



SCIENCE AND MEDICINE

INTRODUCTION OF THE COURSE

COURSE PERIOD	: Year 1 – Semester 1
COURSE CODE	: MED103
COURSE DURATION	: 4 weeks
NATIONAL CREDIT	: 4
ECTS CREDIT	: 6
COURSE COORDINATOR	: Prof. Nuray YAZIHAN, MD
COURSE SECRETARY	: Buket ADIŞANLI, Bahadır ÇEVİRİM
COURSE DATES	: 22.10.2018 – 15.11.2018
TRAINING LOCATIONS	: Pink Hall, Yellow Hall, Medical Skills Laboratory, Hepatology Institute, Brain Research Center, Stem Cell Institute, Anatomy Lab, Pathophysiology Lab, Biostatistics Department

COORDINATING DEPARTMENT

Physiopathology

CONTRIBUTING DEPARTMENTS

Anatomy	Hepatology Institute
Biomedical Engineering	Medical Education and Informatics
Biophysics	Medical History and Ethics
Biostatistics	Medical Oncology
Brain Research Center	Medical Pathology
Endocrinology and Metabolic Diseases	Medical Pharmacology
Family Medicine	Pediatrics
Gastroenterology	Physiology
General Surgery	Public Health
Hematology	Stem Cell Institute
Histology & Embryology	Technology Transfer Office
The school of Foreign Languages	
Turkish Philology	

TEACHING STAFF

Ahmet ACIDUMAN, MD, Prof.

Ahmet SALTIK, MD, Prof.

Alp CAN, MD, Prof.

Atilla Halil ELHAN, PhD, Prof.

Belma TURAN, PhD, Prof.

Berna ARDA, MD, Prof.

Demo AHMET ASLAN, Resarch Assistant

Filiz AK, MD

Güvem GÜMÜŞ AKAY, PhD, Assoc. Prof.

Hakan AKBULUT, MD, Prof.

Hakan ERGÜN, MD, Prof.

Hamdi AKAN, MD, Prof.

Işinsu KUZU, MD, Prof.

İlgi ERTEM, MD, Prof.

İpek GÖNÜLLÜ, MD, PhD, Assist. Prof.

Kamil Can AKÇALI, MD, PhD, Prof.

M. Ayhan KUZU, MD, Prof.

M. Volkan KAVAS, MD, Assist. Prof.

Meltem Ayabakan İPEK, PhD

Meltem ÇÖL, MD, Prof.

Metehan ÇİÇEK, MD, Prof.

Mithat BOZDAYI, MD, PhD, Prof.

Mustafa ŞAHİN, MD, Prof.

Neyyire Yasemin YALIM, MD, Prof.

Nihal APAYDIN, MD, Prof.

Nuray YAZIHAN, MD, Prof.

Onur SÖNMEZ

Özgür ÇINAR, MD, Prof.

Pınar YILGÖR HURİ, PhD, Assoc. Prof.

Ramazan İDİLMAN, MD, Prof.

S. Cihan YURDAYDIN, MD, Prof.

Selami Koçak TOPRAK, MD, Assoc. Prof.

Serap ŞAHİNOĞLU KUŞ, MD, Prof.

Sevim AYDIN, MD, Prof.

Sinan ATAY, PhD

Şebnem DOĞAN, PhD

AIM OF THE COURSE

To gain knowledge and skills about history of science; science and medicine relationship; ethics of science, research and publication; research methods, resources and design, and academic writing. Also, to gain skills for basic communication and medical practices.

LEARNING OBJECTIVES OF THE COURSE

Explains the concept of science and medicine and their relationship.

Knows the philosophy of science and research.

Knows the history of science and research.

Sorts the basic principles of science and research ethics.

Sorts the basic principles of ethics of scientific publication.

Understands the importance of leadership in science.

Knows national and international collaborations.

Defines basic research methods.

Knows the stages of scientific research.

Makes the research design.

Searches the research resources.

Reads an article.

Determines the preliminary purpose of project, and makes project planning.

Knows the principles and techniques of academic writing.

Performs team working.

Performs basic medical skills (pulse and respiration counting, blood pressure measurement)

PROGRAM LEARNING OUTCOMES RELATED WITH COURSE LEARNING OBJECTIVES

COURSE LEARNING OBJECTIVES	PROGRAM LEARNING OUTCOMES
Explains the concept of science and medicine and their relationship.	LO-1
Knows the philosophy of science and research.	LO-1
Knows the history of science and research.	LO-1
Sorts the basic principles of science and research ethics.	LO-1, LO-25
Sorts the basic principles of ethics of scientific publication.	LO-1, LO-25
Understands the importance of leadership in science.	LO-1
Knows national and international collaborations.	LO-1
Defines basic research methods.	LO-1, LO-25
Knows the stages of scientific research.	LO-1, LO-25
Makes the research design.	LO-25
Searches the research resources.	LO-24, LO-25
Reads an article.	LO-1, LO-24
Determines the preliminary purpose of project, and makes project planning.	LO-25
Knows the principles and techniques of academic writing.	LO-1, LO-25
Performs team working.	LO-25
Performs basic medical skills (pulse and respiration counting, blood pressure measurement)	LO-1, LO-3

ASSESSMENT AND EVALUATION

ASSESSMENT SYSTEM

MIDTERM EXAM	Essay outline (20%) Clinical/experimental project presentations (10%)
PRACTICAL EXAM AT THE END OF COURSE	Medical skills (20%) Clinical/experimental project presentations (10%)
WRITTEN EXAM AT THE END OF COURSE	Written exam consisting of multiple-choice questions
CALCULATION OF COURSE FINAL SCORE	Midterm exam : 30% Practical exam at the end of course : 30% Written exam at the end of course : 50%

PROGRAM EVALUATION

Evaluation at the end of the course, is implemented both orally and electronically using structured evaluation forms.

SUMMARY OF THE COURSE

	Science and Medicine	Medical Education and Informatics	Total
Lecture	42		42
Workshop/Panel	7		7
Group presentation	5		5
Laboratory visit	12		12
Medical skills		12	12
TOTAL	66	12	78

COURSE PROGRAM

WEEK-1

MONDAY (22.10.2018)

08.30-09:15	Introduction to Science and Medicine	Dr. Nuray YAZIHAN
09:30-10:15		
10:30-11:15	Independent Learning Session	
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	The new perspectives to science: Critical rationalism and paradigmatic science	Dr. Neyyire Yasemin YALIM
14:30-15:15	Fundamental principles of ethics of science	Dr. Serap ŞAHİNOĞLU KUŞ
15:30-16:15	Turkish Language	Meltem AYABAKAN İPEK
16:30-17:15	Turkish Language	Meltem AYABAKAN İPEK

TUESDAY (23.10.2018)

08.30-09:15	Independent Learning Session	
09:30-10:15	Panel: Transformation in medicine - Leading innovations in healthcare	Dr. Işinsu KUZU Dr. Selami Koçak TOPRAK
10:30-11:15		
11:30-12:15	Leadership in science	Dr. Alp CAN
12:15-13:30	Lunch Break	
13:30-14:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
14:30-15:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
15:30-16:15	Independent Learning Session	
16:30-17:15		

WEDNESDAY (24.10.2018)

08.30-09:15	Basic Medical Skills (Pulse and respiration counting)	Dr. Filiz AK Dr. İpek GÖNÜLLÜ
09:30-10:15		
10:30-11:15		
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	Basic philosophy of medicine and health services	Dr. Ahmet SALTİK
14:30-15:15	Basic philosophy of medicine and health services	Dr. Ahmet SALTİK
15:30-16:15	Information and Communication Technologies	
16:30-17:15	Information and Communication Technologies	

THURSDAY (25.10.2018)		
08.30-09:15	International relationships in science and medicine	Dr. M. Ayhan KUZU
09:30-10:15	International relationships in science and medicine	Dr. M. Ayhan KUZU
10:30-11:15	Science fiction or science fact	Dr. Kamil Can AKÇALI
11:30-12:15	Science fiction or science fact	Dr. Kamil Can AKÇALI
12:15-13:30	Lunch Break	
13:30-14:15	Independent Learning Session	
14:30-15:15		
15:30-16:15		
16:30-17:15		
FRIDAY (26.10.2018)		
08.30-09:15	Independent Learning Session	
09:30-10:15	Write about science for general audiences	Dr. Hamdi AKAN
10:30-11:15	Key principles of effective presentations	Dr. Hamdi AKAN
11:30-12:15	Academic writing: Anatomy of an article	Dr. Ramazan İDİLMAN
12:15-13:30	Lunch Break	
13:30-14:15	Technical aspects for successful academic writing	H. Sinan ATAY
14:30-15:15	Technical aspects for successful academic writing	H. Sinan ATAY
15:30-16:15		
16:30-17:15		

WEEK-2		
MONDAY (29.10.2018)		
08.30-09:15	REPUBLIC DAY	
09:30-10:15		
10:30-11:15		
11:30-12:15		
12:15-13:30		
13:30-14:15		
14:30-15:15		
15:30-16:15		
16:30-17:15		
TUESDAY (30.10.2018)		
08.30-09:15	Independent Learning Session	
09:30-10:15	Midterm evaluation: Student presentations and discussion -	Dr. Nuray YAZIHAN

10:30-11:15	What I have perceived?	Dr. Özgür ÇINAR Dr. Mustafa ŞAHİN
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
14:30-15:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
15:30-16:15	Independent Learning Session	
16:30-17:15		
WEDNESDAY (31.10.2018)		
08.30-09:15	Basic Medical Skills (Blood pressure measurement)	Dr. Filiz AK Dr. İpek GÖNÜLLÜ
09:30-10:15		
10:30-11:15		
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	Independent Learning Session	
14:30-15:15		
15:30-16:15	Information and Communication Technologies	
16:30-17:15	Information and Communication Technologies	
THURSDAY (01.11.2018)		
08.30-09:15	Research types, classification and observational studies	Dr. Meltem ÇÖL
09:30-10:15	Research ethics	Dr. Berna ARDA
10:30-11:15	Ethics of scientific publication	Dr. Berna ARDA
11:30-12:15	Ethical issues in animal and human studies	Dr. Hakan ERGÜN
12:15-13:30	Lunch Break	
13:30-14:15	Experimental studies	Dr. Metehan ÇİÇEK
14:30-15:15	Experimental study design	Dr. Metehan ÇİÇEK
15:30-16:15	Workshop: Preparation for presentations	Dr. Metehan ÇİÇEK
16:30-17:15	Independent Learning Session	
FRIDAY (02.11.2018)		
08.30-09:15	Introduction to biostatistics	Dr. Atilla Halil ELHAN
09:30-10:15	Introduction to biostatistics	Dr. Atilla Halil ELHAN
10:30-11:15	Laboratory visit (Hepatology Institute)	Dr. Mithat BOZDAYI Dr. Ramazan İDİLMAN
11:30-12:15	Laboratory visit (Hepatology Institute)	Dr. Mithat BOZDAYI Dr. Ramazan İDİLMAN
13:30-14:15	Clinical studies	Dr. Hakan AKBULUT
14:30-15:15	Clinical study design	Dr. Hakan AKBULUT
15:30-16:15	Workshop: Preparation for presentations	Dr. Hakan AKBULUT

16:30-17:15		
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WEEK-3

MONDAY (05.11.2018)

08.30-09:15	Planning and writing a project	Dr. Belma TURAN
09:30-10:15	Management and implementation of a project	Dr. Belma TURAN
10:30-11:15	Project workplan and timeframe	Dr. Işinsu KUZU
11:30-12:15	Writing a grant and proposal	Dr. İlgi ERTEM
12:15-13:30	Lunch Break	
13:30-14:15	Leadership in medicine	Dr. S. Cihan YURDAYDIN
14:30-15:15		
15:30-16:15	Turkish Language	Meltem AYABAKAN İPEK
16:30-17:15	Turkish Language	Meltem AYABAKAN İPEK

TUESDAY (06.11.2018)

08.30-09:15	The science of the 20 th century: Modeling of science from epistemology to the theory of knowledge	Dr. M. Volkan KAVAS
09:30-10:15	Resources for funding medical researches	Dr. Sevim AYDIN
10:30-11:15	National and international research strategies and resources	Şebnem DOĞAN
11:30-12:15	National and international research strategies and resources	Şebnem DOĞAN
12:15-13:30	Lunch Break	
13:30-14:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
14:30-15:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
15:30-16:15	TURKMISC	Onur SÖNMEZ Dr. Nuray YAZIHAN
16:30-17:15		

WEDNESDAY (07.11.2018)

08.30-09:15	Basic Medical Skills (Pulse and respiration counting, Blood pressure measurement)	Dr. Filiz AK Dr. İpek GÖNÜLLÜ
09:30-10:15		
10:30-11:15		
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	Laboratory visit (Brain Research Center)	Dr. Güvem GÜMÜŞ AKAY
14:30-15:15		
15:30-16:15	History of science	Dr. Ahmet ACIDUMAN
16:30-17:15	Information and Communication Technologies	

THURSDAY (08.11.2018)		
08:30-09:15	Clinical/experimental project presentations by students (two groups)	Dr. Hakan AKBULUT Dr. Mustafa ŞAHİN
09:30-10:15	Clinical/experimental project presentations by students (two groups)	Dr. Belma TURAN Dr. Metehan ÇİÇEK
10:30-11:15	Visit to experimental study labs (Anatomy)	Dr. Nihal APAYDIN
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	Laboratory visit (Stem Cell Laboratory)	Dr. Kamil Can AKÇALI
14:30-15:15		
15:30-16:15	Independent Learning Session	
16:30-17:15		
FRIDAY (09.11.2018)		
08:30-09:15	Project team study (Independent work)	
09:30-10:15		
10:30-11:15	Meeting with biostatistics and scientific consultants: Small group study	Biostatistics Department
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	What have we learned this week?	Dr. Belma TURAN
14:30-15:15		
15:30-16:15		
16:30-17:15		

WEEK-4

MONDAY (12.11.2018)		
08:30-09:15	Biomedical Engineering	Dr. Pınar YILGÖR HURİ
09:30-10:15	Biomedical Engineering	Dr. Pınar YILGÖR HURİ
10:30-11:15	Pharmacoeconomics and health policy	Dr. Hakan ERGÜN
11:30-12:15	Pharmacoeconomics and health policy	Dr. Hakan ERGÜN
12:15-13:30	Lunch Break	
13:30-14:15	Independent Learning Session	
14:30-15:15		
15:30-16:15	Turkish Language	Meltem AYABAKAN İPEK
16:30-17:15	Turkish Language	Meltem AYABAKAN İPEK

TUESDAY (13.11.2018)		
08.30-09:15	Visit to experimental study labs (Pathophysiology)	Dr. Nuray YAZIHAN
09:30-10:15	Visit to experimental study labs (Research Office)	Dr. Nuray YAZIHAN
10:30-11:15	Current projects in Ankara University / Discussion	Dr. Kamil Can AKÇALI
11:30-12:15	Current projects in Ankara University / Discussion	Dr. Kamil Can AKÇALI
12:15-13:30	Lunch Break	
13:30-14:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
14:30-15:15	Ataturk's Principles and History of Revolution	Dr. Demo Ahmet ASLAN
15:30-16:15	INDEPENDENT STUDY FOR EXAMS	
16:30-17:15		
WEDNESDAY (14.11.2018)		
08.30-09:15	Medical Skills Examination (Pulse and respiration counting, Blood pressure measurement)	
09:30-10:15		
10:30-11:15		
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15	INDEPENDENT STUDY FOR EXAMS	
14:30-15:15		
15:30-16:15	Information and Communication Technologies	
16:30-17:15	Information and Communication Technologies	
THURSDAY (15.11.2018)		
08.30-09:15	WRITTEN EXAM AT THE END OF COURSE	
09:30-10:15		
10:30-11:15	FEEDBACK SESSION OF COURSE	
11:30-12:15		
12:15-13:30	Lunch Break	
13:30-14:15		
14:30-15:15		
15:30-16:15		
16:30-17:15		

FRIDAY (16.11.2018)

08.30-09:15	RECTORATE LEAVE	
09:30-10:15		
10:30-11:15		
11:30-12:15		
12:15-13:30		
13:30-14:15		
14:30-15:15		
15:30-16:15		
16:30-17:15		

READING/STUDYING SOURCES

- The Nature of Creative Development (1st Edition); Jonathan S. Feinstein; Stanford University Press, Stanford, 2006.
- Your Creative Brain: Seven Steps to Maximize Imagination, Productivity, and Innovation in Your Life (1st Edition); Shelley Carson; Harvard Health Publications, 2012.
- The Book of Why: The New Science of Cause and Effect (1st Edition); Judea Pearl, Dana Mackenzie; Harvard Health Publications, 2018.
- Principles of Biomedical Ethics (7th Edition); Tom L. Beauchamp, James F. Childress; Oxford University Press, 2012.
- Fundamentals of Biostatistics (8th Edition); Bernard Rosner; Cengage Learning, Boston, 2016.
- Leadership: Theory and Practice (7th edition); Peter G. Northouse; SAGE Publications, 2015.
- TÜBİTAK (<http://www.tubitak.gov.tr/>)
- Pubmed (<https://www.ncbi.nlm.nih.gov/pubmed>)