

EASTERN MEDITERRANEAN UNIVERSITY
FACULTY OF MEDICINE
COURSE OUTLINE

COURSE CODE	MDCN118	COURSE LEVEL	First-Third Year Medical Students	SEMESTER OFFERED	2025-26 Fall and Spring Semesters
COURSE TITLE	Molecular Techniques in Medicine				
COURSE TYPE	Area Elective (Faculty of Medicine)				
LECTURER(S)	Prof. Dr. Şükrü TÜZMEN Office: Office phone: 630-2463 Office Hours: Mondays 11:30-12:20 E-mail: sukru.tuzmen@emu.edu.tr				
CREDIT VALUE	(2, 0, 0) 2	ECTS VALUE		3	
PREREQUISITES	None				
COREQUISITES	None				
DURATION OF COURSE	One Semester				
COURSE WEBSITE	None				
AIM					
Medical health practice has now entered the era of "evidence-based medicine," characterized by the notion that clinical practice should be based on scientific knowledge. The human genome project has recently opened vast opportunities for translational medicine, enabling discoveries in medical health care through the intermediary process of basic scientific research. Therefore, this course aims to provide medical students with a comprehensive understanding of the principles of molecular techniques and their application in medicine.					
Lectures will also focus on medicine related research issues.					
GENERAL LEARNING OUTCOMES (COMPETENCES)					
The students who successfully complete this course can:					
- Articulate the basic concepts and terminology in medical biology and genetics. - Learn the fundamentals of medical/molecular technologies, medical biology and inherited genetic disorders. - Describe the applications of different molecular techniques in medicine. - Explain the recent therapeutic approaches in hemoglobinopathies and cancer.					
LEARNING / TEACHING METHOD					
The modes of delivery include formal lectures, discussions. In addition, in-class problem-based learning (PBL) sessions, literature search, presentations and short-essays are used as learning tools.					
ASSIGNMENTS					
Please see Content and Schedule section below.					
METHOD OF ASSESSMENT					
	Fall Semester	Spring Semester	Average of Both Semesters		
Midterm Exam	30%	30%			
Final Exam	40%	40%			
Presentation	20%	20%			
Quiz	10%	10%			
Total	100%	100%			
ATTENDANCE					
Attendance is required. Students who attend less than 70% of classes, and who do not take midterm, and final exams receive an NG grade.					

EXTRA CREDIT

Extra credit options may arise throughout the semester. Attending all the lectures is to your benefit and is a plus.

TEXTBOOK

Molecular Biotechnology: Principles and Applications of Recombinant DNA, 4th edition, by Bernard R. Glick, Jack J. Pasternak, Cheryl L. Patten (authors), ASM Press.

RECOMMENDED READING

Molecular Techniques and Applications, 2nd edition, edited by Gregory J. Seymour, Mary P. Cullinan, Nicholas C.K. Heng, Humana Press.

TENTATIVE CONTENT & SCHEDULE OF LECTURES

Lectures will be held on the following specified times and lecture hall:

Mondays 15:30-17.20 (Lecture Hall: SBF C-010)

The lecture topics and exam schedules within the semester are as follows:

WEEK	TOPICS
29.09.25	Importance of Human Genome Project
06.10.25	Introduction to Molecular Methodologies in Medicine
13.10.25	Applications of Molecular Biology Techniques in Medicine- I
20.10.25	Applications of Molecular Biology Techniques in Medicine – II
27.10.25	Quiz
03.11.25	Molecular Technologies in Mutation Analyses
08.11.24-22.11.24	Mid-Term Examinations Period
24.11.25	Molecular Therapeutic Approaches in Medicine: Beta-Thalassemia
01.12.25	Presentations
08.12.25	Presentations
15.12.25	Presentations
22.12.25	Presentations
29.12.25	Presentations
05.01.26-20.01.26	Final Examinations Period

PLAGIARISM

This is intentionally failing to give credit to sources used in writing regardless of whether they are published or unpublished. Plagiarism (which also includes any kind of cheating in exams) is a **disciplinary offence** and will be dealt with accordingly. The term "**plagiarism**" means the presentation of another person's idea or product as one's own. Plagiarism includes but is not limited to the following: copying verbatim all or part of another's written work; using phrases, charts, figures, illustrations or mathematical or scientific solutions without citing the source; paraphrasing ideas, conclusions, or research without citing the source.

ACADEMIC INTEGRITY

You are expected to submit YOUR OWN WORK for all assignments and activities. You may consult with your fellow students and discuss each assignment. However, the final work you submit must be your own. Even if you have collaborated with another student, the assignment should be phrased and presented in your own words. Work, which is highly similar in content, presentation, and wording, will be suspect and questioned. You are expected to adhere to EMU's policies on Academic Integrity. Instances of plagiarism and academic dishonesty will be severely dealt with, according to EMU practices and policies.

Additional guidance on how to avoid plagiarism can be found at:

<http://www.indiana.edu/~wts/wts/plagiarism.html>

<http://www.indiana.edu/~wts/wts/>.

<http://www.umuc.edu/library/guides/evaluate.html>

<http://www.milton.mse.ihu.edu/research/education/net.html>

<http://www.mlb.ilstu.edu/ressubj/subject/intrnt/evaluate.htm>

MAKE-UP POLICY

- There will be no make-up options for the unannounced **in-class exercises**.
- Students who miss either the **midterm exam or the final exam** with legitimate and documented excuses, may be eligible for the **general cumulative** make-up exam. In order to be able to take the cumulative make-up exam, valid documentation should be provided to the Department Administration within 3 working days of the scheduled exam that is missed. It is students' responsibility to check with the Department for the make-up schedule.

CLASSROOM POLICIES

Departmental classroom policies are followed. Students are responsible for complying with these rules.

- Students should be on time to lectures.
- Cell phones are to be turned off during lecture hours.
- **No video or audio recordings** of lectures are permitted.

NOTE

This course outline is intended to be a **GUIDELINE**. The contents of the course may not match precisely, as time to understand a given subject can vary and also current scientific findings may arise on daily basis, which would be interesting to cover under the related topics of your course outline.

EASTERN MEDITERRANEAN UNIVERSITY
FACULTY OF DENTISTRY
COURSE OUTLINE

COURSE CODE	MDCN118	COURSE LEVEL	First/Second/Third Year Medical Students	SEMESTER OFFERED	2025-26 Spring Semester
COURSE TITLE	Molecular Techniques in Medicine				
COURSE TYPE	Area Elective (Faculty of Medicine)				
LECTURER(S)	Prof. Dr. Şükrü Tüzmen Office phone: 630-3831 Office Hours: Mondays 14:30-15:20 E-mail: sukru.tuzmen@emu.edu.tr				
CREDIT VALUE	(2, 0, 0)2	ECTS VALUE	3		
COREQUISITES	None				
DURATION OF COURSE	One Semester				
RELATIONSHIP TO OTHER COURSES					
COURSE WEBSITE	None				
AIMS					
Medical health practice has now entered the era of "evidence-based medicine," characterized by the notion that clinical practice should be based on scientific knowledge. The human genome project has recently opened vast opportunities for translational medicine, enabling discoveries in medical health care through the intermediary process of basic scientific research. Therefore, this course aims to provide medical students with a comprehensive understanding of the principles of molecular techniques and their application in medicine. Lectures will also focus on medicine related research issues.					
LEARNING OUTCOMES					
By the end of the course, students will be able to: 1- Conduct structured literature searches in major biomedical databases. 2- Apply evidence-based medical principles. 3- Articulate the basic concepts and terminology in medical biology and genetics. 4- Learn the fundamentals of medical/molecular technologies, medical biology and inherited genetic disorders. 5- Describe the applications of different molecular techniques in medicine. 6- Prepare and deliver professional scientific presentations. 7- Design academic posters and written literature reviews.					
LEARNING / TEACHING METHOD					
The modes of delivery include formal lectures, discussions. In addition, in-class problem-based learning (PBL) sessions, literature search, presentations and short-essays are used as learning tools.					
ASSIGNMENTS					
Please see Content and Schedule section below.					

METHOD OF ASSESSMENT

	Fall Semester	Spring Semester	Average of Both Semesters
Midterm Exam	30%	30%	
Final Exam	40%	40%	
Presentation	20%	20%	
Quiz	10%	10%	
Total	100%	100%	

ATTENDANCE

Attendance is required. Students who attend less than **70%** of classes, and who do not take mid-term, and final exams receive an **NG grade**. Successful laboratory completion is obligatory.

EXTRA CREDIT

Extra credit options may arise throughout the semester. Attending all of the lectures is to your benefit and is a plus.

TEXTBOOK

Molecular Biotechnology: Principles and Applications of Recombinant DNA, 4th edition, by Bernard R. Glick, Jack J. Pasternak, Cheryl L. Patten (authors), ASM Press.

RECOMMENDED READING

NIH HANDBOOK – Genetics Home Reference at <http://ghr.nlm.nih.gov/handbook>

Genetics – From Genes to Genomes 6th Ed. Hartwell, Goldberg, Fischer et al.

Molecular Techniques and Applications, 2nd edition, edited by Gregory J. Seymour, Mary P. Cullinan, Nicholas C.K. Heng, Humana Press.

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Mondays 15:30-17:20 (SBF C010)

The lecture topics and exam schedules within the semester are as follows:

WEEK	TOPICS	READING ASSIGNMENTS
23.02.26	1. Literature Search Strategies Major Databases in Medicine • PubMed • MEDLINE • Web of Science 2. Writing a Literature Review in Medicine • Narrative reviews 2.1 Structure of a Literature Review • Introduction • Methods • Results • Discussion • Conclusion	Prof. Tuzmen's Lecture Notes
02.03.26	Introduction to Evidence-Based Research: RNAi	Prof. Tuzmen's Lecture Notes
09.03.26	Journey in Science: Revealing the Basics in Medical Genetics	Prof. Tuzmen's Lecture Notes

16.03.26	Y1C3 Committee Exam [NO Lecture]	
23.03.26	Presentation #1 (4 students. Individual presentations. Each presentation for 20 mins.)	
30.03.26	Quiz	
06.04.26	MDCN118 Mid Term Exam	
10.04.26- 25.04.26	EMU Mid-Term Examination Period [NO Lecture]	
27.04.26	Presentation #2 (4 students. Individual presentations. Each presentation for 20 mins.)	
04.05.26	Presentation #3 (4 students. Individual presentations. Each presentation for 20 mins.)	
11.05.26	Presentation #4 (4 students. Individual presentations. Each presentation for 20 mins.)	
18.05.26	Presentation #5 (4 students. Individual presentations. Each presentation for 20 mins.)	
25.05.26	NO CLASS_HOMEWORK	
01.06.26	Presentation #6 (5 students. Individual presentations. Each presentation for 16 mins.)	
08.06.26	Presentation #7 (5 students. Individual presentations. Each presentation for 16 mins.)	
15.06.26- 27.06.26	Final Examination Period	

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