



CELLULAR METABOLISM AND TRANSPORT COURSE
Year 1 Course 2
December 15, 2014 – February 13, 2015

Coordinator of the Course 1.2 Instructor, Dila ŞENER	Coordinator of the Module 1.2 Assist. Prof., Mümtaz Güran
Coordinator of Multidisciplinary Students' Lab. Instructor, Dila ŞENER	Coordinator of Clinical Skill Lab. Asist. Prof., Canan ZAIMOĞLU
Coordinators of Assessment Unite Asist. Prof., Ayşe ÜLGEN, Instructor, Dila ŞENER Asist. Prof., Mümtaz GÜRAN	Coordinator of ICS Res. Lab. Asist. Prof., Ayşe ÜLGEN
Year 1 Coordinators Assoc. Prof., Arzu UZUNER & Assoc. Prof., Mustafa AKKİPRİK	
Module Coordinator Assoc. Prof., Özlem SARIKAYA	Introduction to Clinician Skills(ICS) Coordinators Prof., Sibel KALAÇA, Assoc. Prof., Pemra ÜNALAN
Coordinator of Multidisciplinary Students' Lab. Assoc. Prof., Betül KARADEMİR ÇATALGÖL	Coordinator of Assessment Unite Asist. Prof., Cevdet NACAR
Vice-Chief Coordinators	
Assessment Asist. Prof., Cevdet NACAR	Students' Affairs Asist. Prof., Can ERZİK
Chief Coordinator Assoc. Prof., Hasan YANANLI	Coordinator of Medical Education Program Evaluation and Development Commission Prof., Berrak Ç. YEĞEN
Educational Consultant Assoc. Prof., Mehmet Ali GÜLPINAR	
Dean (EMU) Prof., Nahide GÖKÇORA	Dean (MU) Prof., Pamir ATAGÜNDÜZ

LEARNING OUTCOMES / COMPETENCIES

- A. Clinical Care: Qualified patient care and community oriented health care**
1. Basic clinical skills
 2. The organization and management of the patient and the patient care
 3. The organization and the management of health care delivery services / system
 4. Health promotion and disease prevention
- B. Medical Knowledge and Evidence-Based Medicine**
5. Appropriate information retrieval and management skills
 6. The integration of knowledge, critical thinking and evidence-based decision making
 7. Scientific methods and basic research skills
- C. Professional Attitudes and Values**
8. Communication skills and effective communication with patients / patient relatives
 9. Interpersonal relationships and team working
 10. Ethical and professional values, responsibilities
 11. Individual, social and cultural values and responsibilities
 12. Reflective practice and continuing development
 13. Healthcare delivery systems, management and community oriented healthcare
 14. Education and counseling

PHASE-1 LEARNING OBJECTIVES

1. 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.

PHASES – 1 THEMA/ORGAN SYSTEM-BASED COURSE PROGRAMS

Year 1, Course 1: Introduction to Cell and Cellular Replication

Year 1, Course 2: Cellular Metabolism and Transport

Year 1, Course 3: Development and Organization of Human Body

Year 1, Course 4: Introduction to Nervous System and Human Behavior

Year 2, Course 1: Cell and Tissue Injury I

Year 2, Course 2: Cell and Tissue Injury II

Year 2, Course 3: Hematopoietic System and Related Disorders

Year 2, Course 4: Musculoskeletal, Integumentary Systems and Related Disorders

Year 2, Course 5: Respiratory System and Related Disorders

Year 3, Course 1: Cardiovascular System and Related Disorders

Year 3, Course 2: Gastrointestinal System, Metabolism and Related Disorders

Year 3, Course 3: Nervous System and Related Disorders

Year 3, Course : Growth, Development, Mental and Endocrine Disorders

Year 3, Course 5: Urinary and Reproductive System and Related Disorders

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, students will,

1. acquire knowledge related to structural characteristics, functions and regulation of enzymes and coenzymes
2. understand the ATP synthesis and its effect on metabolic pathways
3. describe the constituents and reactions of metabolic pathways within the cell
4. understand membrane structure and its function, physical principles of transport and signaling mechanisms both within and among the cells
5. acquire skills necessary to perform experimental applications.

ASSESSMENT SYSTEM

Module examination: Written exam at the end of module (10 % of final score)

Practical examination: Practical exams at the end of course

Course 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 & MODULE-2

- Biochemistry
- Biophysics
- Histology & Emb.

- Medical Biology
- Biostatistics
- Physiology

LECTURERS / TUTORS

Ayşe DALYAN, Instructor, Turkish
Ayşe GARİP, Assoc. Prof., Biophysics
Ayşe KOZANSOY, Instructor, Medical English
Ayşe ÜLGEN, Assist. Prof., Biostatistics
Berrak Yeğen, Prof., Physiology
Betül KARADEMİR, Assist. Prof., Biochemistry
Canan ZAIMOĞLU, Assist. Prof., Pediatrics
Cevdet NACAR, Assist. Prof., Biophysics
Dila ŞENER, Instructor, Histology & Emb.
Goncagül Haklar, Prof., Biochemistry

Hasan CİCİOĞLU, Assoc. Prof., Atatürk Research Center
Hülya CABADAK, Assoc. Prof., Biophysics
İnci Alican, Prof., Physiology
Mümtaz GÜRAN, Assist. Prof., Microbiology
Naife SEVİNÇ, Instructor, Clinical Psychology
Özgür Kasımay, Assoc. Prof., Physiology
Özlem SARIKAYA, Assoc. Dr., Public Health
Saime BATIREL, Assist. Prof., Biochemistry
Sinem YILDIZ, Assist. Prof., Medical Education
Şükrü TÜZMEN, Assoc. Prof., Medical Biology

READING / STUDYING MATERIALS

- Biochemistry, Stryer, 4th Ed., Freeman
- Biochemistry, Zubay, 3rd Ed., WCB
- Biostatistics: Basic Concepts and Methodology for the Health Sciences, 10th Ed. Wayne W. Daniel, Chad L. Cross
- 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 Kitabevi, 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. 5rd Ed., Garland

SUMMARY OF THE COURSE 1.2			
Discipline	Lecture & Group Discussion	Multidisciplinary Lab. & Clinical Skills Lab. Practice	Total
Medical Biology	9		9
Biochemistry	37	9	46
Biostatistics	10		10
Physiology	8	2	10
Biophysics	20		20
Subtotal	84	11	95
PBL Module	8		8
ICS-1 Computer Skills in Medicine and Student Research Activities	8		8
Medical English	24		24
Atatürk's Principles and History of Modern Turkey	10		10
Turkish as a Second Language	12		12
Electives	15		15
TOTAL	161	11	172

SEVEN WEEK PROGRAM		
	Theoretical and Practical Sessions	Lecturer(s) / Tutor(s)
1. WEEK		
Monday, 15 December, 2014		
08:40-09:30		
09:40-10:30	Introduction to the course	Dr. Dila Şener
10:40-11:30	Opening Lecture	Dr. Dila Şener
11:40-12:30		
13:40-14:30	Medical English	Dr. Ayşe Kozansoy
14:40-15:30	Medical English	Dr. Ayşe Kozansoy
15:40-16:30	Turkish as a Second Language	
16:40-17:30	Turkish as a Second Language	
Tuesday, 16 December, 2014		
08:40-09:30	STUDY TIME	
09:40-10:30	ELECTIVES	
10:40-11:30	ELECTIVES	
11:40-12:30	ELECTIVES	
13:40-14:30	Turkish as a Second Language	
14:40-15:30	Turkish as a Second Language	
15:40-16:30	Physical characteristics of membrane structure and function	Dr. Cevdet Nacar
16:40-17:30	Membrane proteins	Dr. Cevdet Nacar
Wednesday, 17 December, 2014		
08:40-09:30	Hormones: General properties	Dr. Betül Karademir, Dr. Saime Batirel
09:40-10:30	Hormones: General properties	Dr. Betül Karademir, Dr. Saime Batirel
10:40-11:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
11:40-12:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
13:40-14:30	Medical English	Dr. Ayşe Kozansoy
14:40-15:30	Medical English	Dr. Ayşe Kozansoy
15:40-16:30	Hormonal signal transduction mechanisms	Dr. Betül Karademir, Dr. Saime Batirel
16:40-17:30	Hormonal signal transduction mechanisms	Dr. Betül Karademir, Dr. Saime Batirel
Thursday, 18 December, 2014		
08:40-09:30	ICS-1; Comp&SRA: Creating a research question, discussion about research plans	Dr. Özlem Sarıkaya, Dr. Sinem Yıldız, Dr. Ayşe Ülgen
09:40-10:30	ICS-1; Comp&SRA: How to do effective presentations?	Dr. Özlem Sarıkaya, Dr. Sinem Yıldız, Dr. Ayşe Ülgen
10:40-11:30	ICS-1; Comp&SRA: Effective use of powerpoint during presentation preparation	Dr. Özlem Sarıkaya, Dr. Sinem Yıldız, Dr. Ayşe Ülgen
11:40-12:30	ICS-1; Comp&SRA: Powerpoint practicum	Dr. Özlem Sarıkaya, Dr. Sinem Yıldız, Dr. Ayşe Ülgen
13:40-14:30	Physical principles: Diffusion and facilitated transport	Dr. Hülya Cabadak
14:40-15:30	Physical principles: Diffusion and facilitated transport	Dr. Hülya Cabadak

15:40-16:30	Active transport and secondary active transport	Dr. Hülya Cabadak
16:40-17:30	STUDY TIME	
Friday,	19 December, 2014	
08:40-09:30	Introduction to metabolism	Dr. Betül Karademir, Dr. Saime Batirel
09:40-10:30	Bioenergetics	Dr. Betül Karademir, Dr. Saime Batirel
10:40-11:30	High energy compounds and metabolic control	Dr. Betül Karademir, Dr. Saime Batirel
11:40-12:30	High energy compounds and metabolic control	Dr. Betül Karademir, Dr. Saime Batirel
13:40-14:30	Homeostasis	Dr. Berrak Yeğen
14:40-15:30	Bioelectric potentials	Dr. Berrak Yeğen
15:40-16:30	Bioelectric potentials	Dr. Berrak Yeğen
16:40-17:30	STUDY TIME	
2. WEEK		
Monday,	22 December, 2014	
08:40-09:30	ICS-1; Comp&SRA: How to prepare a questionnaire?	Dr. Sinem Yıldız, Dr. Ayşe Ülgen
09:40-10:30	ICS-1; Comp&SRA: How to prepare a questionnaire and Excel	Dr. Sinem Yıldız, Dr. Ayşe Ülgen
10:40-11:30	Medical English	Dr. Ayşe Kozansoy
11:40-12:30	Medical English	Dr. Ayşe Kozansoy
13:40-14:30	Signal Transduction	Dr. Özgür Kasımay
14:40-15:30	Cell to cell adhesion	Dr. Özgür Kasımay
15:40-16:30	LAB: Cell Physiology	Dr. Özgür Kasımay
16:40-17:30	LAB: Cell Physiology	Dr. Özgür Kasımay
Tuesday,	23 December, 2014	
08:40-09:30	Introduction to bioelectricity-I	Dr. Cevdet Nacar
09:40-10:30	Introduction to bioelectricity-I	Dr. Cevdet Nacar
10:40-11:30	ELECTIVES	
11:40-12:30	ELECTIVES	
	ELECTIVES	
13:40-14:30	Turkish as a Second Language	
14:40-15:30	Turkish as a Second Language	
15:40-16:30	Introduction to bioelectricity-II	Dr. Cevdet Nacar
16:40-17:30	Introduction to bioelectricity-II	Dr. Cevdet Nacar
Wednesday,	24 December, 2014	
08:40-09:30	STUDY TIME	
09:40-10:30	STUDY TIME	
10:40-11:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
11:40-12:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
13:40-14:30	Medical English	Dr. Ayşe Kozansoy
14:40-15:30	Medical English	Dr. Ayşe Kozansoy
15:40-16:30	Testing statistical hypotheses-1	Dr Ayşe Ülgen
16:40-17:30	Testing statistical hypotheses-1	Dr Ayşe Ülgen
Thursday,	25 December, 2014	
08:40-09:30		
09:40-10:30		

10:40-11:30		
11:40-12:30		
13:40-14:30	STUDY TIME	
14:40-15:30	STUDY TIME	
15:40-16:30	STUDY TIME	
16:40-17:30	STUDY TIME	
Friday,	26 December, 2014	
08:40-09:30	Glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
09:40-10:30	Glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
10:40-11:30	LAB: Anaerobic glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
11:40-12:30	LAB: Anaerobic glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
13:40-14:30	LAB: Anaerobic glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
14:40-15:30	LAB: Anaerobic glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
15:40-16:30	LAB: Anaerobic glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
16:40-17:30	LAB: Anaerobic glycolysis	Dr. Betül Karademir, Dr. Saime Batirel
3. WEEK		
Monday,	29 December, 2014	
08:40-09:30	STUDY TIME	
09:40-10:30	STUDY TIME	
10:40-11:30	Medical English	Dr. Ayşe Kozansoy
11:40-12:30	Medical English	Dr. Ayşe Kozansoy
13:40-14:30	Coupling of biological reactions with high energy metabolite	Dr. Hülya Cabadak
14:40-15:30	Coupling of biological reactions with high energy metabolite	Dr. Hülya Cabadak
15:40-16:30	Energetics of electron transport	Dr. Hülya Cabadak
16:40-17:30	STUDY TIME	
Tuesday,	30 December, 2014	
08:40-09:30		
09:40-10:30		
10:40-11:30	ELECTIVES	
11:40-12:30	ELECTIVES	
	ELECTIVES	
13:40-14:30	Turkish as a Second Language	
14:40-15:30	Turkish as a Second Language	
15:40-16:30	What is probability and probability distribution?	Dr. Ayşe Ülgen
16:40-17:30	Bayes' Theorem	Dr. Ayşe Ülgen
Wednesday,	31 December, 2014	
08:40-09:30	Turkish as a Second Language	
09:40-10:30	Turkish as a Second Language	
10:40-11:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
11:40-12:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu

13:40-14:30	Medical English	Dr. Ayşe Kozansoy
14:40-15:30	Medical English	Dr. Ayşe Kozansoy
15:40-16:30	Turkish as a Second Language	
16:40-17:30	Turkish as a Second Language	
Thursday, 01 January, 2015		
08:40-09:30	HOLIDAY	
09:40-10:30		
10:40-11:30		
11:40-12:30		
Friday, 02 January, 2015		
08:40-09:30	STUDY TIME	
09:40-10:30	STUDY TIME	
10:40-11:30	STUDY TIME	
11:40-12:30	STUDY TIME	
13:40-14:30	Intercellular communication	Dr. İnci Alican
14:40-15:30	Transport of substances	Dr. İnci Alican
15:40-16:30	Transport of substances	Dr. İnci Alican
4. WEEK		
Monday, 05 January, 2015		
08:40-09:30	Nucleic acid technologies	Dr. Şükrü Tüzmen
09:40-10:30	Nucleic acid technologies	Dr. Şükrü Tüzmen
10:40-11:30	Medical English	Dr. Ayşe Kozansoy
11:40-12:30	Medical English	Dr. Ayşe Kozansoy
13:40-14:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
14:40-15:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
15:40-16:30	Turkish as a Second Language	
16:40-17:30	Turkish as a Second Language	
Tuesday, 06 January, 2015		
08:40-09:30	STUDY TIME FOR PBL	
09:40-10:30	ELECTIVES	
10:40-11:30	ELECTIVES	
11:40-12:30	ELECTIVES	
13:40-14:30	Turkish as a Second Language	
14:40-15:30	Turkish as a Second Language	
15:40-16:30	Parametric and nonparametric methods, one sample t-test	Dr. Ayşe Ülgen
16:40-17:30	Unpaired t-test and paired t-test	Dr. Ayşe Ülgen
Wednesday, 07 January, 2015		
08:40-09:30	STUDY TIME	
09:40-10:30	Genome of mitochondria	Dr. Şükrü Tüzmen
10:40-11:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
11:40-12:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu

13:40-14:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
14:40-15:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
15:40-16:30	Medical English	Dr. Ayşe Kozansoy
16:40-17:30	Medical English	Dr. Ayşe Kozansoy
Thursday,	08 January, 2015	
08:40-09:30	Tricarboxylic acid cycle and hexose monophosphate shunt	Dr. Goncagül Haklar
09:40-10:30	Tricarboxylic acid cycle and hexose monophosphate shunt	Dr. Goncagül Haklar
10:40-11:30	Tricarboxylic acid cycle and hexose monophosphate shunt	Dr. Goncagül Haklar
11:40-12:30	Tricarboxylic acid cycle and hexose monophosphate shunt	Dr. Goncagül Haklar
13:40-14:30	Electrochemical potentials, Nernst potential	Dr. Ayşe Garip
14:40-15:30	Membrane potentials and action potential	Dr. Ayşe Garip
15:40-16:30	Membrane potentials and action potential	Dr. Ayşe Garip
16:40-17:30	Free energy and thermodynamic properties of water	Dr. Ayşe Garip
Friday,	09 January, 2015	
08:40-09:30	Electron Transport Chain-1	Dr. Goncagül Haklar
09:40-10:30	Electron Transport Chain-1	Dr. Goncagül Haklar
10:40-11:30	Flow of energy in nature, first law of thermodynamics	Dr. Ayşe Garip
11:40-12:30	Flow of energy in nature, first law of thermodynamics	Dr. Ayşe Garip
13:40-14:30	The second law of thermodynamics, entropy, free energy	Dr. Ayşe Garip
14:40-15:30	The second law of thermodynamics, entropy, free energy	Dr. Ayşe Garip
15:40-16:30	Electron Transport Chain-2	Dr. Goncagül Haklar
16:40-17:30	Electron Transport Chain-2	Dr. Goncagül Haklar
5. WEEK		
Monday,	12 January, 2015	
08:40-09:30	Human genome project	Dr. Şükrü Tüzmen
09:40-10:30	Human genome project	Dr. Şükrü Tüzmen
10:40-11:30	Turkish as a Second Language	
11:40-12:30	Turkish as a Second Language	
13:40-14:30	ICS-1; Comp&SRA: Presentation of suggested research topics by students	Dr. Sinem Yıldız, Dr. Ayşe Ülgen
14:40-15:30	ICS-1; Comp&SRA: Presentation of suggested research topics by students	Dr. Sinem Yıldız, Dr. Ayşe Ülgen
15:40-16:30	ICS-1: Working on prepared questionnaires with advisors	Dr. Sinem Yıldız, Dr. Ayşe Ülgen
16:40-17:30	ICS-1: Working on prepared questionnaires with advisors	Dr. Sinem Yıldız, Dr. Ayşe Ülgen
Tuesday,	13 January, 2015	
08:40-09:30	Turkish as a Second Language	
09:40-10:30	Turkish as a Second Language	
10:40-11:30	ELECTIVES	
11:40-12:30	ELECTIVES	
	ELECTIVES	
13:40-14:30	Introduction to statistical analysis, sampling distribution and estimation	Dr. Ayşe Ülgen

14:40-15:30	Introduction to statistical analysis, sampling distribution and estimation	Dr. Ayşe Ülgen
15:40-16:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
16:40-17:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
Wednesday, 14 January, 2015		
08:40-09:30	HOLIDAY	
09:40-10:30		
10:40-11:30		
11:40-12:30		
Thursday, 15 January, 2015		
08:40-09:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
09:40-10:30	PBL MODULE	Dr. Dila Şener-Dr. Ayşe Ülgen-Dr. Mümtaz Güran-Dr. Naife Sevdalı
10:40-11:30	Gluconeogenesis	Dr. Betül Karademir, Dr. Saime Batirel
11:40-12:30	Gluconeogenesis	Dr. Betül Karademir, Dr. Saime Batirel
13:40-14:30	LAB : Electron transport chain	Dr. Betül Karademir, Dr. Saime Batirel
14:40-15:30	LAB : Electron transport chain	Dr. Betül Karademir, Dr. Saime Batirel
15:40-16:30	LAB : Electron transport chain	Dr. Betül Karademir, Dr. Saime Batirel
16:40-17:30	STUDY TIME	
Friday, 16 January, 2015		
08:40-09:30	Glycogen degradation and synthesis	Dr. Betül Karademir, Dr. Saime Batirel
09:40-10:30	Glycogen degradation and synthesis	Dr. Betül Karademir, Dr. Saime Batirel
10:40-11:30	Oxidation of fatty acids	Dr. Betül Karademir, Dr. Saime Batirel
11:40-12:30	Oxidation of fatty acids	Dr. Betül Karademir, Dr. Saime Batirel
13:40-14:30	Medical English	Dr. Ayşe Kozansoy
14:40-15:30	Medical English	Dr. Ayşe Kozansoy
15:40-16:30	STUDY TIME	
16:40-17:30	STUDY TIME	
6. WEEK		
Monday, 19 January, 2015		
08:30-09:30	Application of nucleic acid technologies in medicine	Dr. Şükrü Tüzmen
09:40-10:30	Application of nucleic acid technologies in medicine	Dr. Şükrü Tüzmen
10:40-11:30	Medical English	Dr. Ayşe Kozansoy
11:40-12:30	Medical English	Dr. Ayşe Kozansoy

13:40-14:30	Biosynthesis of fatty acids	Dr. Betül Karademir, Dr. Saime Batirel
14:40-15:30	Biosynthesis of fatty acids	Dr. Betül Karademir, Dr. Saime Batirel
15:40-16:30	Biosynthesis of lipids	Dr. Betül Karademir, Dr. Saime Batirel
16:40-17:30	Biosynthesis of lipids	Dr. Betül Karademir, Dr. Saime Batirel
Tuesday, 20 January, 2015		
08:40-09:30	Biosynthesis of amino acids and non-protein nitrogenous compounds	Dr. Betül Karademir, Dr. Saime Batirel
09:40-10:30	Biosynthesis of amino acids and non-protein nitrogenous compounds	Dr. Betül Karademir, Dr. Saime Batirel
10:40-11:30	STUDY TIME	
11:40-12:30	STUDY TIME	
13:40-14:30	Turkish as a Second Language	
14:40-15:30	Turkish as a Second Language	
15:40-16:30	Nucleotide metabolism	Dr. Betül Karademir, Dr. Saime Batirel
16:40-17:30	Nucleotide metabolism	Dr. Betül Karademir, Dr. Saime Batirel
Wednesday, 21 January, 2015		
08:40-09:30	Protein technology	Dr. Şükrü Tüzmen
09:40-10:30	Protein technology	Dr. Şükrü Tüzmen
10:40-11:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
11:40-12:30	Atatürk's Principles and History of Modern Turkey	Dr. Hasan Cicioğlu
13:40-14:30	Medical English	Dr. Ayşe Kozansoy
14:40-15:30	Medical English	Dr. Ayşe Kozansoy
15:40-16:30	Sign test, Mann-Whitney U test	Dr Ayşe Ülgen
16:40-17:30	Wilcoxon test (paired samples) and review	Dr Ayşe Ülgen
Thursday, 22 January, 2015		
08:40-09:30	STUDY TIME	
09:40-10:30	STUDY TIME	
10:40-11:30	Turkish as a Second Language	
11:40-12:30	Turkish as a Second Language	
13:40-14:30	Degradation of amino acids	Dr. Betül Karademir, Dr. Saime Batirel
14:40-15:30	Degradation of amino acids	Dr. Betül Karademir, Dr. Saime Batirel
15:40-16:30	Biochemistry of Golgi, Peroxisomes, lysosomes	Dr. Betül Karademir, Dr. Saime Batirel
13:40-14:30	Biochemistry of Golgi, Peroxisomes, lysosomes	Dr. Betül Karademir, Dr. Saime Batirel
Friday, 23 January, 2015		
08:40-09:30	STUDY TIME	
09:40-10:30	STUDY TIME	
10:40-11:30	STUDY TIME	
11:40-12:30	STUDY TIME	

7. WEEK	
Monday,	09 February, 2015
08:30-09:30	
09:40-10:30	
10:40-11:30	
11:40-12:30	
Tuesday,	10 February, 2015
08:40-09:30	
09:40-10:30	PRACTICAL EXAMINATION
10:40-11:30	
11:40-12:30	
Wednesday,	11 February, 2015
08:40-09:30	
09:40-10:30	
10:40-11:30	
11:40-12:30	
Thursday,	12 February, 2015
08:40-09:30	
09:40-10:30	
10:40-11:30	
11:40-12:30	
Friday,	13 February, 2015
08:40-09:30	
09:40-10:30	THEORETICAL EXAMINATION
10:40-11:30	
11:40-12:30	