| **SCORE** | **GRADE** | **GRADE POINTS** | |
| 90-100 | AA | 4,00 | (Excellent) |
| 80-89 | BA | 3,50 | (Excellent) |
| 70-79 | BB | 3,00 | (Very Good) |
| 60-69 | CB | 2,50 | (Very Good) |
| 50-59 | CC | 2,00 | (Good) |
| 45-49 | DC | 1,50 | (Failed) |
| 40-44 | DD | 1,00 | (Failed) |
| 35-39 | FD | 0,50 | (Failed) |
| 0-34 | FF | 0,00 | (Failed) |

The students who obtained ≥ 50 % from the year course block score will be considered successful for that year.

. By taking into account all the scores from required and elective courses(GPA) will be calculated.

## EXAM RULES

* When entering all the exams, students are required to bring their student ID cards with them to the exam room. For the final exams, students are also required to bring their fee payment slips showing that they have paid their tuition fees. These are checked by the university’s security and students are not allowed to sit for their final exams if they do not have their payment slips or their student ID cards.
* The goal is to conduct valid and reliable exams. The formal exams should cover the learning outcomes.
* During exams, use of electronic devices (mobiles, intelligent wristwatches etc) is prohibited.
* Cheating in the exams cannot be tolerated. If a student is caught cheating, his paper will be signed by the invigilating instructor at the end of the exam. If the case is taken to the Disciplinary Committee of the Faculty, the student automatically fails the course.
* During the examination you should not talk, look around, attempt to signal or exchange objects of any kind without permission. If you attempt to cheat you will be recorded as having failed and disciplinary action will be taken against you.
* Once a student hands his or her examination papers and leaves the hall he or she may not return to the examination hall for any reason.
* You are not allowed to leave the examination room within the first 30 and last 15 minutes of the examination.
* Even if you think there are some erroneously printed questions you may not ask the examiners on duty anything about the questions.

**General information about the examination:**

* Examination will be graded by an optic reader. An answer sheet will be provided for recording your answers to all of the multiple choice questions. Each answer sheet has 200 fields and each field has 5 marking spaces (A) through (E). The questions are numbered to correspond to the fields and the answers correspond to marking spaces. When you have decided which answer is correct fill in the corresponding marking space on your answer sheet with a soft pencil. If you change your mind erase your first mark completely.
* Each question has one correct answer. For every four wrong answers one correct answer will be cancelled.
* Do not wrinkle, fold or tear your examination answer sheet.
* The question booklet as well as the answer sheet must be returned

Those students found to have committed academic misconduct will face administrative sanctions imposed by the administration of Near East University Faculty of Medicine according to the disciplinary rules and regulations of the Turkish

Higher Education Council (YÖK) for students. The standard administrative sanctions include, the creation of a disciplinary record which will be checked by graduate and professional life, result in grade “F” on the assignment, exams or tests or in the class. Students may face suspension and dismissal from the Near East University for up to one school year. In addition, student may loose any academic and non academic scholarships given by the Near East University for up to four years. The appropriate sanctions are determined by the Near East University administration according to egregiousness of the Policy violation.

The following is used as the booklet cover for each exam:

1. Students are requested to read carefully the following instructions, as noncompliance with them may lead loss of marks in the examination.

* 1. Time allowed for this examination is **\_\_** minutes.
  2. Check to be sure that your question booklet has **\_\_\_** questions and **\_\_\_** pages numbered consecutively.
  3. During the examination you should not talk, look around, attempt to signal or exchange objects of any kind without permission. If you attempt to cheat, you will be recorded as having failed and disciplinary action will be taken against you.
  4. Once a student hands his or her examination papers and leaves the hall he or she may not return to the examination hall for any reason.
  5. Even if you think there are some erroneously printed questions you may not ask the examiners on duty anything about the questions.

1. General information about the examination:
   1. This examination will be graded by an optic reader. An answer sheet will be provided for recording your answers to all of the multiple-choice questions. Each answer sheet has 200 fields and each field has 5 marking spaces (A) through (E). The questions are numbered to correspond to the fields and the answers correspond to marking spaces. When you have decided which answer is correct fill in the corresponding marking space on your answer sheet with a soft pencil. If you change your mind erase your first mark completely.
   2. Each question has one correct answer. For every four wrong answers one correct answer will be cancelled.
   3. Do not wrinkle, fold or tear your examination answer sheet.

# THE QUESTION BOOKLET AS WELL AS THE ANSWER SHEET MUST BE RETURNED

**WEEKLY COURSE SCHEDULE and LOCATIONS**

|  |  |
| --- | --- |
| **COURSE CODE** | **COURSE** |
| **MED 201** | Tissue&Skeletal System |
| **MED 202** | Muscular and Peripheral Nervous System |
| **MED 203** | Nervous System |
| **MED 204** | Cardiology, Respiratory and Blood System |
| **MED 205** | Gastrointestinal System and Metabolism |
| **MED 206** | Endocrine& Urogenital System |
| **MED 207** | Biological Basis of Diseases |
| **ELECTIVE COURSES** |  |
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# RECOMMENDED TEXTBOOKS

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| **DEPARTMENT** | **TEXTBOOK** | **AUTHOR** | **PUBLISHER** |
| ANATOMY | Gray’s Anatomy for Students | R.L. Drake et al, 3rd Edition, 2014 | Churchill Livingstone |
| Moore Clinical  Oriented  Anatomy | Keith L. Moore, Arthur F. Dalley, Anne M.R.  Agur | Wolters Kluwer |
| Human Anatomy | Martini Tallithsch Nath | Pearson |
| Last's Anatomy:  Regional and  Applied | Chummy S.  Sinnatamby, 12th  Edition | Churchill Livingstone |
| A Textbook of Neuroanatomy | Maria Patestas, Leslie  P. Gartner, 2nd  Edition, 2016 | Wiley-Blackwell |
| Gray’s Anatomy for Students | Richard Drake A.  Wayne Vogl Adam Mitchell | Elsevier |
| Anatomy - An  Essential Textbook | Anne M Gilroy | Thieme |
| Clinical  Neuroanatomy | Gougla J. Gold  Gustavo A. Patinı | Thieme |
| Hollinshead's  Textbook of  Anatomy | Cornelius Rosse,  Penelope GaddumRosse, 5th Edition, 1998 | Lippincott  Williams &  Wilkins |
| BIOCHEMISTRY | Textbook of Biochemistry with Clinical Correlations | Thomas M. Devlin | Wiley-Liss  Publishing Company |
| Harper's  Illustrated  Biochemistry | Robert K. Murray et al | Mc-Graw-Hill Companies |
| Lehninger  Principles of  Biochemistry | David L. Nelson, Michael M. Cox | W.H.Freeman  Publishing  Company |
| BIOPHYSICS | Introductory Biophysics: Perspectives on the Living State | J.R. Claycomb, J.P.  Tran | Jones & Bartlett Publishers |
| BIOSTATISTICS | Primer of  Biostatistics | Stanton Glantz | Mc-Graw-Hill Companies |
| HISTOLOGY | Junqueira's  Basic Histology: Text and Atlas 13th Ed. | Anthony Mescher | Mc-Graw-Hill Companies |
| EMBRYOLOGY | The Developing  Human: Clinically  Oriented  Embryology, 10th Ed. | Keith L. Moore & T. V. N. Persaud | Saunders |
| IMMUNOLOGY | Basic  Immunology:  Functions and | Abul K. Abbas, Andrew H. H.  Lichtman, Shiv Pillai, | Elsevier |

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| --- | --- | --- | --- |
|  | Disorders of the Immune System | 5th edition,.2015 |  |
| MEDICAL BIOLOGY | Molecular  Biology of the  Cell | Bruce Alberts et al | Garland Science |
| MEDICAL  MICROBIOLOGY | Medical Microbiology: with Student Consult | P. R. Murray et al | Saunders |
| PATHOLOGY | Basic Pathology,  10e | Vinay Kumar MBBS  MD et al. 2017  (ISBN-13: 978-  0323353175) | Elsevier |
| PHARMACOLOGY | Goodman &  Gilman’s The  Pharmacological  Basis of  Therapeutics | L.L. Brunton ed. | McGraw-Hill, New York, |
| Basic and Clinical Pharmacology | B. G. Katzung | McGraw-Hill, New York |
| Principles of Pharmacology | Golan, D.E et al | Lippincott  Williams &  Wilkins |
| PHYSIOLOGY | Guyton and Hall  Textbook of  Medical  Physiology | John E. Hall, 13th Edition, 2016 | Saunders |
| Medical  Physiology | Walter F. Boron, Emile  L. Boulpaep 3rd  Edition, 2016 | Elsevier |
| Human  Physiology | Stuart Ira Fox, 14th Edition, 2015 | McGraw-Hill Education |

## COMMITTEE I – MED 201

**TISSUE&SKELETAL SYSTEMS**

## COMMITTEE DURATION:3 weeks

**DISTRIBUTION OF LECTURE HOURS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MED201** | **TISSUE AND SKELETAL SYSTEM** | **THEORETICAL**  **LECTURES**  **(hours)** | **PRACTICAL**  **(hours)** | **TOTAL** |
|  | Anatomy | 22 | 2 Group x 10 Hours | 32 |
| Histology&Embriyology | 24 | 2 Group x 10 Hours | 34 |
| Biochemistry | 9 | - | 9 |
| **TOTAL** | ***55*** | ***20*** | ***75*** |

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|  | **COORDINATION OFFICE** | |
| **Coordinator** | **Sezgin İlgi** | **PhD. Prof.** |
| **Vice Coord.** | **Özgür Tosun** | **PhD. Assist. Prof.** |
| **Vice Coord.** | **Günnur Koçer** | **PhD. Assist. Prof.** |

## COMMITTEE I – TISSUE AND SKELETALSYSTEM AIM and LEARNING OBJECTIVES

**AIMS**

1. **to convey** basic terms and concepts for anatomy, embryology, histology and biochemistry.
2. **to convey** knowledge on fundamental tissues which arebone, muscle, connective and adipose parts forming the body, cells forming these tissues and the intercellular material.
3. **to convey** the skeletal structure in terms of anatomical, physiological and histological features of the bones forming the skeleton

**LEARNING OBJECTIVES**

At the end of the first committee, students should be able to:

1.0 **define** fundamental concepts of anatomy

* 1. **define** anatomy, its historical development and basic anatomical terms.
  2. **explain** basic concepts related to regional and systemic anatomy, osteology, and arthrology
  3. **explain** anatomical characteristics of joints in general.

2.0. **define** anatomical properties and clinical implications for bones and joints of the upper and lower extremity

2.1.**explain** the link between the anatomical characteristics of bones and joints of lower and upper extremities and their clinical reflections.

2.2**. explain**the bone structure of the upper extremity

2.3**explain** the joint of the upper extremity

2.4**explain**thebonestructure of the lower extremity

2.5**explain**the joint of the lower extremity

* 1. **define** anatomical properties and clinical implications for vertebral column, ribs and sternum
  2. **explain**the bone structure of the vertebral column, ribs and sternum

3.1 **explain**the joints of the vertebral column, ribs and sternum

4.0 **define** anatomical properties and clinical implications for bones of neurocranium, viscocranium.

5.0 **define** anatomical properties and clinical implications for skull bones

6.0 **define** anatomical properties and clinical implications for temporomandibular joint

7.0 **define** basic characteristic of the developmental biochemistry

8.0 **explain** the biochemical properties of epithelial tissue

9.0 **explain** the biochemical properties ofconnective tissue

10.0 **explain** the biochemical properties of adiposetissue

11.0. **explain** histological characteristics of lining epitels

12.0. **explain** histological characteristics of glandular epitels

13.0 **explain** histological characteristics of connective tissue

14.0 **explain** histological characteristics of cartilage tissue

15.0**explain** histological characteristics of cartilage tissue

16.0 **list** developmental events of bone structures

17.0 **explain** histological characteristics of bone tissue

18.0**list** developmental events of oogenesis

19.0 **explain** genital cycle

20.0**list** the difference between male and female gametogenesis.

## COMMITTEE I – TISSUE AND SKELETAL SYSTEM ASSESSMENT AND EVALUATION MATRIX

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| **LEARNING OBJECTIVES** | **DEPARTMENT** |  | **Total Exam MCQs** | |  |
| **CE** | **FE** | **M-UE** | **TOTAL** |
| 1.0 - 6.0 | **Anatomy** | 24 | 4 | 4 | **32** |
| 7.0, - 10.0 | **Biochemistry** | 9 | 1 | 1 | **11** |
| 11.0- 20.0 | **Histology and Embryology** | 21 | 4 | 4 | **29** |
|  | **TOTAL** | **54** | **9** | **9** | **72** |

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| --- | --- | --- |
| **LEARNING OBJECTIVES** | **DISCIPLINES** | **LAB POINTS** |
| **1.0-6.0** | **ANATOMY** | **8** |
| **11.0-20.0** | **HISTOLOGY** | **8** |

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| **LEARNING OBJECTIVES** | **DISCIPLINE** |  | **POINTS of ASSESSMENT METHODS** |
| **LPE** |
| **1.0-6.0** | **ANATOMY** |  | **60** |
| **11.0- 20.0** | **HISTOLOGY & EMBRYOLOGY** |  | **40** |
|  |  | **TOTAL** | **100** |

TotalnumberofMCQsare54,equalto100pts.Eachquestionhas100/54 pts. Total value of LPE is equal to 100pts.

**Committee Score (CS)= 90% CE (MCQ and SbMCQ) + 10% (LPE)**

**Abbreviations:**

**MCQ:** Multiple Choice

Question **LPE:** Practical Lecture Evaluation **CE:** CommitteeExam

**CS:** CommitteeScore

**FE:** Final Exam **M-UE:** Make-up Exam

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| **09:00**  **-**  **09:50** | **Anatomy** | **Anatomy** | **Anatomy** | **Anatomy** | **Anatomy** |
| **Introduction to**  **Human Anatomy** | **Joints: General Considerations** | **Skeleton of the Upper Limb** | **Skeleton of Lower Limb** | **Joints of the Lower Limb** |
|  |  |  |  |  |
| **10:00**  **-**  **10:50** | **Histology and Embryology** | **Anatomy** | **Histology and Embryology** | **Anatomy** | **Anatomy** |
| **Lining Epithelium** | **Joints: General Considerations** | **Glandular Epithelium** | **Skeleton of Lower Limb** | **Joints of the Lower Limb** |
|  |  |  |  |  |
| **11:00**  **-**  **11:50** | **Histology and Embryology** | **Histology and Embryology** | **Histology and Embryology** | **Histology and Embryology** | **Histology and Embryology** |
| **Lining Epithelium** | **Lining Epithelium** | **Glandular Epithelium** | **Connective Tissue** | **Connective Tissue** |
|  |  |  |  |  |
| **13:00**  **-**  **13:50** | 12:00-13:00 | LUNCH TIME |  |  |  |
| **Anatomy** | **Histology and Embryology** | **Anatomy** | **LAB** | **Histology and Embryology** |
| **Anatomical Terminology** | **Lining Epithelium** | **Joints of the Upper Limb** | **Histology Embryology: Lining Epithelium (1)** | **Connective Tissue** |
|  |  |  |  |
| **14:00**  **-**  **14:50** | **Anatomy** | **Anatomy** | **Anatomy** | **Anatomy** | **Histology and Embryology** |
| **Bones: General Considerations** | **Skeleton of the Upper Limb** | **Joints of the Upper Limb** | **Skeleton of the upper limb** | **Connective Tissue** |
|  |  |  | **Joints of the Upper Limb(2)** |  |
| **15:00**  **-**  **15:50** |  |  |  | **LAB** |  |
| **Histology Embryology: Lining Epithelium (2)** |
| **16:00**  **-**  **16:50** |  |  |  | **Anatomy** |  |
| **Skeleton of the upper limb** |
| **Joints of the Upper Limb(1)** |

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| **09.00 - 09:50** | **Anatomy** | **Biochemistry** | **Anatomy** | **Histology and Embryology** | **Histology and Embryology** |
| **The Vertebral Column, the Ribs and the**  **Sternum** | **Biochemistry of Epithelial Tissue** | **Joints of Vertebral Column** | **bone formatıon** | **bone formatıon** |
|  |  |  |  |  |
| **10.00 - 10:50** | **Anatomy** | **Biochemistry** | **Histology and Embryology** | **Anatomy** | **Anatomy** |
| **The Vertebral Column, the Ribs and the**  **Sternum** | **Biochemistry of Epithelial Tissue** | **Bone Tissue** | **The Skull-Individual Cranial Bones:**  **Neurocranium** | **The Skull and the**  **Temporomandibular**  **Joint** |
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| **11.00 - 11:50** | **Histology and Embryology** | **Histology and Embryology** | **Histology and Embryology** | **Anatomy** | **Anatomy** |
| **Cartilage Tissue** | **Cartilage Tissue** | **Bone Tissue** | **The Skull-Individual Cranial Bones:**  **Neurocranium** | **The Skull and the**  **Temporomandibular Joint** |

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| **13.00 -**  **13.50** | **Biochemistry** | **Histology and Embryology** | **Anatomy** | **LAB** | **Histology and Embryology** |
| **Development Biochemistry** | **Development of Bones** | **The Skull-Individual Cranial Bones:**  **Viscerocranium** | **Histology Embryology: Group 2** | **Oogenesis and Genital Cycle** |
|  |  |  | **Connective Tissue** |  |
| **14.00-**  **14.50** | **Biochemistry** | **Histology and Embryology** | **Anatomy** |  | **Histology and Embryology** |
| **Development Biochemistry** | **Development of Bones** | **The Skull-Individual Cranial Bones:**  **Viscerocranium** | **Anatomy: The Vertebral** | **Oogenesis and Genital Cycle** |
|  |  |  | **Column, the Ribs and the Sternum,Group 1** |  |
| **15:00 -**  **15.50** | **LAB** | **LAB** |  | **LAB** |  |
| **Histology**  **Embryology:Group 1** | **Histology**  **Embryology:Group 2** | **Histology Embryology: Group 1** |  |
| **Glandular Epithelium** | **Glandular Epithelium** | **Connective Tissue** |  |
| **16.00 - 16:50** | **Anatomy Group 2** | **Anatomy Group 1** |  |  |  |
| **Skeleton of Lower Limb,** | **Skeleton of Lower Limb,** | **Anatomy: The Vertebral** |
| **Joints of the Lower Limb** | **Joints of the Lower Limb** | **Column, the Ribs and the Sternum,Group 2** |

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| **09:00 - 09:50** | **Biochemistry** | **Biochemistry** | **Histology and Embryology** | **Histology &**  **Embryology** | **Histology Practical Exam** |
| **Biochemistry of Connective Tissue** | **Biochemistry of Connective Tissue** | **Gametogenesis-**  **Spermatogenesis** |
|  |  |  |
| **10:00 - 10:50** | **Biochemistry** | **Histology and Embryology** | **Biochemistry** | **Make up** | **Anatomy**  **Practical Exam** |
| **Biochemistry of Connective Tissue** | **Gametogenesis-**  **Spermatogenesis** | **Biochemistry of Adipose Tissue** |
|  |  |  |
| **11:00 - 11:50** | **Histology and Embryology** | **Histology and Embryology** | **Biochemistry** |  |  |
| **Oogenesis and Genital Cycle** | **Gametogenesis-**  **Spermatogenesis** | **Biochemistry of Adipose Tissue** |  |
|  |  |  |  |
| **13:00 - 13:50** | **LAB** | **LAB** | **Anatomy:Group 1** |  |  |
| **Histology**  **Embryology:** | **Histology**  **Embryology:** | **The Skull-Individual Cranial Bones:**  **Viscerocranium** |  |
| **Cartilage and Bone Tissue (1)** | **Cartilage and Bone**  **Tissue (2)** | **Viscerocranium** |  |
|  | **Anatomy:Group 2** | **Anatomy:Group (1)** |  |  |  |
| **14:00 - 14:50** | **Individual Cranial Bones:** | **Individual Cranial Bones:** | **The Skull,**  **Temporomandibular**  **Joint** |  | **Tissue &**  **Skeletal**  **System** |
| **Neurocranium** | **Neurocranium** |  |
|  |  |  |
| **15:00 - 15:50** |  |  | **Anatomy:Group 2** |  | **Committee Examination** |
| **The Skull-Individual Cranial Bones:**  **Viscerocranium** |
|  |
| **16:00 - 16:50** |  |  |  |  |  |
| **The Skull,**  **Temporomandibular**  **Joint** |
|  |

### COMMITTEE II – MED 202

**TISSUE&SKELETAL SYSTEMS**

## COMMITTEE DURATION:5 weeks

**DISTRIBUTION OF LECTURE HOURS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MED 202** | **MUSCULAR AND PERIPHERAL NERVOUS SYSTEM** | **THEORETICAL**  **LECTURES**  **(hours)** | **PRACTICAL**  **(hours)** | **TOTAL** |
|  | Anatomy | 30 | 2 groups x15 hours | 45 |
| Physiology | 22 | 2 groups x 4 hours | 26 |
| Histology and Embryology | 22 | 2 groups x 3 hours | 25 |
| Biochemistry | 6 | - | 6 |
| Biophysics | 4 | - | 4 |
| Good Medical Practise | 4 |  | 4 |
| **TOTAL** | ***88*** | ***22*** | ***110*** |

**COMMITTEE II – MED 202**

**MUSCULAR AND PERIPHERAL NERVOUS SYSTEMS**

## COMMITTEE II – MUSCULAR AND PERIPHERAL NERVOUS SYSTEM AIM and LEARNING OBJECTIVES

**AIMS:**

1. to convey knowledge about anatomical, embryological, histological, physiological, biophysical and biochemical properties of muscular and peripheral nervous system,
2. ***to convey*** knowledge on excitation and contraction mechanisms of muscles
3. to convey information about electrical activity and functional activity of cell membrane
4. to convey information about biomechanics of musculo-skeletal system

**LEARNING OBJECTIVES**

At the end of this committee, student should be able to:

* 1. ***define***fundamental concepts of the anatomy of the muscular system, peripheral nervous and peripheral part of the vascular systems.
  2. ***explain*** basic concepts related to myology
  3. **explain** basic concepts related to nervous system
  4. **explain** basic concepts related to vascular system
  5. Muscle Movements, Types, and Names
  6. ***explain*** the criteria used to name skeletal muscles
  7. ***explain*** how understanding the muscle names helps describe shapes, location, and actions of various muscles
  8. ***describe*** how fascicles are arranged within a skeletal muscle
  9. ***name and locate*** the major muscles of the human body (on a torso model, muscle chart, or diagram) and state the action of each.
  10. ***identify*** the different types of body movements.
  11. ***define*** origin, insertion, prime mover, antagonist, synergist, and fixatoras they relate to muscles.
  12. ***Identify*** the skeletal muscles and their actions on the skeleton and soft tissues of the body
  13. ***compare*** and contrast agonist and antagonist muscles

3.0. ***identify*** the axial muscles of the face, head, and neck

4.0. ***identify*** the movement and function of the face, head, and neck muscles

5.0. ***identify*** the intrinsic skeletal muscles of the back and neck, and the skeletal muscles of the thorax

6.0. ***identify*** the movement and function of the intrinsic skeletal muscles of the back and neck, and the skeletal muscles of the thorax

7.0. ***identify*** the muscles of the pectoral girdle and upper limbs

8.0. ***identify*** the movement and function of the pectoral girdle and upper limbs 9.0. ***identify*** the appendicular muscles of the pelvic girdle and lower limb

10.0. ***identify*** the movement and function of the pelvic girdle and lower limb

11.0. ***describe*** the clinical implications of the anatomical features of the upper limb and axial muscles.

12.0. ***describe*** the location od the infratemporal and pterygopalatine fossea 13.0. ***identify*** the mastication muscles and the temporal fossa

14.0. ***list*** all of the components of the brachial plexus.

15.0. ***list*** all of the components of the lumbosacral plexus.

16.0. ***explain*** the major events of a skeletal muscle contraction within a muscle in generating force

17.0. ***describe*** how an action potential is initiated in a muscle cell.

18.0. ***describe*** explain muscle contraction mechanism on the basis of Sliding Filament Theory.

19.0. ***define*** graded response, tetanus, isotonic and isometric contractions, and muscle toneas these terms apply to a skeletal muscle.

20.0. define membrane and action potentials and sodium/potassium pumps.

21.0. list mechanisms of excitation and contraction in skeletal muscle.

22.0. describe histological characteristics and main function of musle,

* 1. for muscle tissue
  2. ***define*** general histologic structure.
  3. ***explain*** the role of the following: endomysium, perimysium, epimysium, tendon,and aponeurosis.
  4. ***describe*** the microscopic structure of skeletal muscle at the light microscope and explain the function (role of actin and myosin containing myofilaments).
  5. ***summarize*** the main similarities and differences between three different types of muscle.
  6. for peripheral nervous system
  7. ***define*** general histologic structure.
  8. ***describe*** histological characteristics and relate main functions of the peripheral nerve system

25.0. ***describe*** fertilization and first to eight weeks of development

26.0. ***describe*** contraception and assisted reproductive techniques.

27.0. ***associate the relation*** with congenital abnormalities and developmental processes.

* 1. ***Define*** oxygen debt and muscle fatigue and list possible causes of muscle fatigue.
  2. define structural and biochemical functions of the muscle
  3. define structural and biochemical functions of the peripheral nerves 29.0. ***explain*** basic physical properties of biomaterials (such as muscle and vessels)

30.0. ***describe*** basic terms and concepts about first aid.

31.0. ***describe*** basic terms and concepts of communication skills.

## COMMITTEE II– MUSCLE AND PERIPHERAL NERVOUS SYSTEMS ASSESSMENT AND EVALUATION MATRIX

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LEARNING OBJECTIVES** | **DEPARTMENT** |  | **Total Exam MCQs** | |  |
| **CE** | **FE** | **M-UE** | **TOTAL** |
| 1.0 - 15.0 | **Anatomy** | 34 | 7 | 7 | **48** |
| 16.0- 21.0 | **Histology and Embryology** | 20 | 3 | 3 | **26** |
| 22.0- 27.0 | **Physiology** | 15 | 4 | 4 | **23** |
| 28.0 | **Medical Biochemistry** | 6 | 1 | 1 | **8** |
| 16.0-17.0-20.0-  29.0 | **Biophysics** | 4 | 1 | 1 | **6** |
| 30.0-31.0 | **Good Medical Practice** | **\*** | **\*** | **\*** | **\*** |
|  | **TOTAL** | **79** | **16** | **16** | **111** |

|  |  |  |
| --- | --- | --- |
| **LEARNING OBJECTIVES** | **DISCIPLINES** | **LAB POINTS** |
| **1.0-15.0** | **ANATOMY** | **7** |
| **16.0-21.0** | **HISTOLOGY** | **4** |

|  |  |  |
| --- | --- | --- |
| **LEARNING OBJECTIVES** | **DISCIPLINE** | **POINTS of ASSESSMENT METHODS** |
| **LPE** |
| 1.0 - 15.0 | ANATOMY | 60 |
| 16.0- 21.0 | HISTOLOGY & EMBRYOLOGY | 40 |
| **TOTAL** | | **100** |

TotalnumberofMCQsare 79,equalto100pts.Eachquestionhas100/79 pts. Total value of LPE is equal to 100pts. **\*:**The Assessment procedure of GMP is given in part of the Assessment Procedure of the final exam.

### Committee Score (CS)= 90% CE (MCQ and SbMCQ) + 10% (LPE)

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|  |  |  |  |  |  |
| **09:00**  **-**  **09:50** | **Anatomy** | **Anatomy** | **Anatomy** | **Histology and Embryology** | **Anatomy** |
| **Muscles: general Considerations** | **The Superficial Back** | **The Mammary Glands** | **Nerve Tissue** | **Axilla and Brachial Plexus** |
|  |  |  |  |  |
| **10:00**  **-**  **10:50** | **Anatomy** | **Anatomy** | **Anatomy** | **Physiology** | **Anatomy** |
| **Introduction to Nervous System** | **Post Aspect of the Shoulder and Arm** | **The Flexor Aspect of the Forearm and**  **Cubital Fossa** | **Contraction,**  **Physiological properties of Motor Units** | **Axilla and Brachial Plexus** |
|  |  |  |  |  |
| **11:00**  **-**  **11:50** | **Histology and Embryology** | **Physiology** | **Anatomy** | **Physiology** | **Histology and Embryology** |
| **Muscle Tissue** | **Neuromuscular junction** | **The Flexor Aspect of the Forearm and**  **Cubital Fossa** | **Contraction,**  **Physiological properties of Motor Units** | **Nerve Tissue** |
|  |  |  |  |  |
| **13:00**  **-**  **13:50** |  | |  | | |
| **Physiology** | **Anatomy** | **Histology and Embryology** | **LAB** | **Histology and Embryology** |
| **General**  **Consideration of**  **Striated Muscle** | **Anterior Aspect of Shoulder and Arm** | **Muscle Tissue** | **Histology Embryology:**  **Histology of the Muscle**  **Tissue (Group 1) Anatomy: The**  **Superficial Back - Posterior Aspect of**  **Shoulder And Arm**  **(Group 2)**  **Posterior Aspect of Shoulder)**  **And Arm (Group 2** | **Nerve Tissue** |
|  |  |  |  |
| **14:00**  **-**  **14:50** | **Physiology** | **Anatomy** | **Histology and Embryology** |  |
| **General**  **Consideration of**  **Striated Muscle** | **Anterior Aspect of Shoulder and Arm** | **Muscle Tissue** |
|  |  |  |
| **15:00**  **-**  **15:50** |  |  |  | **LAB** |  |
| **Histology Embryology:**  **Histology of the Muscle**  **Tissue (Group 2) Anatomy: The**  **Superficial Back - Posterior Aspect of**  **Shoulder And Arm (Group 1)** |
| **16:00**  **-**  **16:50** |  |  |  |  |  |

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| **09:00**  **-**  **09:50** | **Biochemistry** | **Anatomy** | **Physiology** | **Histology and Embryology** | **Histology and Embryology** |
| **Biochemistry of Muscle Tissue** | **Anatomy of the Hand** | **Physiology of Smooth Muscle** | **Second Week of Development** | **Third Week of Development** |
|  |  |  |  |  |
| **10:00**  **-**  **10:50** | **Biochemistry** | **Anatomy** | **Histology and Embryology** | **Histology and Embryology** | **Histology and Embryology** |
| **Biochemistry of Muscle Tissue** | **Anatomy of the Hand** | **Fertilization and the**  **First Week of**  **Development** | **Second Week of Development** | **Third Week of Development** |
|  |  |  |  |  |
| **11:00**  **-**  **11:50** | **Physiology** | **Histology and Embryology** | **Histology and Embryology** | **Physiology** | **Biochemistry** |
| **Mechanical**  **Properties of**  **Striated Muscle** | **Fertilization and the First Week of**  **Development** | **Fertilization and the**  **First Week of**  **Development** | **Physiology of Smooth Muscle** | **Biochemistry of Nervous Tissue** |
|  |  |  |  |  |
| **13:00**  **-**  **13:50** |  |  |  |  |  |
| **Anatomy** | **LAB** | **Biochemistry** | **Anatomy: Flexor Aspect of Forearm, Fossa Cubiti**  **(Group 1)** | **Biochemistry** |
| **The Extensor**  **Aspect of the Forearm** | **Histology**  **Embryology:**  **Histology of the**  **Nerve Tissue**  **(Group 2)** | **Biochemistry of Blood Tissue** | **Biochemistry of Nervous Tissue** |
|  |  |  |
| **14:00**  **-**  **14:50** | **Anatomy** | **Anatomy: Anterior**  **Aspect of Shoulder**  **And Arm - Axilla and Plexus Brachialis -**  **Mammary Glands (Group 1)** | **Biochemistry** | **Anatomy: Extansor**  **Aspect of Forearm,**  **Anatomy of the hand (Group 1)** |  |
| **The Extensor**  **Aspect of the Forearm** | **Biochemistry of Blood Tissue** |
|  |  |
| **15:00**  **-**  **15:50** |  | **LAB** |  | **LAB** |  |
| **Histology**  **Embryology:**  **Histology of the**  **Nerve Tissue**  **(Group 1)** | **Anatomy: Flexor Aspect of Forearm, Fossa Cubiti**  **(Group 2)** |
| **16:00**  **-**  **16:50** |  | **Anatomy: Anterior**  **Aspect of Shoulder**  **And Arm - Axilla and Plexus**  **Brachialis -**  **Mammary Glands (Group 2)** |  | **LAB** |  |
| **Anatomy: Extansor**  **Aspect of Forearm,**  **Anatomy of the hand (Group 2)** |

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| **09:00**  **-**  **09:50** |  |  | |  | |
| **Histology and Embryology** | **Anatomy** | **Physiology** | **Anatomy** | **Good Medical Practice** |
| **Fourth to eight weeks of development** | **The Lateral and**  **Posterior Aspect of the**  **Thigh, Popliteal Fossa** | **Synapse andSynaptic Transmission** | **The Anterior and**  **Medial Aspect of the**  **Thigh** |
|  |  |  |  |
| **10:00**  **-**  **10:50** | **Histology and Embryology** | **Physiology** | **Anatomy** | **Anatomy** |  |
| **Fourth to eight weeks of development** | **Physiology of**  **Peripheral Nervous**  **System** | **Lumbosacral plexus** | **The Anterior and**  **Medial Aspect of the**  **Thigh** | **MEDICAL** |
|  |  |  |  |  |
| **11:00**  **-**  **11:50** | **Anatomy** | **Physiology** | **Anatomy** | **Physiology** | **EDUCATION**  **AND** |
| **Gluteal Region** | **Physiology of**  **Peripheral Nervous**  **System** | **Lumbosacral plexus** | **Synapse and Synaptic Transmission** |
|  |  |  |  | **INFORMATICS** |
| **13:00**  **-**  **13:50** |  |  | |  |  |
| **Biophysics** | **Biophysics** | **Histology and Embryology** | **LAB**  **Anatomy: Gluteal**  **Region and posterior aspect of the thigh**  **(Group 2)** |  |
| **Biomechanics of**  **Masculo-Skeletal System** | **Passive Propagation of Membrane Potential** | **Clinical Embryology and Assisted**  **Reproductive Techniques** |  |
|  |  |  |
| **14:00**  **-**  **14:50** | **Biophysics** | **Biophysics** | **Histology and Embryology** | **LAB**  **Anatomy: Gluteal**  **Region and posterior aspect of the thigh**  **(Group 2)** |  |
| **Biomechanics of**  **Masculo-Skeletal System** | **Structure Function**  **Relationship in Nerve Cells** | **Clinical Embryology and Assisted**  **Reproductive Techniques** |  |
|  |  |  |  |
| **15:00**  **-**  **15:50** |  |  |  | **LAB**  **Anatomy:Anterior and**  **Medial Aspect of the**  **Thigh (1)** |  |
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| **16:00**  **-**  **16:50** |  |  |  | **LAB**  **Anatomy:Anterior and**  **Medial Aspect of the**  **Thigh (1)** |  |
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| **09:00**  **-**  **09:50** | **Anatomy** | **Anatomy** | **LAB**  **Anatomy**  **Group (2)** | **Anatomy** | **Anatomy** |
| **Lateral and Anterior Aspect of the Leg** | **Posterior Aspect of the**  **Leg** | **Lateral and Anterior Aspect of Leg** | **Parotid Gland** | **The Infratemporal and Pterygopalatine Fossea** |
|  |  | **Anatomy of the Foot** |  |  |
| **10:00**  **-**  **10:50** | **Histology and Embryology** | **Histology and Embryology** |  | **Histology and Embryology** | **Anatomy** |
| **Extra Embryonic**  **Structures-Placenta and Umblical Cord and Multiple**  **Pregnancies** | **Teratology and**  **Embryological**  **Malformations** | **LAB**  **Anatomy**  **Group (1)**  **Lateral and Anterior** |  | **Muscles of**  **Mustication and**  **Temporal Fossa** |
|  |  | **Aspect of the Leg**    **Anatomy of the**  **Foot** |  |  |
| **11:00**  **-**  **11:50** | **Histology and Embryology** | **Histology and Embryology** | **Discussion:**  **Embryology**  **Sevinç EGE** | **Anatomy** |
| **Extra Embryonic**  **Structures-Placenta and Umblical Cord and Multiple**  **Pregnancies** | **Teratology and**  **Embryological**  **Malformations** | **Sectional Anatomy** |
|  |  |  |  |
| **13:00**  **-**  **13:50** |  | |  | **LAB**  **Anatomy**  **Group (1)** |  |
| **Physiology** | **Anatomy** | **Anatomy** | **Posterior Aspect of the Leg**      **The Suboccipital**  **Region and Deep**  **Muscles of the Back** |
| **Autonomic Nervous System** | **Anatomy of the Foot** | **Superficial**  **Structures of the**  **Face** |
|  |  |  |  |  |
| **14:00**  **-**  **14:50** | **Physiology** | **Anatomy** | **Anatomy** |
| **Autonomic Nervous System** | **The Suboccipital Region and Deep Muscles of the Back** | **Superficial**  **Structures of the**  **Face** |
|  |  |  | **LAB**  **Anatomy**  **Group (2)** |  |
| **15:00**  **-**  **15:50** |  |  |  | **Anatomy: Posterior**  **Aspect of the Leg**      **The Suboccipital**  **Region and Deep**  **Muscles of the Back** |
| **16:00**  **-**  **16:50** |  |  |  |  |
|  |  |  |  |  |  |
|  | **MONDAY** | **TUESDAY** | **WEDNESDAY** | **THURSDAY** | **FRIDAY** |
| **09:00**  **-**  **09:50** | **Histology and Embryology** |  |  |  | **Histoloji ve**  **Embriyology**  **Practical Exam** |
| **MAKE-UP** |
| **10:00**  **-**  **10:50** |  |  |  | **Anatomi Practical Exam** |
| **11:00**  **-**  **11:50** |  |  |  |  |
| **13:00**  **-**  **13:50**  **14:00**  **-**  **14:50** | **LAB** |  |  |  |  |
| **Anatomy: Superficial Structure of the Face, Muscles**  **of Mastication (2)**    **LAB**  **Fossa**  **Intratemporalis,**  **Fossa Temporalis and Pterygopalatina**  **Fossa (2)** | **Muscle and** |
| **the Periferal** |
|  |  |  | **Nervous system** |
| **Committee** |
|  | **Exam** |
| **15:00**  **-**  **15:50** | **LAB**  **Anatomy: Superficial Structure of the Face, Muscles**  **of Mastication (1) Fossa**  **Intratemporalis,** |  |  |  |  |
|  |
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|  |  |  |  |  |
| **16:00**  **-**  **16:50** | **Fossa Temporalis and Pterygopalatina Fossa (1)** |  |  |  |  |

**COMMITTEE III – MED 203**

**NERVOUS SYSTEM**

## COMMITTEE DURATION:6 weeks

**DISTRIBUTION OF LECTURE HOURS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MED 201** | **NERVOUS SYSTEM** | **THEORETICAL**  **LECTURES**  **(hours)** | **PRACTICAL**  **(hours)** | **TOTAL** |
|  | Anatomy | 43 | 2 group x16 hours | **59** |
| Physiology | 35 | 2 group x 4 hours | **39** |
| Histology and Embryology | 15 | 2 group x 4 hours | **19** |
| Biophysics | 14 | - | **14** |
| Good Medical Practice | 8 | - | **8** |
| **TOTAL** | ***115*** | ***24*** | ***139*** |

**COMMITTEE IV - NERVOUS SYSTEM**

**AIM and LEARNING OBJECTIVES**

**AIMS**

1. **to convey** basic knowledge on biophysical, biological, anatomical, embryological, histological, physiological and biochemical properties of nervous system,
2. **to convey**knowledge on histology and development of central and peripheral nervous system and special senses,
3. **to convey**knowledge on biological basics of vision, hearing and taste sensation.

**LEARNING OBJECTIVES**

At the end of this committee, student should be able to:

1.0. ***describe*** biophysical basis of nervous system.

2.0. ***explain*** basic physical properties of biomaterials (such as muscle and vessels)

* 1. In nervous system;
  2. ***describe*** the anatomy of cerebrum, cerebellum, meninges, brain stem, cranial nerves and spinal cord,
  3. ***describe*** limbic and autonomic nervous system,
  4. ***describe*** the anatomy of structures forming eyes and ears,
  5. ***describe*** the anatomy of skin and its derivatives and the mammary glands
  6. ***describe*** descending and ascending pathways, 3.6. associate with adjacent tissue and organs,

3.7. ***explain*** functional and clinical reflections.

4.0 For central and peripheral nervous system and special senses;

* 1. ***classify*** embryological origins,
  2. ***explain*** developmental stages,
  3. ***describe*** histological properties.

5.0. ***explain*** nervous conduction, ion channels and intracellular, extracellular ion concentration differences.

6.0. ***describe*** neuron, neuroglia, neurotransmitters and nerve fibers.

7.0. ***explain*** the synthesis and inactivation of neurotransmitters.

8.0. ***describe*** the energy mechanisms of brain.

* 1. In the nervous system;
  2. ***explain*** parts and functions of brain cortex,
  3. ***describe*** sensorial transmission pathways and special senses,
  4. ***describe*** control of motor function (cortex, cerebellum, basal ganglions and brain stem),
  5. ***describe*** functions of hypothalamus.

10.0. ***explain*** the relationship of learning-memory with hippocampus.

* 1. For brain waves and reflexes;
  2. ***explain*** how they are measured in clinics.

12.0. ***explain*** biochemical basics of vision, hearing and taste senses

13.0 ***describe*** basic terms and concepts about first aid.

14.0 ***describe*** basic terms and concepts of communication skills.

**COMMITTEE III–NERVOUS SYSTEMS**

**ASSESSMENT AND EVALUATION MATRIX**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LEARNING OBJECTIVES** | **DEPARTMENT** |  | **Total Exam MCQs** | |  |
| **CE** | **FE** | **M-UE** | **TOTAL** |
| 3.0 | **Anatomy** | **40** | 7 | 7 | **54** |
| 4.0 | **Histology and Embryology** | **17** | 3 | 3 | **23** |
| 5.0-11.0 | **Physiology** | **24** | 5 | 5 | **34** |
| 1.0-2.0 | **Biophysics** | **13** | 2 | 2 | **17** |
| 13.0-14.0 | **Good Medical Practice** | \* | \* | **\*** | **\*** |
|  | **TOTAL** | **94** | **17** | **17** | **128** |

|  |  |  |
| --- | --- | --- |
| **LEARNING OBJECTIVES** | **DISCIPLINE** | **POINTS of ASSESSMENT METHODS** |
| **LPE** |
| **3.0** | **ANATOMY** | **60** |
| **4.0** | **HISTOLOGY & EMBRYOLOGY** | **40** |
|  | **TOTAL** | **100** |

|  |  |  |
| --- | --- | --- |
| **LEARNING OBJECTIVES** | **DISCIPLINES** | **LAB POINTS** |
| **3.0** | **ANATOMY** | **4** |
| **4.0** | **HISTOLOGY** | **2** |

TotalnumberofMCQsare94,equalto100pts.Eachquestionhas100/94 pts. Total value of LPE is equal to 100pts.

\*: The standard procedurefor assessingMedial Education & Informatics is providedin the section for assessing the Final Exam.

#### Committee Score (CS) = 90% CE (MCQs) + 10% (LPE)

**Abbreviations:**

**MCQ:** Multiple Choice

Question **LPE:** Practical Lecture Evaluation **CE:**

CommitteeExam

**CS:** CommitteeScore

**FE:** Final Exam

**M-UE:** Make-up Exam

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| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| **09:00 -**  **09:50** | **Anatomy** | **Histology and Embryology** | **Histology and Embryology** | **Histology and Embryology** | **Histology and Embryology** |
| **Introduction to Nervous System** | **Histology of the Nervous System** | **Development of Nervous System** | **Development of the Nervous System** | **Histology of the Skin and Its derivatives** |
|  |  |  |  |  |
| **10:00 -**  **10:50** | **Anatomy** | **Histology and Embryology** | **Anatomy** | **Histology and Embryology** | **Anatomy** |
| **Spinal Cord: General**  **Topography and Internal**  **Structure** | **Histology of Nervous System** | **The Cerebellum** | **Development of the Nervous System** | **Cranial Nerves: VII-XII** |
|  |  |  |  |  |
| **11:00 -**  **11:50** | **Histology and Embryology** | **Anatomy** | **Anatomy** | **Anatomy** | **Anatomy** |
| **Histology of the Nervous System** | **Medulla Oblangata** | **The Cerebellum** | **Cranial Nerves: I- VI** | **The Sympathetic System** |
|  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **13:00 -**  **13:50** |  | **Anatomy** | **LAB:** | **Anatomy** | **Anatomy** |
| **Pons** | **Histology Embryology:**  **Histology of the Nervous System (Grup 1)** | **Cranial Nerves: I- VI** | **The Sympathetic System** |
|  |  |  |
| **14:00 -**  **14:50** | **Anatomy** | **Anatomi: Spinal Cord**  **(Grup 2)** | **Anatomy** |  |
| **Mesencephalon** | **Cranial Nerves: VII-XII** |
|  |  |
| **15:00 -**  **15:50** |  |  | **LAB:** |  |  |
| **Histology Embryology:**  **Histology of the Nervous System (Grup 2)** |
| **16:00 -**  **16:50** |  |  | **Anatomi: Spinal Cord(Grup 1)** |  |  |

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| **09:00**  **-**  **09:50** | **Histology and Embryology** | **Histology and Embryology** | **Anatomy** |  |  |
| **Development of the**  **Skin and Its**  **Derivatives** | **Development of the**  **Skin and Its**  **Derivatives** | **Cerebral Hemispheres: General Topography** |  |
|  |  |  |
| **10:00**  **-**  **10:50** | **Anatomy** | **Anatomy** | **Anatomy** | **GPM** |
| **The**  **Parasympathetic**  **System** | **Epithalamus,**  **Subthalamus and Basal Ganglia** | **Cerebral Hemispheres: Medullary Substance** |
|  |  |  |
| **11:00**  **-**  **11:50** | **Anatomy** | **Anatomy** | **Anatomy** | Group I |
| **The**  **Parasympathetic System** | **Epithalamus,**  **Subthalamus and Basal Ganglia** | **Cerebral Hemispheres:**  **Motor and Sensory areas** |
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| **13:00**  **-**  **13:50** | **Anatomy** | **Anatomy** | **Anatomy** |  |
| **Thalamus** | **Hypophysis** | **Olfactory Pathways,**  **Rhinencephalon and Limbic System** |
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| **14:00**  **-**  **14:50** | **Anatomy** | **LAB.**  **Anatomy: Brain**  **Stem, Cerebellum Group 1** | **Anatomy** |  |
| **Hypothalamus** | **Vessels of the Central Nervous System** | **GPM** |
|  |  | Group II |
| **15:00**  **-**  **15:50** |  | **LAB.**  **Anatomy: Brain**  **Stem, Cerebellum Group 2** |  |  |
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| **16:00**  **-**  **16:50** |  |  |  |  |
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| **09:00**  **-**  **09:50** |  |  | **Anatomy** | **Biophysics** | **Biophysics** |
| **Anatomy** | **Physiology** | **The Orbit and Its Contents** | **Biomedical Signal Analysis** | **Neural Coding and**  **Information**  **Transmission** |
| **Olfactory**  **Pathways,**  **Rhinencephalon and Limbic**  **System** | **Central Nervous System-Introduction** |  |  |  |
| **10:00**  **-**  **10:50** |  |  | **Anatomy** | **Biophysics** | **Biophysics** |
| **Anatomy** | **Physiology** | **The Orbit and Its Contents** | **Biomedical Signal Analysis** | **Neural Coding and**  **Information**  **Transmission** |
| **Vessels of the**  **Central Nervous**  **System** | **Central Nervous System-Introduction** |  |  |  |
| **11:00**  **-**  **11:50** |  |  | **Physiology** |  | **Biophysics** |
|  | **Physiology** | **Somatic Sensations-I Tactile and Position senses** | **Neural Coding and**  **Information**  **Transmission** |
| **Sensory physiology, sensory receptors and receptor potentials** |  |  |
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| **13:00**  **-**  **13:50** | **LAB** |  | **Physiology** | **LAB. Anatomy:**  **Cranial Nerves group 2** | **Physiology** |
| **Anatomy:cerebral**  **Hemispheres** |  | **Somatic Sensations-I Tactile and Position senses** | **Motor Functions of the spinal cord** |
| **Group 2** |  |  |
| **14:00**  **-**  **14:50** | **LAB** |  | **Physiology** | **LAB: Anatomy:**  **Cranial Nerves group 1** | **Physiology** |
| **Anatomy:cerebral**  **Hemispheres** |  | **Somatic Sensations-II Pain and Thermal Sensations** | **Motor Functions of the spinal cord** |
| **Group 1** |  |  |  |
| **15:00**  **-**  **15:50** |  |  |  |  | **LAB** |
|  | **Anatomy:**  **Diencephalon,**  **Hypophysis and Basal**  **Ganglia**  Group 1 |
| **16:00**  **-**  **16:50** |  |  |  | **LAB** |
|  | **Anatomy:**  **Diencephalon,**  **Hypophysis and Basal**  **Ganglia**  Group 2 |

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| **09:00**  **-**  **09:50** | **Anatomy** | **Physiology** | **Physiology** | **Anatomy** | **Anatomy** |
| **Meninges and Sinuses of the**  **Brain** | **Physiology of Vision-optic of the eye, retina** | **Chemical senses (Smell and Taste)** | **The Visual Pathway** | **Brain Ventricles and Cerebrospinal Fluid** |
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| **10:00**  **-**  **10:50** | **Anatomy** | **Physiology** | **Physiology** | **Biophysics** | **Biophysics** |
| **The Eyeball** | **Physiology of Vision-optic of the eye, retina** | **Physiology of Hearing** | **EKG** | **Biophysical Aspect of Vision** |
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| **11:00**  **-**  **11:50** | **Anatomy** | **Physiology** | **Physiology** | **Biophysics** | **Biophysics** |
| **The Eyeball** | **Physiology of Visioncentral neurophysiology**  **of vision** | **Physiology of Hearing** | **EKG** | **Biophysical Aspect of Vision** |
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| **13:00**  **-**  **13:50** | **Histology and Embryology** | **Physiology** | **Physiology** | **Biophysics** | **Biophysics** |
| **Histology of the Eyes** | **Physiology of Visioncentral neurophysiology**  **of vision** | **Cerebral circulation, cerebrospinal fluid and brain metabolism** | **EEG** | **Biophysicsical Aspect of Hearing** |
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| **14:00**  **-**  **14:50** | **Histology and Embryology** | **Physiology** | **Physiology** | **Biophysics** | **Biophysics** |
| **Histology of the Eyes** | **Chemical senses (Smell and Taste)** | **Discussion** | **EMG** | **Biophysicsical Aspect of Hearing** |
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|  |  | **Anatomy:Meninges ans** |  |  |  |
| **15:00**  **-**  **15:50** |  | **Sinuses of the Brain**  **Vessels of the Central**  **Nervous System Group 1** |  |  |  |
|  |  | **Anatomy:Meninges ans**  **Sinuses of the Brain**  **Vessels of the Central Nervous System Group 2** |  |  |  |
| **16:00**  **-**  **16:50** |  |

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| **09:00**  **-**  **09:50** | **Physiology** | **Physiology** | **Physiology** | **Histology and Embryology** | **Histology and Embryology** |
| **Role of the motor cortex and brain**  **stem in controlling motor functions** | **Thalamus and reticular formation,neurochemical control of the brain** | **Learning and the memory** | **Development of the Eyes** | **Histology of the Ears** |
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| **10:00**  **-**  **10:50** | **Physiology** | **Physiology** | **Physiology** | **Histology and Embryology** | **Histology and Embryology** |
| **Role of the motor cortex and brain**  **stem in controlling motor functions** | **Thalamus and reticular formation,neurochemical control of the brain** | **EEG, physiology of sleep, epilepsy** | **Development of the Eyes** | **Histology of the Ears** |
|  |  |  |  |  |
| **11:00**  **-**  **11:50** | **Physiology** | **Physiology** | **Physiology** | **Anatomy** | **Anatomy** |
| **Cerebellum, basal ganglia and their motor functions** | **Hypothalamus, limbic system, and phsiology of the emotions** | **EEG, physiology of sleep, epilepsy** | **Auditory Pathway** | **Vestibular System** |
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| **13:00**  **-**  **13:50** | **Physiology** | **Physiology** | **Anatomy** | **Anatomy** | **LAB:** |
| **Cerebellum, basal ganglia and their motor functions** | **Hypothalamus, limbic system, and phsiology of the emotions** | **The Ear** | **Central Nervous**  **System: Efferent Pathways** | **Histology and Embryology**  **Histology of the**  **Sensory organs Group2** |
|  |  |  |  |
| **14:00**  **-**  **14:50** | **Physiology** | **Physiology** | **Anatomy** | **Anatomy** | **Anatomy:**  **The Orbit and Its Contents**  **and the Eyeball Grup 1** |
| **Vestibular sensations and**  **maintenance of equilibrium** | **Language and hemispheric lateralization** | **The Ear** | **Central Nervous**  **System: Efferent Pathways** |
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| **15:00**  **-**  **15:50** |  |  |  |  | **LAB:** |
| **Histology and Embryology**  **Histology of the**  **Sensory organs Group1** |
|  |  |  |  |  | **Anatomy:** |
| **16:00**  **-**  **16:50** |  |  |  |  | **The Orbit and Its Contents**  **and the Eyeball Grup 2** |

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| **09:00**  **-**  **09:50** | **Anatomy** | **LAB** | **INDEPENDENT STUDY** | **INDEPENDENT STUDY** | **Histology and Embryology** |
| **Central Nervous**  **System: Afferent Pathways** | **Histology Make-Up** | **Practical Examination** |
|  |
| **10:00**  **-**  **10:50** | **Anatomy** | **Anatomy** |
| **Central Nervous**  **System: Afferent Pathways** | **Practical Examination** |
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| **11:00**  **-**  **11:50** | **Anatomy** |  |  |
| **Sectional Anatomy** |
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|  |  |  | **Nervous System** |
| **13:00**  **-**  **13:50** | **Histology and Embryology** |  |
| **Development of the Ears** |
|  |
| **14:00**  **-**  **14:50** | **Histology and Embryology** |  | **Commitee Examination** |
| **Development of the Ears** |
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|  | **LAB** |  |  |
| **15:00**  **-**  **15:50** | **Anatomy: Ear**  **Group 1** |  |  |  |  |
|  | **LAB** |  |  |
| **16:00**  **-**  **16:50** | **Anatomy: Ear**  **Group 2** |  |  |  |  |

**COMMITTEE IV - Cardiovascular, Respiratory and**

**Blood Systems**

## DISTRIBUTION of LECTURE HOURS

**COMMITTEE DURATION:**

**6WEEKS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MED 204** | **Cardiology, Respiratory and Blood Systems** | **THEORETICAL**  **(hours)** | **PRACTICAL**  **(hours)** | **TOTAL** |
|  | Anatomy | 20 | 2 groups x 10 | 30 |
| Histology & Embryology | 24 | 2 groups x 6 | 30 |
| Physiology | 37 | 2 groups x 4 | 41 |
| Biophysics | 6 | - | 6 |
| Good Medical Practice | 8 |  | 8 |
| **TOTAL** | ***95*** | ***20*** | ***115*** |

**COMMITTEE IV – CARDIOVASCULAR, RESPIRATORY AND BLOOD SYSTEMS**

## AIMS and LEARNING OBJECTIVES

**AIMS**

1. **to convey** knowledge about biophysical, biological, anatomical, embryological, histological, physiological and biophysical properties of cardiovascular and respiratory system
2. **to convey** knowledge on hemodynamics of cardiovascular and respiratory system.
3. **to convey** information about electrical activity and functional activity of heart and lungs by defining basic parameters
4. **to convey** information about cardiovascular, respiratory and blood system anatomy

**LEARNING OBJECTIVES**

At the end of this committee, student should be able to:

* 1. **describe** the anatomy of cardiovascular system
  2. describe the anatomy of heart, pericardium and Great Wessels
  3. **describe** the anatomy of respiratory system
  4. describe the anatomy of nose, paranasal sinus, pharynx, larynx, and lung

3.0. **explain** the association of cardiovascular and respiratory organs with adjacent organs and tissues

4.0. **describe** the developmental stages of cardiovascular and respiratory systems

5.0. **list** embryological origins of organs,

6.0. **associate** the relation between major birth abnormalities and developmental processes for cardiovascular and respiratory systems

7.0. **list** lymphatic organs of cardiovascular system and histological properties of blood.

8.0. **explain** hemodynamics of cardiovascular system and electrical activity of heart by biophysical mechanisms.

9.0. **describe** the structure, functions, synthesis and degradation of hemoglobin.

10.0. **describe** erythrocyte-specific metabolisms.

11.0. **describe** formation, differentiation and functions of blood cells.

12.0. **describe** heart rhythm, cardiac output and cardiac cycle.

13.0. **describe** nervous (autonomous) control of cardiovascular system.

14.0. **explain** functions of cardiovascular system.

15.0. **explain** functions and dynamics of circulatory system.

16.0. **explain** measurements of hematocrit, blood group analysis, blood pressure and ECG methods

17.0. **explain** functions of pulmonary system.

18.0. **explain** mechanisms of oxygen and carbon dioxide exchange and transportation.

19.0. **describe** dynamics of microcirculation together with general and pulmonary circulation.

20.0. **describe** nervous (autonomous) control of pulmonary system.

21.0. **describe** dynamics and control of pulmonary circulation.

22.0. **explain** basics of exercise physiology and the effects of exercise on the cardiovascular and respiratory systems,

23.0. **explain** the adaptive changes in the respiratory system in extreme conditions and basic information about pathophysiology of respiratory system disorders.

24.0. **describe** biophysical basis of cardiovascular and respiratory systems

25.0. **explain** basic physical properties of biomaterials (such as heart and lungs) 26.0. ***practice*** first aid and how to approach to the patient in emergency needs

27.0. ***describe*** advanced communication skills.

## COMMITTEE IV–CARDIOVASCULAR, RESPIRATORY AND BLOOD SYSTEMS ASSESSMENT AND EVALUATION MATRIX

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| **LEARNING OBJECTIVES** | **DEPARTMENT** |  | **Total Exam MCQs** | |  |
| **CE** | **FE** | **M-UE** | **TOTAL** |
| 1.0 - 3.0 | **Anatomy** | **20** | 4 | 4 |  |
| 4.0 - 6.0 | **Histology and Embryology** | **20** | 4 | 4 |  |
| 7.0 -.23.0 | **Physiology** | **34** | 8 | 8 |  |
| 24.0 - 25.0 | **Biophysics** | **5** | 1 | 1 |  |
| 26.0 – 27.0 | **Good Medical Practice** | \* | \* | **\*** |  |
|  | **TOTAL** | **79** | 17 | 17 |  |

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| **LEARNING OBJECTIVES** | **DISCIPLINES** | **LAB POINTS** |
| **3.0** | **ANATOMY** | **5** |
| **4.0** | **HISTOLOGY** | **3** |

### Committee Score (CS)= 90% CE (MCQ and SbMCQ) + 10% (LPE)

**\*:**The Assessment procedure of GMP is given in part of the Assessment Procedure of the final exam.

**Abbreviations:**

**MCQ:** Multiple Choice

Question

**LPE:** Practical

LectureEvaluation

**CE:** CommitteeExam

**CS:** CommitteeScore

**FE:** Final Exam

**M-UE:** Make-up Exam

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| **09:00 -**  **09:50** | **Biophysics** | **Biophysics** | **Physiology** | **Histology and Embryology** |  |
| **Hemodynamic** | **Biomechanics of circulatory system** | **Functions and**  **Physical Properties of Blood** | **Blood and Hematopoesis** |
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| **10:00 -**  **10:50** | **Biophysics** | **Biophysics** | **Anatomy** | **Histology and Embryology** | **Histology and Embryology** |
| **Hemodynamic** | **Biomechanics of circulatory system** | **The Heart and**  **Pericardium** | **Blood and Hematopoesis** | **Histology of the**  **Heart and**  **Vasculature** |
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| **11:00 -**  **11:50** |  | **Biophysics** | **Anatomy** | **Physiology** | **Histology and Embryology** |
| **Electrical**  **Stimulation of**  **Circulatory and**  **Respiratory Systems** | **The Heart and**  **Pericardium** | **Chemical Properties of Blood** | **Histology of the**  **Heart and**  **Vasculature** |
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| **13:00 - 13:50** | **Anatomy** | **Anatomy** | **Histology and Embryology** | **LAB** | **Anatomy** |
| **The Thoracic Wall** | **The Mediastinum, the Great Vessels and the Posterior**  **Mediastinum** | **Blood and Hematopoesis** | **ANATOMY** | **The Nose and the**  **Associated**  **Structures** |
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| **14:00 -**  **14:50** | **Anatomy** | **Anatomy** | **Histology and Embryology** | ***Thoracic Wall*** | **Anatomy** |
| **The Thoracic Wall** | **The Mediastinum, the Great Vessels and the Posterior**  **Mediastinum** | **Blood and Hematopoesis** | **Group 1** | **The Nose and the**  **Associated**  **Structures** |
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| **15:00 -**  **15:50** |  |  |  | **LAB** |  |
| **ANATOMY** |  |
| **16:00 -**  **16:50** |  |  |  | ***Thoracic Wall*** |  |
|  |  | **Group 2** |

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| **09:00**  **-**  **09:50** | **Physiology** | **Histology and Embryology** |  | **Histology and Embryology** | **Histology and Embryology** |
| **Hematopoiesis** | **Development of**  **Heart and**  **Vasculature** | **Development of Heart and Vasculature** | **Histology of the**  **Respiratory System** |
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| **10:00**  **-**  **10:50** | **Histology and Embryology** | **Anatomy** | **Physiology** | **Histology and Embryology** |
| **Histology of the**  **Heart and**  **Vasculature** | **The Larynx** | **Functions of Platelets, Coagulation,Hemostasis** | **Histology of the**  **Respiratory System** |
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| **11:00**  **-**  **11:50** | **Histology and Embryology** | **Anatomy** | **Physiology** | **Anatomy** |
| **Histology of the**  **Heart and**  **Vasculature** | **The Larynx** | **Functions of Platelets, Coagulation,Hemostasis** | **The Trachea and the Lungs** |
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| **13:00**  **-**  **13:50** | **Anatomy** | **Physiology** | **LAB** |  |
| **The Pharynx** | **Functions of Erythrocytes** | **ANATOMY Group 2** |  |
|  |  | **The Heart and**  **Pericardium, The**  **Mediastinum, Great**  **Vessels and the**  **Posterior Mediastinum** |  |
| **14:00**  **-**  **14:50** | **Anatomy** | **Physiology** |  |
| **The Pharynx** | **Functions of Leukocytes** |  |
|  |  |  |
| **15:00**  **-**  **15:50** |  |  | **LAB** |  |
|  |  | **ANATOMY Group 1** |  |
|  |  | **The Heart and**  **Pericardium, The**  **Mediastinum, Great**  **Vessels and the**  **Posterior Mediastinum** |  |
| **16:00**  **-**  **16:50** |  |  |  |
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| **09:0**  **0 -**  **09:5**  **0** | **Histology and Embryology** |  |  | **LAB** | **Anatomy** |
| **Development of the Respiratory**  **System** | **HISTOLOGY & EMBRYOLOGY**  **Histology of the Respiratory System Group 1**  **ANATOMY**  **The Pharynx ,The Nose and the**  **Associated Structures Group 2**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **\_\_\_ HISTOLOGY & EMBRYOLOGY Hıstology of the Respiratory System**  **Group 2** | **The Lymphoid System** |
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| **10:0**  **0 -**  **10:5 0** | **Histology and Embryology** | **Histology and Embryology** |
| **Development of the Respiratory**  **System** | **Introduction to**  **Lymphoreticular System** |
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| **11:0**  **0 -**  **11:5**  **0** | **Anatomy** | **ANATOMY**  **The Pharynx , The Nose and**  **the Associated Structures Group 1** | **Histology and Embryology** |
| **The Trachea and the Lungs** | **Introduction to**  **Lymphoreticular System** |
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| **13:0**  **0 -**  **13:5**  **0** | **Physiology** | **Physiology** | **Physiology** |
| **Physiological**  **Properties of the**  **Cardiac Muscle** | **Blood Groups and Transfusion** | **ECG**  **(Electrocardiogram**  **)** |
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| **14:0**  **0 -**  **14:5 0** | **Physiology** | **Anatomy** | **Physiology** |
| **The Rhythmic**  **Stimulation of Heart** | **The Diaphragm** | **ECG**  **(Electrocardiogram**  **)** |
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| **15:0**  **0 -**  **15:5 0** |  |  |  |
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| **09:00 -**  **09:50** | **Histology and Embryology** | |  | **Good Medical Practice** | |  | **Physiology** | **Physiology** |  |
| **Histology of the Lymphoid organ** | |  |  | |  | **Cardiac Output,**  **Cardiac Work and**  **Cardiac Metabolism** | **Fetal, Venous and Lymphatic Circulation** |
|  | |  |  |  |
| **10:00 -**  **10:50** | **Physiology** | |  |  | |  | **Anatomy** | **Physiology** | **Histology and Embryology** |
|  | **Medical**  **Education and informatics** |
| **Principles of**  **Hemodynamics** | |  | **The Lateral and**  **Anterior Aspects of the Neck** | **General**  **Considerations of Respiration** | **Histology of the Spleen and Thymus** |
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| **11:00 -**  **11:50** | **Physiology** | |  |  | |  | **Anatomy** | **Anatomy** | **Histology and Embryology** |
| **Principles of**  **Hemodynamics** | |  | **The Lateral and**  **Anterior Aspects of the Neck** | **The Root of the Neck** | **Histology of the Spleen and Thymus** |
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| **13:00 - 13:50** | **Good Medical Practice** | |  | **Physiology** | |  | **Physiology** | **LAB** | **Physiology** |
|  | |  | **Functions of the**  **Cardiac Valves,**  **Heart Sounds,**  **Phonocardiogram** | |  | **Short-Term**  **Regulation of Blood Pressure** | **HISTOLOGY &**  **EMBRYOLOGY**  **Cardiovascular**  **System Group 2** | **Ventilation and**  **Mechanics of**  **Respiration** |
|  | |  |  |  |
| **14:00 -**  **14:50** |  | |  | **Physiology** | |  | **Physiology** | **ANATOMY** | **Physiology** |
|  | **Medical**  **Education and informatics** | **The Cardiac Cycle and Intracardiac**  **pressure Changes** | |  | **Blood Volume and**  **Long-Term**  **Regulation of Blood Pressure** | **Larynx,The Trachea and The Lungs Group 1** | **Ventilation and**  **Mechanics of**  **Respiration** |
|  |  |  |  | |  |  |  |
| **15:00 -**  **15:50** |  | |  |  | |  |  | **LAB** |  |
|  | |  | **HISTOLOGY &**  **EMBRYOLOGY**  **Cardiovascular**  **System Group 1** |
| **16:00 -**  **16:50** |  | |  |  | |  |  | **ANATOMY** |  |
|  | |  | **Larynx, Trachea and**  **The Lungs Group 2** |
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| **09:00 -**  **09:50** | **Anatomy** | **Physiology** |  |  | **Histology and Embryology** |
| **Sectional Anatomy** | **Pulnonary Alveolar**  **Capillary Gas**  **Exchange (Diffusion)** |  |  | **MAKE UP** |
|  |  |
| **10:00 -**  **10:50** | **Physiology** | **Histology and Embryology** | **Physiology** |  |  |
| **Transport of Gases in the Blood and the**  **Role of the Lungs in**  **Acid -Base Balance** | **Histology of the**  **Lymph Node and MALT** | **Exercise Physiology** |  |
|  |  |  |
| **11:00 -**  **11:50** | **Physiology** | **Histology and Embryology** | **Physiology** |  |  |
| **Transport of Gases in the Blood and the**  **Role of the Lungs in**  **Acid -Base Balance** | **Histology of the Respiratory System** | **Exercise Physiology** |  |
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| **13:00 -**  **13:50** |  | **Physiology** | **LAB** |  |  |
|  | **Neural Regulation of Respiration** | **HISTOLOGY &**  **EMBRYOLOGY**  **Lymphoreticular**  **System Group 1** |  |
|  |  |
| **14:00 -**  **14:50** |  |  | **ANATOMY GROUP 2**  **The Anterior and**  **Lateral Aspect of the**  **Neck , The Root of the Neck.** |  |  |
| **Chemical Regulation of Respiration** |  |  |
|  |  |  |
| **15:00 -**  **15:50** |  |  | **LAB** |  |  |
|  |  | **HISTOLOGY&**  **EMBRYOLOGY**  **Lymphoreticular**  **System Group 2** |  |  |
| **16:00 -**  **16:50** |  |  | **ANATOMY GROUP 1 The Anterior and**  **Lateral Aspect of the**  **Neck , The Root of the Neck.** |  |  |
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| **09:00 -**  **09:50** |  |  |  |  | **Histology and**  **Embryology Pratical**  **Examination** |
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| **10:00 -**  **10:50** |  |  |  |  | **Anatomy Pratical Examination** |
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| **11:00 -**  **11:50** |  |  |  |  | **Circulatory &**  **Respiratory** |
|  |  |  |  |
|  |  |  |  |  | **and** |
| **13:00 -**  **13:50** |  |  |  |  | **Blood Systems**  **Theoretical**  **Examination** |
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| **14:00 -**  **14:50** |  |  |  |  |  |
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| **15:00 -**  **15:50** |  |  |  |  |  |
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| **16:00 -**  **16:50** |  |  |  |  |  |
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## COMMITTEE V –GASTROINTESTINAL SYSTEM

**AND METABOLISM**

**DISTRIBUTION of LECTURE HOURS**

**COMMITTEE DURATION:**

**4 WEEKS**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **MED 205** | **Gastrointestinal System and Metabolism** | **THEORETICAL**  **(hours)** | **PRACTICAL**  **(hours)** | **TOTAL** |
|  | Anatomy | 16 | 2 groups x 8 | 24 |
| Histology & Embryology | 18 | 2 groups x 6 | 24 |
| Physiology | 11 |  | 11 |
| Medical Biochemistry | 19 | - | 19 |
| Biostatistics | 14 |  | 14 |
| Good Medical Practice | 4 |  | 4 |
| **TOTAL** | ***82*** | ***14*** | ***96*** |

**COMMITTEE V – GASTROINTESTINAL SYSTEM AND METHABOLISM**

## AIMS and LEARNING OBJECTIVES

**AIMS**

1. **To convey** information about biological, anatomical, embryological, histological, physiological and biochemical properties of gastrointestinal system,
2. **To convey** knowledge on metabolic events in human organism and their clinical reflections.
3. **To convey** information about good laboratory and clinical practices in research projects. 4) **To convey** basic knowledge about biostatistics.

**LEARNING OBJECTIVES**

At the end of this committee, student should be able to:

* 1. **describe** the anatomy of oral cavity, temporomandibular joint, chewing muscles, pharynx, oesophagus, stomach, small intestine, large intestine, liver, gall bladder and tracts, pancreas, spleen and peritoneum
  2. **associate** with adjacent tissue and organs,
  3. **explain** their functional and clinical reflections.
  4. **describe** the anatomy of abdominal wall, inguinal canal and portal system
  5. **associate** with adjacent tissue and organs,
  6. **explain** their functional and clinical reflections.
  7. For digestive system and related glands;
  8. **classify** embryological origins, developmental stages and histological properties, 3.2. **associate** the relation between birth abnormalities and developmental processes.
  9. For lipid, protein and carbohydrate metabolisms;
  10. **describe** physiological mechanisms,
  11. **explain** the relation to each other,
  12. In digestive system;
  13. **list** exocrine glands secreting acid-neutralizing fluids,
  14. **explain** their secretion mechanisms,
  15. **explain** hormonal and neural factors.

6.0. **classify** the roles of enzymes and hormones in digestion and absorption of lipids and proteins.

7.0. **explain** types and roles of lipoproteins.

8.0. **explain** metabolisms of fatty acids, cholesterol, ketone bodies.

9.0. **explain** amino acid metabolisms, synthesis of urea and control mechanism of the synthesis.

10.0. **construct** statistical hypothesis

11.0. **understand** the concept of statistical significance

12.0. **classify** Type I and Type II statistical errors 13.0. **explain** the significance tests in biostatistics.

14.0. **describe** parametric and non-parametric hypothesis tests

15.0. **choose** significance tests according to the properties of biostatistical data.

16.0. **interpret** statistical analysis outcomes

17.0. **explain** the hygiene rules for giving better health care

## COMMITTEE V–GASTROINTESTINAL SYSTEM AND METHABOLISM ASSESSMENT AND EVALUATION MATRIX

|  |  |  |  |  |  |
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| **LEARNING**  **OBJECTIVES** | **DEPARTMENT** |  | **Total Exam MCQs** | |  |
| **CE** | **FE** | **M-UE** | **TOTAL** |
| 1.0 - 2.0 | **Anatomy** | **18** | 4 | 4 | **26** |
| 3.0 | **Histology and Embryology** | **17** | 4 | 4 | **25** |
| 4.0 -.5.0 | **Physiology** | **11** | 3 | 3 | **17** |
| 6.0 - 9.0 | **Medical Biochemistry** | **19** | 4 | 4 | **27** |
| 10.0 – 16.0 | **Biostatistics** | **14** | 2 | 2 | **18** |
| 17.0 | **Good Medical Practice** | \* | \* | **\*** |  |
|  | **TOTAL** | **79** | **17** | **17** | **113** |

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| **LEARNING OBJECTIVES** | **DISCIPLINES** | **LAB POINTS** |
| **3.0** | **ANATOMY** | **5** |
| **4.0** | **HISTOLOGY** | **4** |

### Committee Score (CS)= 90% CE (MCQ and SbMCQ) + 10% (LPE)

**\*:**The Assessment procedure of GMP is given in part of the Assessment Procedure of the final exam.

**Abbreviations: MCQ:**

Multiple

Choice

Question

**LPE:**

Practical LectureEval uation

**CE:** CommitteeE xam

**CS:** CommitteeScore

**FE:** Final Exam

**M-UE:** Make-up Exam

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|  | **Anatomy** | **Anatomy** | **Histology and Embryology** | **Histology and Embryology** | **Anatomy** |
| **09.00**  **09.50** | **Oral Cavity** | **The Anterior**  **Abdomenal Wall and Inguinal Canal** | **Histology of Oral**  **Cavity, Teeth,**  **Salivary Glands,**  **Pharyngeal apparatus**  **, Tongue and**  **Oesaphagus** | **Histology of Oral**  **Cavity, Teeth, Salivary Glands, Pharyngeal apparatus , Tongue and Oesaphagus** | **The Duodenum** |
|  |  |  |  |  |  |
|  | **Anatomy** | **Anatomy** | **Anatomy** | **Anatomy** | **Anatomy** |
| **10.00**  **10.50** | **Oral Cavity** | **The Anterior**  **Abdomenal Wall and Inguinal Canal** | **The Peritoneum, the**  **Lesser and Greater**  **Omenta and the**  **Omental Bursa** | **Oesophagus and the Stomach** | **The Jejunum and Ileum** |
|  |  |  |  |  |  |
|  | **Histology and Embryology** | **Physiology** | **Anatomy** | **Anatomy** | **Physiology** |
| **11.00**  **11.50** | **Development of the Digestive**  **System** | **The Enteric**  **Nervus Sistem and**  **Gastrointestinal Innervation** | **The Peritoneum, the**  **Lesser and Greater**  **Omenta and the**  **Omental Bursa** | **Oesophagus and the Stomach** | **Gastric Functions** |
|  |  |  |  |  |  |
|  | **Histology and Embryology** | **Biochemistry** | **Biochemistry** | **Physiology** | **Biostatistics** |
| **13.00**  **13.50** | **Development of the Digestive**  **System** | **Digestion and**  **Absorption of Nutrients** | **Carbohydrate**  **Metabolism and Its**  **Regulation** | **Oral Digestion and Deglutition** | **Introduction to Hypothesis Tests** |
|  |  |  |  |  |  |
|  | **Histology and Embryology** | **Biochemistry** | **Biochemistry** | **Physiology** | **Biostatistics** |
| **14.00**  **14.50** | **Development of the Digestive**  **System** | **Digestion and**  **Absorption of Nutrients** | **Carbohydrate**  **Metabolism and Its**  **Regulation** | **Oral Digestion and Deglutition** | **Introduction to Hypothesis Tests** |
|  |  |  |  |  |  |
|  |  |  |  | **LAB** |  |
| **15.00** |  |  |  | **ANATOMY of the** |  |
| **15.50** |  |  |  | **ORAL CAVITY Group 1** |  |
|  |  |  |  | **ANATOMY of the ORAL CAVITY** |  |
| **16.00**  **16.50** |  |  |  | **Group 2** |  |

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|  | **Histology and Embryology** | **Biostatistics** | **Anatomy** | **Histology and Embryology** | **Biochemistry** |
| **09.00** | **Histology of Oral** |  |  |  |  |
| **09.50** | **Cavity, Teeth,**  **Salivary Glands,**  **Pharyngeal apparatus , Tongue and Oesophagus** | **Parametric and**  **Nonparametric Tests** | **The Liver and Biliary Ducts** | **Histology of the Intestine** | **Lipid and**  **Lipoprotein**  **Metabolism** |
|  |  |  |  |  |
|  | **Histology and Embryology** | **Biostatistics** | **Anatomy** | **Histology and Embryology** | **Biochemistry** |
| **10.00** | **Histology of Oral** |  |  |  |  |
| **10.50** | **Cavity, Teeth,**  **Salivary Glands,**  **Pharyngeal apparatus , Tongue and Oesophagus** | **Parametric and**  **Nonparametric Tests** | **The Liver and Biliary Ducts** | **Histology of the Intestine** | **Lipid and**  **Lipoprotein**  **Metabolism** |
|  |  |  |  |  |
|  | **Physiology** | **Anatomy** | **Physiology** | **Anatomy** | **Physiology** |
| **11.00**  **11.50** | **Movements of the Alimentery tract** | **The Pancreas and the Spleen** | **Gastrointestinal Hormones** | **The Posterior**  **Abdominal Wall and the Great Vesses** | **Function of the**  **Colon and**  **Formation of the Feces** |
|  |  |  |  |  |
|  | **Anatomy** | **Histology and Embryology** | **Biochemistry** | **Biochemistry** | **Biostatistics** |
| **13.00**  **13.50** | **The Large Intestines** | **Histology of the Stomach** | **Amino acid and Protein Metabolism** | **Amino acid and Protein Metabolism** | **One-Sample Hypothesis Tests** |
|  |  |  |  |  |
|  | **Anatomy** | **Histology and Embryology** | **Biochemistry** | **Biochemistry** | **Biostatistics** |
| **14.00** | **The Large Intestines** | **Histology of the Stomach** | **Amino acid and Protein Metabolism** | **Amino acid and Protein Metabolism** | **One-Sample Hypothesis Tests** |
| **14.50** |
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|  |  | **LAB** |  | **LAB** |  |
| **15.00** | **Histology and Embryology** | **Histology and Embryology** |
| **15.50** |  | **Histology of Upper**  **Digestive**  **SystemGroup 1** |  | **Histology of Upper**  **Digestive System**  **Group 2** |  |
| **Anatomy Anterior**  **Abdomenal Wall**  **Group 2** | **Anatomy Anterior**  **Abdomenal Wall Group 1** |
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| **16.00** |
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|  | | **Anatomy** | | **Histology and**  **Embryology** | | **Histology and Embryology** | | **Histology and Embryology** | | **Biochemistry** | |
| **09.00**  **09.50** | | **Vessels and Nerves of the Digestive Tract** | | **Histology of the Liver,**  **Gall Bladder and**  **Pancreas** | | **Histology of the**  **Liver, Gall Bladder and Pancreas** | | **Development of the**  **Liver, Gall Bladder and Pancreas** | | **Mineral Metabolism** | |
|  | |  | |  | |  | |  | |
|  | | **Anatomy** | | **Histology and**  **Embryology** | | **Histology and Embryology** | | **Histology and Embryology** | | **Biochemistry** | |
| **10.00**  **10.50** | | **Vessels and Nerves of the Digestive Tract** | | **Histology of the Liver,**  **Gall Bladder and**  **Pancreas** | | **Developmentof the Liver, Gall**  **Bladder and Pancreas** | | **Developmentof the**  **Liver, Gall Bladder and Pancreas** | | **Metabolism of Calcium and Phosphorous** | |
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|  | | **Physiology** | | **Physiology** | | **Anatomy** | | **Physiology** | | **Anatomy** | |
| **11.00**  **11.50** | | **Exocrine Function of the Pancreas Function of the**  **Liver and the Role of Bile in Digestion** | | **Digestion and**  **Absorption in the**  **Gastrointesti nal Tract** | | **The Portal System** | | **The Regulation of Food İntake and Metabolism** | | **Sectional Anatomy** | |
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|  | | **Biochemistry** | | **Biostatistics** | | **Biochemistry** | | **Biostatistics** | | **Biostatistics** | |
| **13.00**  **13.50** | | **Acid-Base Balance and Physiological**  **Buffer Systems** | | **Two-Sample**  **Hypothesis Tests** | | **Metabolism of**  **Porphyrines and Bile Pigments** | | **Two-Sample Hypothesis Tests** | | **More Than Two-Sample Hypothesis Tests** | |
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|  | | **Biochemistry** | | **Biostatistics** | | **Biochemistry** | | **Biostatistics** | | **Biostatistics** | |
| **14.00** | | **Acid-Base Balance and Physiological**  **Buffer Systems** | | **Two-Sample**  **Hypothesis Tests** | | **Metabolism of**  **Porphyrines and Bile Pigments** | | **Two-Sample Hypothesis Tests** | | **More Than Two-Sample Hypothesis Tests** | |
| **14.50** | |
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|  | | **LAB**  **Anatomy** | |  | |  | | **LAB** | | **LAB** | |
| **15.00** | | **The Stomach, Duodenum and** | | **Histology of Liver,Biliary ducts and spleen** | | **Histology of Liver,Biliary ducts and spleen** | |
| **15.50** | | **The Peritoneum Group 2** | |  | |  | | **Group 1** | | **Group 2** | |
|  | | **The Stomach,**  **Duodenum and**  **The Peritoneum Group 1** | |  | |  | | Anatomy | | Anatomy | |
|  | | **The Small and Large Intestines** | | **The Small and Large Intestines** | |
| **16.00** | | The Liver, Biliary Ducts and Spleen | | The Liver, Biliary Ducts and  Spleen | |
| **16.50** | | Group 2 | | Group 1 | |
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|  | | **LAB** | | **Biochemistry** | | **Biochemistry** | |  | |  | |
| **09.00** | | **Histology and Embryology grup 1** | | **Detoxification Mechanisms** | |  | | **Biostatistics**  **More Than Two-**  **Sample Hypothesis**  **Tests** | |
| **09.50** | | **Histology of lower Digestive System** | | **Nucleotide Metabolism** | |
|  | | Anatomy group 2 | |  | |  | |  | |
|  | | **The Posterior Abdominal Wall and** | |  | |  | |  | | **Histology Make Up** | |
| **10.00** | | the Great Vessels | | **Detoxification Mechanisms** | |  | | **Biostatistics**  **More Than Two-**  **Sample Hypothesis Tests** | |
| **10.50** | | **LAB** | |  | |
|  | | **Histology and Embryology grup 2** | |  | |  | |  | |
|  | | **Histology of lower Digestive System** | |  | |  | |  | |  | |
| **11.00** | | Anatomy grup 1 | |  | |  | |
| **11.50** | | **The Posterior Abdominal Wall and** | |  | |
|  | | the Great Vessels | |  | |  | |
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|  |  |  |  |  | **Histology-Emryology Practical Examination** |
| **09.00** |  |  |  |  |
| **09.50** |  |  |
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|  |  |  |  |  | **Anatomy Practical Examination** |
| **10.00** |  |  |  |  |
| **10.50** |  |  |
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|  |  |  |  |  | **Gastrointestinal**  **System and**  **Metabolism**  **Committee**  **Examination** |
| **11.00** |  |  |  |  |
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| **16.00**  **16.50** |  |  |  |  |
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**COMMITTEE VI – ENDOCRINE & UROGENITAL SYSTEMS**

## DISTRIBUTION of LECTURE HOURS

## COMMITTEE DURATION:4WEEKS

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| --- | --- | --- | --- | --- |
|  | **BASICMEDICALSCIENCES** | **THEORETICAL**  **(hours)** | **PRACTICAL**  **(hours)** | **TOTAL**  **(hours)** |
| **MED 206** | **DISCIPLINE** |  |  |  |
| ANATOMY | 12 | 2 groups x 9 | 21 |
| BIOCHEMISTRY | 16 | 0 | 16 |
| HISTOLOGY & EMBRYOLOGY | 15 | 2 groups x 8 | 23 |
| MEDICAL EDUCATION & INFORMATICS | 0 | 6 | 6 |
| PHYSIOLOGY | 21 | 0 | 21 |
| **TOTAL** | **64** | **23** | **87** |

**COMMITTEE VI – ENDOCRINE & UROGENITAL SYSTEMS AIMS and LEARNING OBJECTIVES**

**AIMS**

1. To provide essential information about the structural and functional features of endocrine and urogenital systems at molecule, cell, tissue and organ levels.
2. To define and explain the anatomical, biochemical, histological, embryological and physiological aspects of endocrine and urogenital systems.
3. To show the structures of endocrine and urogenital systems macroscopically, microscopically and by means of other examination techniques.
4. To provide basic information about the core clinical skills and professional behaviors that underpin medical practice.

**LEARNING OBJECTIVES**

*At the end of this committee, the student should be able to:*

* 1. In the endocrine system for the thyroid gland, the parathyroid gland, the suprarenal glands, and the thymus
  2. Describe their anatomy;
  3. Interpret their anatomical relationship to the surrounding tissues and organs;
  4. Explain their functional and clinical significance.
  5. In the endocrine system
  6. Differentiate between endocrine and exocrine glands;
  7. Describe endocrine, paracrine and neuroendocrine messengers in secretory systems;
  8. List the secretions and actions of the major endocrine glands; 2.4. Explain the regulatory role of the hypothalamic-pituitary axis; 2.5. List the anterior and posterior pituitary hormones.
  9. In the endocrine system for the thyroid gland, the parathyroid gland, the suprarenal glands, the epiphysis, and the pituitary gland
  10. Describe their histology;
  11. Classify their embryological origins;
  12. Explain their developmental stages;
  13. Tell their congenital anomalies that occur at developmental stages.
  14. For hormones
  15. Classify them based on their mechanisms of action;
  16. Analyze events that occur when a hormone binds to its receptor;
  17. Describe the structure and function of thyroid, pancreatic, gastrointestinal, hypothalamic and pituitary hormones;
  18. Describe the structure and function of steroid hormones;
  19. Describe the interplay between various hormones;
  20. Discuss the hormonal control of metabolism;
  21. Define obesity as a multi-metabolic and hormonal disease state.
  22. In the urinary system for the kidneys, the ureters, the urinary bladder, and the urethra
  23. Describe their anatomy;
  24. Interpret their anatomical relationship to the surrounding tissues and organs;
  25. Explain their functional and clinical significance;
  26. Describe their histology;
  27. Classify their embryological origins;
  28. Explain their developmental stages.
  29. For the pelvis and the perineum
  30. Describe their anatomy in males and females;
  31. Interpret their anatomical relationship to the surrounding tissues and organs;
  32. Explain their functional and clinical significance.
  33. In the urinary system
  34. List the fluid compartments in the body;
  35. Describe the chemical composition of the main body fluid compartments;
  36. Explain renal function and the structure of nephrons;
  37. Explain the mechanisms for glomerular filtration and the tubular processing of the glomerular filtrate;
  38. Describe the physical and chemical properties of urine;
  39. Explain water-electrolyte and acid-base balances and their renal regulation.
  40. For male and female genital organs
  41. Describe their anatomy;
  42. Interpret their anatomical relationship to the surrounding tissues and organs;
  43. Explain their functional and clinical significance;
  44. Describe their histology;
  45. Classify their embryological origins;
  46. Explain their developmental stages.
  47. In the genital system
  48. List male and female reproductive hormones;
  49. Describe the processes of growth, development, and aging;
  50. List the changes that occur during pregnancy.

10.0. Describe the core clinical skills and professional behaviors that underpin medical practice.

## COMMITTEE VI – ENDOCRINE & UROGENITAL SYSTEMS

**ASSESSMENT MATRIX**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LEARNING**  **OBJECTIVES** | **DISCIPLINE** |  | **Distribution of MCQs** | |  |
| **CE** | **FE** | **ME** | **TOTAL** |
| 1.0, 5.1-5.3,  6.0, 8.1-8.3 | ANATOMY | 12 | 3 | 3 | 18 |
| 4.0 | BIOCHEMISTRY | 16 | 3 | 3 | 22 |
| 2.1-2.2, 3.0,  5.4-5.6, 8.4-8.6 | HISTOLOGY & EMBRYOLOGY | 15 | 3 | 3 | 21 |
| 10.0 | MEDICAL EDUCATION & INFORMATICS | 0 | 0 | 0 | 0 |
| 2.3-2.5, 7.0, 9.0 | PHYSIOLOGY | 21 | 5 | 5 | 31 |
|  | **TOTAL** | **64** | **14** | **14** | **92** |

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| --- | --- | --- |
| **LEARNING OBJECTIVES** | **DISCIPLINE** | **POINTS of ASSESSMENT METHODS** |
| **LPE** |
| 1.0, 5.1-5.3, 6.0, 8.1-8.3 | ANATOMY | 60 |
| 4.0 | BIOCHEMISTRY | 0 |
| 2.1-2.2, 3.0, 5.4-5.6, 8.4-8.6 | HISTOLOGY & EMBRYOLOGY | 40 |
| 10.0 | MEDICAL  EDUCATION  & INFORMATICS | \* |
| 2.3-2.5, 7.0, 9.0 | PHYSIOLOGY | 0 |
|  | **TOTAL** | **100** |

TotalnumberofMCQsare64,equalto100pts.Eachquestionhas100/64 pts. Total value of LPE is equal to 100pts.

\*: The standard procedurefor assessingMedial Education & Informatics is providedin the section for assessing the Final Exam.

### Committee Score (CS) = 90% CE (MCQs) + 10% (LPE)

**Abbreviations:**

**MCQs:** Multiple ChoiceQuestions

**LPE:** Laboratory Practical Exam

**CE:** CommitteeExam

**CS:** CommitteeScore **FE:** Final Exam

**ME:** Make-up Exam **Pts.:** Points

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| **09.00**  **09.50** | **Anatomy** | **Histology and Embryology** | **Anatomy** | **Histology and Embryology** | **Biochemistry** |
| **Thyroid and**  **Parathyroid Glands** | **Histology and**  **Development of**  **Thyroid and**  **Parathyroid Glands** | **The Kidneys and the Ureters** | **Histology of the Urinary System** | **Pancreatic and**  **Gastrointestinal Hormones** |
|  |  |  |  |  |
| **10.00**  **10.50** | **Anatomy** | **Histology and Embryology** | **Anatomy** | **Histology and Embryology** | **Anatomy** |
| **The Suprarenal Glands and Thymus** | **Histology and**  **Development of**  **Suprarenal Glands** | **The Kidneys and the Ureters** | **Histology of the Urinary System** | **Pelvis and Perineum** |
|  |  |  |  |  |
| **11.00**  **11.50** | **Histology and Embryology** | **Histology and Embryology** | **Anatomy** | **Physiology** | **Anatomy** |
| **Introduction to Endocrine System** | **Histology and**  **Development of the**  **Epiphysis, the**  **Pituitary Gland** | **The Urinary Bladder and the Urethra** | **Glomerular Filtration** | **Pelvis and Perineum** |
|  |  |  |  |  |
| **13.00**  **13.50** |  | **Biochemistry** | **Physiology** | **LAB**    **Histology &Embryology:**  **Endocrine System *Group I***    **Anatomy:**  **Thyroid, Parathyroid**  **Glands, Suprarenal**  **Glands and Thymus *Group II*** | **Physiology** |
| **Thyroid Hormones** | **Body Fluid Compartment** | **Tubular**  **Processing of the**  **GlomerularFiltrate** |
|  |  |  |
| **14.00**  **14.50** |  | **Biochemistry** | **Physiology** | **Physiology** |
| **Thyroid Hormones** | **Function of the**  **Kidney and Blood Flow** | **Water and Electrolyte Balance** |
|  |  |  |
| **15.00**  **15.50** |  |  |  | **LAB**    **Histology &Embryology:**  **EndocrineSystem *Group II***    **Anatomy:**  **Thyroid, Parathyroid**  **Glands, Suprarenal**  **Glands and Thymus *Group I*** |  |
| **16.00**  **16.50** |  |  |  |  |

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| **09.00**  **09.50** | **Biochemistry** | **Histology and Embryology** | **Medical Education & Informatics** | **Medical Education & Informatics** |  |
| **Pancreatic and**  **Gastrointestinal Hormones** | **Development of the UrinarySystem** |
| **Clinical &**  **Professional**  **Development**      **Yasemin Özden ERDEMİR** | **Clinical &**  **Professional**  **Development**      **Yasemin Özden ERDEMİR** |
|  |  |
| **10.00**  **10.50** | **Biochemistry** | **Anatomy** |  |
| **Pancreatic and**  **Gastrointestinal Hormones** | **Female Genital Organs** |
|  |  |
| **11.00**  **11.50** | **Histology and Embryology** | **Anatomy** |  |
| **Development of the UrinarySystem** | **Female Genital Organs** |
|  |  |
| **13.00**  **13.50** | **Anatomy** | **LAB**    **Histology &**  **Embryology:**  **Urinary System *Group II***    **Anatomy:**  **The Kidneys, Ureters,**  **Bladder and Urethra *Group I*** | **Histology and Embryology** |  |  |
| **Male Genital Organs** | **Histology of the Male**  **Reproductive System** |
|  |  |
| **14.00**  **14.50** | **Anatomy** | **Histology and Embryology** |  |  |
| **Male Genital Organs** | **Histology of the Male**  **Reproductive System** |
|  |  |
| **15.00** |  |  |  |  |  |
| **LAB** |
| **15.50** |  | **Histology &Embryology:**  **Urinary System *Group I***    **Anatomy:**  **The Kidneys, Ureters,**  **Bladder and Urethra *Group II*** |  |  |  |
| **16.00**  **16.50** |  |  |  |  |

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| **09.00**  **09.50** | **Biochemistry** | **Biochemistry** | **Histology and Embryology** | **Biochemistry** |  |
| **Hypothalamic and Pituitary**  **Hormones** | **Hypothalamic and Pituitary**  **Hormones** | **Development of the Male Genital System** | **Hormonal Control of Metabolism and Obesity** |
|  |  |  |  |
| **10.00**  **10.50** | **Biochemistry** | **Histology and Embryology** | **Biochemistry** | **Biochemistry** |  |
| **Hypothalamic and Pituitary**  **Hormones** | **Development of the Genital**  **System** | **Growth Factors** | **Hormonal Control of Metabolism and Obesity** |
|  |  |  |  |
| **11.00**  **11.50** | **Biochemistry** | **Histology and Embryology** | **Biochemistry** | **Biochemistry** | **Physiology** |
| **Biosynthesis and Activities of Eicosanoids** | **Development of the Genital**  **System** | **Catecholamines** | **Biochemistry and**  **Action of Melatonin and Erythropoietin** | **Micturition** |
|  |  |  |  |  |
| **13.00**  **13.50** | **Histology and Embryology** | **LAB**    **Anatomy:**  **Pelvis and**  **Perineum *Group I***    **Anatomy:**  **Pelvis and**  **Perineum *Group II*** |  | **LAB**    **Histology**  **&Embryology:**  **Histology of female**  **Reproductive**  **Organs**  **Group I**    **Anatomy:**  **Female Genital**  **Organs**  **Group II** | **Physiology** |
| **Histology of the**  **Female**  **Reproductive System** | **Physical and Chemical Properties of**  **Urine** |
|  |  |
| **14.00**  **14.50** | **Histology and Embryology** |  | **Physiology** |
| **Histology of the**  **Female**  **Reproductive System** | **Renal Regulation of Acid-Base Balance** |
|  |  |
|  |  |  |  | **LAB** |  |
| **15.00**  **15.50** |  |  |  | **Histology&**  **Embryology:**  **Histology of female**  **Reproductive**  **Organs**  ***Group II***    **Anatomy:**  **Female Genital**  **Organs**  ***Group I*** |  |
| **16.00**  **16.50** |  |  |  |  |

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| **09.00**  **09.50** | **Biochemistry** |  | | **Physiology** | | **Physiology** | **Physiology** | |
| **Steroid Hormones** | **Introduction to Neuroendocrinology** | | **Physiology of**  **Growth,**  **Development and Aging** | **Pituitary-**  **Hypothalamic**  **Functional**  **Relationship** | |
|  |  | |  |  | |
| **10.00**  **10.50** | **Biochemistry** | **LAB**    **Histology&Embryology:**  **Histology of Male**  **Reproductive Organs *Group II***    **Anatomy:**  **Male Genital Organs**  ***Group I*** | | **Physiology** | | **Physiology** | **Physiology** | |
| **Steroid Hormones** | **Physiology of the**  **Thyroid and**  **Parathyroid Hormones** | | **Physiology of**  **Growth,**  **Development and Aging** | **Physiology of**  **Anterior Pituitary Hormones** | |
|  |  | |  |  | |
| **11.00**  **11.50** | **Anatomy** | **Physiology** | | **Physiology** | **Physiology** | |
| **Sectional Anatomy** | **Endocrine Regulation of**  **Calcium and Phosphate Metabolism** | | **Physiology of Pregnancy** | **Physiology of**  **Posterior Pituitary**  **Hormones** | |
|  |  | |  |  | |
| **13.00**  **13.50** |  | **LAB**    **Histology**  **&Embryology:**  **Histology of Male**  **Reproductive Organs**  ***Group I***    **Anatomy:**  **Male Genital Organs**  ***Group II*** | | **Physiology** | | **Physiology** | **Histology &**  **Embryology**      **MAKE-UP** | |
| **Physiology of the**  **Endocrine Functions of Pancreas** | | **Physiology of Female**  **Reproductive Hormones** |
|  | |  |
| **14.00**  **14.50** |  | **Physiology** | | **Physiology** |
| **Physiology of the**  **Endocrine Functions of Pancreas** | | **Physiology of Male**  **Reproductive Hormones** |
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| **15.00**  **15.50** |  |  | |  | |  |
| **16.00**  **16.50** |  |  | |  | |  |  | |
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| **09.00** |  | |  |  |  | | | **Histology and Embryology** |
| **PRACTICAL** |
| **09.50** |  | |  |  |  | | | **EXAMINATION** |
| **10.00** |  | |  |  |  | | | **Anatomy** |
| **PRACTICAL** |
| **10.50** |  | |  |  |  | | | **EXAMINATION** |
| **11.00**  **11.50** |  | |  |  |  | | | **ENDOCRINE &**  **UROGENITAL SYSTEMS**  **COMMITTEE EXAM** |
| **13.00**  **13.50** |  | |  |  |  | | |
| **14.00**  **14.50** |  | |  |  |  | | |
| **15.00**  **15.50** |  | |  |  |  | | |  |
| **16.00**  **16.50** |  | |  |  |  | | |  |

**COMMITTEE VII – BIOLOGICAL BASIS of DISEASES**

## DISTRIBUTION of LECTURE HOURS

## COMMITTEE DURATION:4WEEKS

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| --- | --- | --- | --- | --- |
|  | **BASICMEDICALSCIENCES** | **THEORETICAL**  **(hours)** | **PRACTICAL**  **(hours)** | **TOTAL**  **(hours)** |
| **MED 207** | **DISCIPLINE** |  |  |  |
| BIOCHEMISTRY | 11 | 0 | 16 |
| BIOPHYSICS | 3 | 0 | 3 |
| MEDICAL EDUCATION & INFORMATICS | 0 | 6 | 6 |
| MEDICAL PATHOLOGY | 17 | 2 | 19 |
| MICROBIOLOGY | 25 | 0 | 25 |
| PHARMACOLOGY | 10 | 0 | 10 |
| **TOTAL** | **66** | **8** | **74** |

**COMMITTEE VII–BIOLOGICAL BASIS of DISEASES**

**AIMS and LEARNING OBJECTIVES**

**AIMS**

1. To provide essential information about the basic biology of disease in the context of biochemistry, biophysics, pathology, immunology and microbiology.
2. To provide introductory information concerning general principles of pharmacology.
3. To provide introductory laboratory experience in general pathology.
4. To provide basic information about the core clinical skills and professional behaviors that underpin medical practice.

**LEARNING OBJECTIVES**

*At the end of this committee, the student should be able to:*

* 1. In the context of the basic biology of disease
  2. List several disturbances leading to cell injury and explain their mechanisms;
  3. Recognize inflammation and distinguish between acute and chronic inflammation; 11.3. Describe the attributes of tissue regeneration, tissue repair, and wound healing;

11.4. Describe the attributes of apoptosis and necrosis.

* 1. For metabolic disorders
  2. Define metabolic disorders as inborn errors of metabolism (IEM), encompassing deficiencies in enzymes involved in the metabolism of carbohydrates, amino acids derived from proteins, and fatty acids liberated from lipids;
  3. Define co-enzyme functions of vitamins in the metabolism of carbohydrates and amino acids;
  4. List the commonly encountered IEM;
  5. List vitamin deficiency disorders;
  6. Describe the benefits associated with newborn screening;
  7. Describe the basic principles of the laboratory investigation of IEM;
  8. Outline appropriate tests for the diagnosis of the major groups of IEM.
  9. For immune disorders
  10. Describe innate and acquired immune systems;
  11. Understand some basic immunology and the terminology associated with it;
  12. Describe the components and activities of the HLA and ABO blood-group systems;
  13. Discuss the significance of the complement system;
  14. List the commonly encountered cytokines and chemokines and describe their functions;
  15. Describe the major tissues and organs of the immune system;
  16. Explain how T- and B-cells develop;
  17. Explain antibody-antigen interaction;
  18. Describe hypersensitivity (types I-IV) reactions and immune responses.
  19. For the disorders that are associated with defects in DNA repair
  20. Review DNA structure and function;
  21. List and describe the endogenous processes and exogenous agents that damage DNA; 14.3. Describe the major pathways that repair single-strand lesions or double-strand breaks; 14.4. Tell the diseases that are related to impaired DNA repair.
  22. For hemodynamic disorders
  23. Describe the flow and distribution of blood and fluids within the body;
  24. Explain edema, hyperemia and congestion, hemorrhage, thrombi, emboli, infarcts, and shock.
  25. For drug treatment of diseases
  26. Understand some basic pharmacology and toxicology;
  27. Explain how drugs are metabolized and excreted;
  28. Describe the toxic effects of drugs on the body;
  29. Understand the basic principles of pharmacokinetics and pharmacodynamics.

17.0. Tell the techniques and procedures that are practiced in the general pathology laboratory.

18.0. Describe the mechanisms for ion channel dysfunction.

19.0. Describe the core clinical skills and professional behaviors that underpin medical practice.

## COMMITTEE VII–BIOLOGICAL BASIS of DISEASES

**ASSESSMENT MATRIX**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **LEARNING**  **OBJECTIVES** | **DISCIPLINE** |  | **Distribution of MCQs** | |  |
| **CE** | **FE** | **ME** | **TOTAL** |
| 2.0, 4.0 | BIOCHEMISTRY | 11 | 2 | 2 | 15 |
| 8.0 | BIOPHYSICS | 3 | 1 | 1 | 5 |
| 9.0 | MEDICAL EDUCATION & INFORMATICS | 0 | 0 | 0 | 0 |
| 1.0, 5.0, 7.0 | MEDICAL PATHOLOGY | 17 | 4 | 4 | 25 |
| 3.0 | MICROBIOLOGY | 25 | 5 | 5 | 35 |
| 6.0 | PHARMACOLOGY | 10 | 2 | 2 | 14 |
|  | **TOTAL** | **66** | **14** | **14** | **94** |

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| **LEARNING OBJECTIVES** | **DISCIPLINE** | **POINTS of ASSESSMENT METHODS** |
| **LPE** |
| 2.0, 4.0 | BIOCHEMISTRY | 0 |
| 8.0 | BIOPHYSICS | 0 |
| 9.0 | MEDICAL  EDUCATION &  INFORMATICS | \* |
| 1.0, 5.0, 7.0 | MEDICAL  PATHOLOGY | # |
| 3.0 | MICROBIOLOGY | 0 |
| 6.0 | PHARMACOLOGY | 0 |
|  | **TOTAL** | **0** |

TotalnumberofMCQsare66,equalto100pts.Eachquestionhas100/66pts.

\*: The standard procedurefor assessingMedial Education & Informatics is providedin the section for assessing the Final Exam. #: This laboratory session is included for illustrative and introductory purposes. It is not assessed or marked.

### Committee Score (CS) = 100% CE (MCQs)

**Abbreviations:**

**MCQs:** Multiple ChoiceQuestions

**LPE:** Laboratory Practical Exam

**CE:** CommitteeExam

**CS:** CommitteeScore **FE:** Final Exam

**ME:** Make-up Exam

**Pts.:** Points

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| **09.00** |  |  |  |  |  |
| **09.50** |  |  |  |  |  |
|  |  |  |  |  |  |
|  | **Biochemistry** | **Microbiology** | **Biochemistry** | **Microbiology** |  |
| **10.00** | **Disorders of Amino Acid and Protein Metabolism** | **cells,organs and Tissues of the Immune system** | **Disorders of Carbohydrate Metabolism** | **Antigens** |  |
| **10.50** |  |  |
|  |  |  |  |  |  |
|  | **Biochemistry** | **Microbiology** | **Biochemistry** | **Microbiology** |  |
| **11.00** | **Disorders of Amino Acid and Protein Metabolism** | **cells,organs and Tissues of the Immune system** | **Disorders of Carbohydrate Metabolism** | **Antibodies** |  |
| **11.50** |  |
|  |  |  |  |  |  |
|  | **Microbiology** | **Pharmacology** | **Medical Pathology** | **Medical Pathology** |  |
| **13.00** | **Introduction to Immune System** | **Fundamental Concepts in Pharmacology and Toxicology** | **Introduction to Pathology** | **Pathology Laboratory: Techniques and Function** |  |
| **13.50** |  |
|  |  |  |  |  |  |
|  | **Microbiology** | **Pharmacology** |  | **Medical Pathology** |  |
| **14.00** | **Introduction to Immune System** | **Drug distribution** |  | **Pathology Laboratory: Techniques and Function** |  |
| **14.50** |  |  |
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|  |  | **Pharmacology** |  |  |  |
| **09.00** |  | **Factors Modifying Drug Action** |  |  |  |
| **09.50** |  |  |  |  |
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|  | **Medical Pathology** | **Microbiology** | **Medical Pathology** | **Microbiology** | **Medical Pathology** |
| **10.00** | **Hemodynamic Disorders of Fluid and Electrolyte Metabolism and Circulation** | **Cytokines** | **Hemodynamic Disorders of Fluid and Electrolyte Metabolism and Circulation** | **Structure of TCR and MHC molecules** | **Cell Injury: General Mechanism** |
| **10.50** |
|  |  |  |  |  |  |
|  | **Medical Pathology** | **Microbiology** | **Medical Pathology** | **Microbiology** | **Medical Pathology** |
| **11.00** | **Hemodynamic Disorders of Fluid and Electrolyte Metabolism and Circulation** | **Chemokines** | **Hemodynamic Disorders of Fluid and Electrolyte Metabolism and Circulation** | **Structure of TCR and MHC molecules** | **Cell Injury: General Mechanism** |
| **11.50** |
|  |  |  |  |  |  |
|  |  | **Biophysics** | **Pharmacology** | **Pharmacology** | **Biochemistry** |
| **13.00** | **Routes of Drug Administration and Drug Absorption I** | **Ion Channel Disfunctions: Channelopathies** | **Drug Metabolism and Elimination II** | **Toxic Effects of Drugs I** | **Disorders of Vitamin Metabolism** |
| **13.50** |
|  |  |  |  |  |  |
|  | **Pharmacology** | **Biophysics** | **Pharmacology** | **Pharmacology** | **Biochemistry** |
| **14.00** | **Routes of Drug Administration and Drug Absorption II** | **Ion Channel Disfunctions: Channelopathies** | **Drug Metabolism and Elimination II** | **Toxic Effects of Drugs II** | **Disorders of Vitamin Metabolism** |
| **14.50** |
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| **09.00**  **09.50** | **Biophysics** | **Medical Education & Informatics** | **Medical Education & Informatics** | **Medical Pathology** | **Microbiology** |
| **Ion Channel**  **Dysfunctions:**  **Channelopathies** | **Apoptosis and Necrosis** | **Apoptosis** |
| **Clinical &**  **Professional**  **Development** | **Clinical &**  **Professional**  **Development** |
|  |  |  |
| **10.00**  **10.50** | **Pharmacology** | **Microbiology** | **Biochemistry** |
| **Toxic Effects of Drugs I** | **Hypersensitivity (Type I) Reactions** | **DNA Damage and Repair Mechanisms** |
|  |  |  |
| **11.00**  **11.50** | **Pharmacology** | **Microbiology** | **Biochemistry** |
| **Toxic Effects of Drugs II** | **Hypersensitivity**  **(Type II)**  **Reactions** | **DNA Damage and Repair Mechanisms** |
|  |  |  |  |  |
| **13.00**  **13.50** | **Medical Pathology** | **Microbiology** | **Medical Pathology** | **Microbiology** |  |
| **Acute**  **Inflammation:**  **Vascular Reactions and Mediators** | **Chemokines** | **Regeneration,**  **Repair and Wound Healing** | **Immune Response** |
|  |  |  |  |
| **14.00**  **14.50** | **Medical Pathology** | **Microbiology** | **Medical Pathology** | **Microbiology** |  |
| **Chronic Inflammation** | **Antigen Presentation** | **Regeneration,**  **Repair and Wound**  **Healing** | **Immune Response** |
|  |  |  |  |
| **15.00**  **15.50** |  |  |  |  |  |
| **16.00**  **16.50** |  |  |  |  |
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| **09.00**  **09.50** | **Biochemistry** | **Biochemistry** | **Microbiology** | **LAB**    **Medical Pathology** | **Microbiology** |
| **Disorders of Lipid**  **Metabolism** | **Disorders of Lipid Metabolism** | **Hypersensitivity**  **(Type III)**  **Reactions** | **Antigen-Antibody Reactions** |
|  |  |  |  |
| **10.00**  **10.50** | **Microbiology** | **Mikrobiyoloji** | **Microbiology** | **Microbiology** |
| **T-Cell**  **Development** | **Naturel immunity and adhesion molecules** | **Hypersensitivity**  **(Type IV)**  **Reactions** | **Serological Reaction** |
|  |  |  |  |
| **11.00**  **11.50** | **Microbiology** | **Microbiology** | **Pharmacology** |  | **Pharmacology** |
| **B-Cell**  **Development** | **Mucosal Immune System** | **Factors Modifying Drug Action** | **Clinical evaluation of new drugs** |
|  |  |  |  |
| **13.00**  **13.50** | **Pharmacology** | **Pharmacology** | **Biochemistry** |  |  |
| **Fundamental**  **Concepts in**  **Pharmacology and Toxicology** | **Routes of Drug**  **Administration and Drug**  **Absorption II** | **Disorders of Vitamin**  **Metabolism** |
|  |  |  |
| **14.00**  **14.50** | **Pharmacology** | **Pharmacology** | **Biochemistry** |  |  |
| **Routes of Drug**  **Administration and Drug**  **Absorption II** | **Drug distribution** | **Disorders of Vitamin**  **Metabolism** |
|  |  |  |
| **15.00**  **15.50** |  |  |  |  |  |
| **16.00**  **16.50** |  |  |  |  |  |

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| **09.00**  **09.50** |  |  |  |  | **Biological**  **Basis ofDiseases**  **Comittee Exam** |
| **10.00**  **10.50** |  |  |  |  |
| **11.00**  **11.50** |  |  |  |  |
| **13.00**  **13.50** |  |  |  |  |
| **14.00**  **14.50** |  |  |  |  |
| **15.00**  **15.50** |  |  |  |  |  |
| **16.00**  **16.50** |  |  |  |  |

## STUDENT COUNSELLING

Student counselling aims to help students to cope up with their problems to reach their immediate or long-range personal, academic and professional goals.

The counseller will guide the student on issues leading to success, help the student for a better self-actualization and to develop a plan to overcome the difficulties he/she faces in his/her educational and social life at the Faculty.

Student counsellers will be appointed by the Dean and the lists will be announced to the academicians at the beginning of every educational year.

The student should make an appointment with the counseler who will fill the “NEU Student Counselling Form” and keep it for follow-up. This form will contain the contact information of the student and his/her parents, the date of the meeting and the issues addressed. The counseller will guide the student for orientation in the university, faculty and social facilities, regulations and ethical issues as well.

The counsellers are expected to meet the counselees at least twice a year.

The general format of the student counselling form is as following:

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| **Near East University Faculty of Medicine Student Counselling Form** | |
| **Student Name:** | **Student No:** |
| **Phase:** | **Date of Birth (DD/MM/YY):** / / |
| **Term Address:** | **Home/Permanent Address** (if different from term address): |
| **Mobile Phone No:** | |
| **Family Details** (Name, Address, Phone No.)**:** | |
| **Details of person to contact in case of emergency** (Name, Address, Phone No) | |
| **Date of Counselling** |  |
| **Supervisor’s Name** |  |
| **DETAILS** Please detail below the main points of concern with the student’s performance, work habits, behaviour etc.: ......... | |

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