



## Course Plan of Medical Genetics



<b>Semester :</b> 2th 1403-404 (Iranian Calendar)	<b>Academic Year:</b> 2025
<b>Level:</b> Medical Doctor	<b>Major:</b> MD
<b>Course Title:</b> Medical Genetics	<b>Department:</b> Genetics and Molecular Biology
<b>Course Code:</b> 1118641124	<b>The person responsible for the course:</b> Dr Mehrdad Zeinalian  <b>Co-lecturers of the course:</b> Dr Z Taherian
<b>Class NO:</b>	<b>Credit Hours:</b> 36
<b>Prerequisite:</b> None	<b>Credit Units:</b> 2 Units (Theory)
<b>Availability of Professor:</b> 14-16, every weak, Wednesdays	<b>Tel:</b> 031 3792 9196
<b>Office Address:</b> Dept. of Genetics, Medical School	<b>E-mail:</b> zeinalianmehrdad@gmail.com
<b>Name of Student Representative and Cellphone Number: ?</b>	<b>Number of Students :</b>
<b>The General Purpose of the Lesson:</b> To understand the principles of medical genetics and its applications in the diagnosis and treatment of disease	
<b>Learning Outcomes (Objectives):</b> <ul style="list-style-type: none"> <li>- To get familiar with:               <ul style="list-style-type: none"> <li>- Patterns of inheritance; including single gene, multi-genic; multifactorial; and non-Mendelian and complex patterns of inheritance.</li> <li>- Genetic counseling and risk calculation; prenatal diagnosis and genetic screening</li> <li>- Cancer Genetics, metabolic disorders</li> <li>- Cancer Genetics; genetics of development and immunogenetics</li> <li>- Treatment of genetic diseases</li> <li>- Cytogenetics and chromosomal disorders</li> <li>- Gene mapping and cloning; and recombinant DNA technology</li> </ul> </li> </ul>	
<b>Assessment Methods:</b>  <b>(The Assessment Methods that will be Used to Test Students Learning outcomes &amp; the Skills &amp; Competencies Stated in learning Outcomes)</b>	
<b>Assessment</b>	<b>Score From 20</b>
<b>Mid Exam (Theory)</b>	8
<b>Final Exam</b>	8
<b>Class and homework activities</b>	4

**Total Marks**

20

**Main References (Text Books):**

# Emery's ELEMENTS OF MEDICAL GENETICS



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For additional online content visit  
[StudentConsult.com](http://StudentConsult.com)

**References for More Reading:**

Main Reference: Elements of Medical Genetics Emery's (15<sup>th</sup> Edition)

-Other References: -Thompson & Thompson, Medical Genetics

- - Medical Genetics, Jorde-Carey-Bamshad-White

Essential pages of the main reference are determined in the course timetable

**Student's Responsibilities:**

- Before each section, having studied the content of the related session.
- Attending the classes on time
- Attending the exams, assays and doing homework

**Attendance Rules:**

- Actively attending the course discussions in the classes
- Asking questions related to the session topics
- Being able to answer to the questions asked by the lecturer
- Using cell-phone is forbidden.

**Department's Attitudes:**

To provide accurate, necessary and precise information about each session, by expert academic staff on each topic

**Mid Exam Date:** To be determined

**Final Exam Date:** To be determined

## The Timetable of the Course

NO	Main Topic	Teacher's Name	Reference	Date 2-4 PM
1	The History of Medical Genetics and Molecular Basis of Inheritance	Dr. M. Zeinalian	Emery: Ch 1.2	03/11/17 2025/Feb/5
2	Human genome and Chromosomes	Dr. Z. Taherian	Emery: Ch 3,4	03/11/24 2025/Feb/12
3	Genetic variants and Polymorphisms	Dr. M. Zeinalian	Emery: Ch 2 Tompson: Ch 4	03/12/1 2025/Feb/19
4	Monogenic inheritance patterns	Dr. Z. Taherian	Emery: Ch 6 Tompson: Ch 7	03/12/8 2025/Feb/26
5	Non-classic inheritance patterns	Dr. M. Zeinalian	Emery: Ch 6 Tompson: Ch 7	03/12/15 2025/March/5
6	Common Chromosome disorders	Dr. Z. Taherian	Emery: Ch 17	03/12/22 2025/March/12
7	Cancer Genetics	Dr. M. Zeinalian	Emery: Ch 14	04/1/20 2025/April/9
8	Congenital Abnormalities and Dysmorphic Syndromes	Dr. Z. Taherian	Emery: Ch 16	04/1/27 2025/April/16
9	Common Monogenic disorders	Dr. M. Zeinalian	Emery: Ch 18,19	04/2/3 2025/April/23
10	The genetics of Hemoglobin disorders	Dr. Z. Taherian	Emery: Ch 12	04/2/10 2025/April/30
11	Polygenic and Multifactorial Inheritance	Dr. M. Zeinalian	Emery: Ch 10	04/2/17 2025/May/7
12	Risk Calculation and Genetic Counseling	Dr. Z. Taherian	Emery: Ch 8, 21	04/2/24 2025/May/14
13	Personalized Medicine and Treatment of Genetic Disease	Dr. M. Zeinalian	Emery: Ch 15	04/2/31 2025/May/21
14	Common Molecular and genetic diagnostic techniques	Dr. Z. Taherian	Emery: Ch 5	04/3/7 2025/May/28
15	Stem Cells and Regenerative Medicine	Dr. M. Zeinalian	Last papers	04/3/21 2025/June/11
16	Genetic screening and Prenatal Diagnosis	Dr. Z. Taherian	Emery: Ch 11, 20	04/3/28 2025/June/18