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| **C:\Users\Namariel\Downloads\TıpF (1)\TıpF\TıpF-2.png****MARMARA UNIVERSITY SCHOOL of MEDICINE** |
| CELLULAR METABOLISM AND TRANSPORT YEAR 1 COURSE 2December 2, 2019 – January 16, 2020 |
| **Coordinator of the Course 1.2**Assoc. Prof., Betül KARADEMİR | **Coordinator of the Module 1.2**Prof., Oya ORUN |
| **Year 1 Coordinators** Assoc. Prof., Dilek AKAKIN & Prof., Mustafa AKKİPRİK |
| **Module Coordinator**Prof., Özlem SARIKAYA | **Introduction to Clinical Practice (ICP) Coordinators**Prof, Pemra ÜNALAN |
|  **Coordinator of Multidisciplinary Students’ Lab**.Assoc. Prof., Betül KARADEMİR | **Coordinator of Clinical Skills Lab.**Assoc. Prof., Çiğdem APAYDIN KAYA |
|  **Coordinator of Assessment Unite**Assist. Prof., Cevdet NACAR | **Coordinator of Student Exchange Programs**Assist. Prof., Can ERZİK |
| **Vice-Chief Coordinators** |
| **Program**Prof., Oya ORUN | **Assessment** Assoc. Prof., Hasan R. YANANLI | **Students’ Affairs**Assist. Prof., Can ERZİK |
| **Chief Coordinator (Pre-Clinical Education)** Prof., Serap ŞİRVANCI | **Coordinator of Medical Education Program Evaluation and Development Commission**Prof., Harika ALPAY |
| **Vice Dean (Education)**Prof., Ümit ŞEHİRLİ | **Dean** Prof., Hakan GÜNDÜZ |

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| MU MEDICAL SCHOOL PRE-CLINICAL EDUCATION PROGRAM |
| LEARNING OUTCOMES / COMPETENCIES1. Clinical Care: Qualified patient care and community oriented health care
2. Basic clinical skills
3. The organization and management of the patient and the patient care
4. The organization and the management of health care delivery services / system
5. Health promotion and disease prevention
6. Medical Knowledge and Evidence-Based Medicine
7. Appropriate information retrieval and management skills
8. The integration of knowledge, critical thinking and evidence-based decision making
9. Scientific methods and basic research skills
10. Professional Attitudes and Values
11. Communication skills and effective communication with patients / patient relatives
12. Interpersonal relationships and team working
13. Ethical and professional values, responsibilities
14. Individual, social and cultural values and responsibilities
15. Reflective practice and continuing development
16. Healthcare delivery systems, management and community oriented health care
17. Education and counseling
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| PHASE-1 LEARNING OBJECTIVES1. Understanding the normal structures and functions of human body
2. Correlating the basic concepts and principles to each other that define health and disease; applying basic concepts and principles to health and disease conditions
3. Developing clinical problem solving, clinical reasoning and evaluation skills by integrating biomedical, clinical, social and humanities knowledge
4. Gaining basic clinical skills by applications in simulated settings.
5. Awareness of the professional values in health and disease processes (professional, individual, societal) and acquisition necessary related skills
6. Evaluating critically and synthesizing all the medical evidence and perform respecting scientific, professional and ethical values
7. Acquisition skills in reflective thinking and practicing, being open to continuous individual / professional development.
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| PHASES – 1 THEMA/ORGAN SYSTEM-BASED COURSE PROGRAMSYear 1, Course 1: Introduction to Cell and Cellular ReplicationYear 1, Course 2: Cellular Metabolism and TransportYear 1, Course 3: Development and Organization of Human BodyYear 1, Course 4: Introduction to Nervous System and Human BehaviorYear 2, Course 1: Cell and Tissue Injury I Year 2, Course 2: Cell and Tissue Injury IIYear 2, Course 3: Hematopoietic System and Related DisordersYear 2, Course 4: Musculoskeletal, Integumentary Systems and Related DisordersYear 2, Course 5: Respiratory System and Related DisordersYear 3, Course 1: Cardiovascular System and Related DisordersYear 3, Course 2: Gastrointestinal System, Metabolism and Related DisordersYear 3, Course 3: Nervous System and Related DisordersYear 3, Course: Growth, Development, Mental Health and Related DisordersYear 3, Course 5: Urinary and Reproductive System and Related Disorders |

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| CELLULAR METABOLISM AND TRANSPORT |
| AIM and LEARNING OBJECTIVES of COURSE **Aim:** At the end of this committee, first year students will gain knowledge about the metabolic pathways within the cell, structure of the cell membrane and transport mechanisms.**Learning Objectives:** At the end of this committee, first year students will * acquire knowledge related to structural characteristics, functions and regulation of enzymes and coenzymes
* understand the ATP synthesis and its effect on metabolic pathways
* describe the constituents and reactions of metabolic pathways within the cell
* understand membrane structure and its function, physical principles of transport and signaling mechanisms both within and among the cells
* acquire skills necessary to perform experimental applications.
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| **ASSESSMENT SYSTEM**Module examination: Written exam at the end of module (10 % of final score)Practical examination: Practical exams at the end of courseCourse examination: Written exam at the end of course |  **PROGRAM EVALUATION** Evaluation at the end of the course, is done both orally and by using structured evaluation forms |
| DEPARTMENTS PARTICIPATING IN COURSE-1.2 & MODULE-1.2 |
| * Biochemistry
* Biophysics
* Biostatistics
* Cardiovascular Surgery
* Medical Biology
 | * Medical Education
* Ophtalmology
* Physiology
* Urology
 |
| LECTURERS / TUTORS |
| Mustafa AKKİPRİK, Professor of Medical Biology Yaşar İnci ALİCAN, Professor of Physiology Saime BATIREL, Assoc. Professor of Biochemistry Gülnaz Nural BEKİROĞLU, Professor of BiostatisticsHülya CABADAK, Professor of BiophysicsÖzgür Kasımay ÇAKIR, Assoc. Professor of Physiology Özge EMRE, Instructor of Medical English Can ERZİK, Assist. Professor of Medical Biology Günseli Ayşe GARİP İNHAN, Assoc. Professor of Biophysics | Goncagül HAKLAR, Professor of Biochemistry Betül KARADEMİR, Assoc. Professor of BiochemistryCevdet NACAR, Assist. Professor of Biophysics Nesrin Kartal ÖZER, Professor of Biochemistry Sıdıka Ayşe ÖZER, Professor of Medical Biology Ahmet Suha YALÇIN, Professor of Biochemistry Berrak YEĞEN, Professor of Physiology Alper YILDIRIM, Assoc. Professor of Physiology |
| READING / STUDYING MATERIALS* Biochemistry, Stryer, 4th Ed., Freeman
* Biochemistry, Zubay, 3rd Ed., WCB
* Harper's Biochemistry, Murray, Granner, 23rd Ed., Lange Interscience, New Jersey 2003
* Introduction to Biostatistics For Health Sciences, Micheal R. Chernick, Robert H. Friss,Willey
* Lehninger Principles of Biochemistry, Nelson, Cox, 3rd edition, Worth
* Medical Statistics at a Glance, Aviva Petrie, Caroline Sabin, Blackwell Science, London 2003
* Physics, Giancoli, 4th Ed., Prentice Hall
* Practical Statistics For Medical Research, Douglas Altman, Chapman & Hall, London 1995
* Principles of Physiology, Bern and Levy, 4th Ed.
* Temel Biyoistatistik, Mustafa Şenocak, Çağlayan Kitapevi, İstanbul 1990
* Textbook of Physiology, Guyton and Hall , 10th Ed.
* The Cell: A Molecular Approach, Cooper, 2nd Ed., ASM Press
* Molecular Biology of the Cell, Alberts et al. 3rd Ed., Garland
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| SUMMARY OF THE COURSE 1.2 |
| Discipline | **Lecture & Group Discussion** | **Multidisciplinary Lab. & Clinical Skills Lab. &** **ICP Lab.** **Practice** | Total |
| Biochemistry | 26 | 9 | 35 |
| Biophysics | 20 |  | 20 |
| Biostatistics | 10 |  | 10 |
| Medical Biology | 4 |  | 4 |
| Physiology | 8 | 2 | 10 |
| Subtotal | 66 | 11 | 79 |
| PBL Module | 8 |  | 8 |
| TOTAL | 74 | 11 | 87 |
| ICP-1: Computer Skills (Students’ Research Activity) |  | 18 | 18 |
| Medical English | 12 |  | 12 |
| TOTAL | **88** | **26** | **117** |

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| **SEVEN WEEK PROGRAM** |
|  | **THEORETICAL AND PRACTICAL SESSIONS** | **LECTURER(S)/TUTOR(S)** |
| **Week-1 (02 December - 06 December 2019)** |
| **Monday** | **02 December** |  |
| 08:45-09:30 | Introduction to the course | Dr. Betül Karademir |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | Homeostasis | Dr. Berrak Yegen |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | Physical principles: Diffusion and facilitated transport | Dr. Hülya Cabadak |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Physical principles: Diffusion and facilitated transport | Dr. Hülya Cabadak |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Elective Course |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Elective Course |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Tuesday** | **03 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Signal transduction | Dr. Özgür Kasımay Çakır |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Cell to cell adhesions | Dr. Özgür Kasımay Çakır |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Electrochemical potentials, Nernst potential | Dr. Günseli Ayşe Garip İnhan |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Transport of substances | Dr. Yaşar İnci Alican |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Transport of substances | Dr. Yaşar İnci Alican |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Wednesday** | **04 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Introduction to bioelectricity-I | Dr. Cevdet Nacar |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Introduction to bioelectricity-I | Dr. Cevdet Nacar |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Thursday** | **05 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Introduction to bioelectricity-II | Dr. Cevdet Nacar |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Introduction to bioelectricity-II | Dr. Cevdet Nacar |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Active transport and secondary active transport | Dr. Hülya Cabadak |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Intercellular communication | Dr. Alper Yıldırım |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Friday** | **06 December** |  |
| 08:45-09:30 | Introduction to metabolism and metabolic control | Dr. Betül Karademir |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | Introduction to metabolism and metabolic control | Dr. Betül Karademir |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | ICP-1 Student Research & Computer Skills | Year 1 Hall |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | ICP-1 Student Research & Computer Skills | Year 1 Hall |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 |   |   |
| 14:30-14:35 |   |   |
| 14:45-15:30 | Membrane potentials and action potential | Dr. Günseli Ayşe Garip İnhan |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Membrane potentials and action potential | Dr. Günseli Ayşe Garip İnhan |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Week-2 (09 December - 13 December 2019)** |
| **Monday** | **09 December** |  |
| 08:45-09:30 | Bioelectric potentials | Dr. Berrak Yegen |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | Bioelectric potentials | Dr. Berrak Yegen |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | What is probability and probability distribution? | Dr. Gülnaz Nural Bekiroğlu |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Bayes’ Theorem  | Dr. Gülnaz Nural Bekiroğlu |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Elective Course |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Elective Course |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Tuesday** | **10 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 | Overview of glycolysis | Dr. Ahmet Suha Yalçın |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | Flow of energy in nature, first law of thermodynamics | Dr. Günseli Ayşe Garip İnhan |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Flow of energy in nature, first law of thermodynamics | Dr. Günseli Ayşe Garip İnhan |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Physical characteristics of membrane structure and function | Dr. Cevdet Nacar |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Physiology LAB: Cell Physiology-Group A | Multidisciplinary Lab. |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Physiology LAB: Cell Physiology-Group A | Multidisciplinary Lab. |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Wednesday** | **11 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Reactions of glycolysis | Dr. Ahmet Suha Yalçın |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Reactions of glycolysis | Dr. Ahmet Suha Yalçın |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Membrane proteins | Dr. Cevdet Nacar |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |  |   |
| 17:30-17:35 |  |   |
|   |   |  |
| **Thursday** | **12 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 |  ICP-1 Student Research & Computer Skills |  Computer Lab. |
| 11:30-11:35 |  Discussion |   |
| 11:45-12:30 |  ICP-1 Student Research & Computer Skills |  Computer Lab. |
| 12:30-12:35 |  Discussion |   |
|   |   |   |
| 13:45-14:30 | Regulation of glycolysis | Dr. Ahmet Suha Yalçın |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Regulation of glycolysis | Dr. Ahmet Suha Yalçın |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |  ICP-1 Student Research & Computer Skills |  Computer Lab. |
| 16:30-16:35 |  Discussion |   |
| 16:45-17:30 |  ICP-1 Student Research & Computer Skills |  Computer Lab. |
| 17:30-17:35 |  Discussion |   |
|   |   |  |
| **Friday** | **13 December** |  |
| 08:45-09:30 |  |  |
| 09:30-09:35 |  |  |
| 09:45-10:30 |  |  |
| 10:30-10:35 |  |  |
| 10:45-11:30 | The second law of thermodynamics, entropy, free energy | Dr. Günseli Ayşe Garip İnhan |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | The second law of thermodynamics, entropy, free energy | Dr. Günseli Ayşe Garip İnhan |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 |   |   |
| 14:30-14:35 |   |   |
| 14:45-15:30 | Coupling of biological reactions with high energy metabolite | Dr. Hülya Cabadak |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Coupling of biological reactions with high energy metabolite | Dr. Hülya Cabadak |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Week-3 (16 December - 20 December 2019)** |
| **Monday** | **16 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 | Energetics of electron transport | Dr. Hülya Cabadak |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | Tricarboxylic acid cycle and hexose monophosphate shunt | Dr. Goncagül Haklar |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Tricarboxylic acid cycle and hexose monophosphate shunt | Dr. Goncagül Haklar |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Elective Course |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Elective Course |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Tuesday** | **17 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 | Free energy and thermodynamic properties of water | Dr. Günseli Ayşe Garip İnhan |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | Physiology LAB: Cell Physiology-Group B | Multidisciplinary Lab. |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Physiology LAB: Cell Physiology-Group B | Multidisciplinary Lab. |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Tricarboxylic acid cycle and hexose monophosphate shunt | Dr. Goncagül Haklar |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Tricarboxylic acid cycle and hexose monophosphate shunt | Dr. Goncagül Haklar |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | ICP-1 Student Research & Computer Skills | Year 1 Hall |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 | ICP-1 Student Research & Computer Skills | Year 1 Hall |
| 17:30-17:35 | Discussion |   |
|   |   |  |
| **Wednesday** | **18 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 |  |   |
| 14:30-14:35 |  |   |
| 14:45-15:30 | PBL-1 |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | PBL-1 |   |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Thursday** | **19 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 |   |   |
| 11:30-11:35 |   |   |
| 11:45-12:30 |   |   |
| 12:30-12:35 |   |   |
|   |   |   |
| 13:45-14:30 | Introduction to statistical analysis | Dr. Gülnaz Nural Bekiroğlu |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Sampling, distribution and estimation | Dr. Gülnaz Nural Bekiroğlu |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | ICP-1 Communication Skills and Introduction to Medical Interview | Year 1 Hall |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 | ICP-1 Communication Skills and Introduction to Medical Interview | Year 1 Hall |
| 17:30-17:35 | Discussion |   |
|   |   |  |
| **Friday** | **20 December** |  |
| 08:45-09:30 | Applications of recombinant DNA technology in medicine | Dr. Mustafa Akkiprik |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | Applications of recombinant DNA technology in medicine | Dr. Mustafa Akkiprik |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | ICP-1 Communication Skills and Introduction to Medical Interview |   |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | ICP-1 Communication Skills and Introduction to Medical Interview |   |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Study time |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | PBL-2 |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | PBL-2 |   |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Week-4 (23 December - 27 December 2019)** |
| **Monday** | **23 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Electron transport chain | Dr. Goncagül Haklar |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Electron transport chain | Dr. Goncagül Haklar |
| 12:30-12:35 | Discussion |   |
|   |   |  |
| 13:45-14:30 | Elective Course |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Elective Course |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Tuesday** | **24 December** |  |
| 08:45-09:30 | ICP-1 Student Research & Computer Skills  | Year 1 Hall |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | ICP-1 Student Research & Computer Skills  | Year 1 Hall |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | Oxidative Phosphorylation | Dr. Goncagül Haklar |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Oxidative Phosphorylation | Dr. Goncagül Haklar |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Principles of statistical analysis  | Dr. Gülnaz Nural Bekiroğlu |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Elements of statistical interference | Dr. Gülnaz Nural Bekiroğlu |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Wednesday** | **25 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Study time |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | PBL-3 |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | PBL-3 |   |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
|   |   |  |
| **Thursday** | **26 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Oxidation of lipids | Dr. Saime Batırel |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Oxidation of lipids | Dr. Saime Batırel |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Biosynthesis of lipids | Dr. Nesrin Kartal Özer  |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Biosynthesis of lipids | Dr. Nesrin Kartal Özer  |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
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| **Friday** | **27 December** |  |
| 08:45-09:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Study Time |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | PBL-4 |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | PBL-4 |   |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
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| **Week-5 (30 December 2019 - 03 January 2020)** |
| **Monday** | **30 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Biosynthesis of lipids | Dr. Nesrin Kartal Özer  |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Biosynthesis of lipids | Dr. Nesrin Kartal Özer  |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Elective Course |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Elective Course |   |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
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| **Tuesday** | **31 December** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 | Genome of mitochondria | Dr. Can Erzik |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | Testing statistical hypothesis | Dr. Gülnaz Nural Bekiroğlu |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Types of errors in statistical inference | Dr. Gülnaz Nural Bekiroğlu |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Gluconeogenesis and glycogen metabolism-1 | Dr. Nesrin Kartal Özer  |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Gluconeogenesis and glycogen metabolism-1 | Dr. Nesrin Kartal Özer  |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
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| **Wednesday** | **01 January** |  |
| 08:45-09:30 | **YILBAŞI TATİLİ** |   |
| 09:30-09:35 |   |
| 09:45-10:30 |   |
| 10:30-10:35 |   |
| 10:45-11:30 |   |
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| 17:30-17:35 |   |
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| **Thursday** | **02 January** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Biochemistry LAB: Anaerobic Glycolysis-Group A | Multidisciplinary Lab. |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Biochemistry LAB: Anaerobic Glycolysis-Group A | Multidisciplinary Lab. |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Biochemistry LAB: Anaerobic Glycolysis-Group A | Multidisciplinary Lab. |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Biochemistry LAB: Anaerobic Glycolysis-Group A | Multidisciplinary Lab. |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Biochemistry LAB: Anaerobic Glycolysis-Group A | Multidisciplinary Lab. |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 | Biochemistry LAB: Anaerobic Glycolysis-Group A | Multidisciplinary Lab. |
| 17:30-17:35 | Discussion |   |
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| **Friday** | **03 January** |  |
| 08:45-09:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | ICP-1 Medications administration facilities | ICP Lab. |
| 12:30-12:35 | Discussion |   |
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| 13:45-14:30 |   |   |
| 14:30-14:35 |   |   |
| 14:45-15:30 | Gluconeogenesis and glycogen metabolism-2 | Dr. Nesrin Kartal Özer  |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Gluconeogenesis and glycogen metabolism-2 | Dr. Nesrin Kartal Özer  |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
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| **Week-6 (06 January - 10 January 2020)** |
| **Monday** | **06 January** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Difference between parametric and nonparametric methods; Introduction to parametric methods | Dr. Gülnaz Nural Bekiroğlu |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | One sample t-test, unpaired t-test and paired t-test | Dr. Gülnaz Nural Bekiroğlu |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Elective Course |   |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Elective Course |   |
| 15:30-15:35 | Discussion |   |
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| **Tuesday** | **07 January** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Biochemistry LAB: Anaerobic Glycolysis-Group B | Multidisciplinary Lab. |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Biochemistry LAB: Anaerobic Glycolysis-Group B | Multidisciplinary Lab. |
| 12:30-12:35 | Discussion |   |
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| 13:45-14:30 | Biochemistry LAB: Anaerobic Glycolysis-Group B | Multidisciplinary Lab. |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Biochemistry LAB: Anaerobic Glycolysis-Group B | Multidisciplinary Lab. |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Biochemistry LAB: Anaerobic Glycolysis-Group B | Multidisciplinary Lab. |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 | Biochemistry LAB: Anaerobic Glycolysis-Group B | Multidisciplinary Lab. |
| 17:30-17:35 | Discussion |   |
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| **Wednesday** | **08 January** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 |   |   |
| 10:30-10:35 |   |   |
| 10:45-11:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Medical English | Dr. Seza Arbay, Dr. Özge Emre |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Biochemistry LAB: Electron Transport Chain-Group B | Multidisciplinary Lab. |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Biochemistry LAB: Electron Transport Chain-Group B | Multidisciplinary Lab. |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 | Biochemistry LAB: Electron Transport Chain-Group B | Multidisciplinary Lab. |
| 16:30-16:35 | Discussion |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
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| **Thursday** | **09 January** |  |
| 08:45-09:30 |   |   |
| 09:30-09:35 |   |   |
| 09:45-10:30 | Biochemistry LAB: Electron Transport Chain-Group A | Multidisciplinary Lab. |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | Biochemistry LAB: Electron Transport Chain-Group A | Multidisciplinary Lab. |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | Biochemistry LAB: Electron Transport Chain-Group A | Multidisciplinary Lab. |
| 12:30-12:35 | Discussion |   |
|   |   |   |
| 13:45-14:30 | Role of organelles in the metabolism | Dr. Betül Karademir |
| 14:30-14:35 | Discussion |   |
| 14:45-15:30 | Importance of genome projects in medicine | Dr. Sıdıka Ayşe Özer |
| 15:30-15:35 | Discussion |   |
| 15:45-16:30 |   |   |
| 16:30-16:35 |   |   |
| 16:45-17:30 |   |   |
| 17:30-17:35 |   |   |
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| **Friday** | **10 January** |  |
| 08:45-09:30 | ICP-1 Communication Skills and Introduction to Medical Interview |   |
| 09:30-09:35 | Discussion |   |
| 09:45-10:30 | ICP-1 Communication Skills and Introduction to Medical Interview |   |
| 10:30-10:35 | Discussion |   |
| 10:45-11:30 | ICP-1 Communication Skills and Introduction to Medical Interview |   |
| 11:30-11:35 | Discussion |   |
| 11:45-12:30 | ICP-1 Communication Skills and Introduction to Medical Interview |   |
| 12:30-12:35 | Discussion |   |
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| **Week-7 (13 January - 17 January 2020)** |
| **Monday** | **13 January** |  |
| 08:45-09:30 | **PRACTICAL EXAM** |   |
| 09:30-09:35 |   |
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| **Tuesday** | **14 January** |  |
| 08:45-09:30 | **PRACTICAL EXAM** |   |
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| **Wednesday** | **15 January** |  |
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| **Thursday** | **16 January** |  |
| 08:45-09:30 | **Y1C2 THEORETICAL EXAM** |   |
| 09:30-09:35 |   |
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| **Friday** | **17 January** |  |
| 08:45-09:30 |  |   |
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