



Introduction of the course: Genetics of the second semester of 1404-1405
Faculty: Medicine, Teaching Department: International General Medicine

Field and level of education: international general doctorate medicine	Course name and number: Genetics 124
Place: Class 188	Day and time: Sunday, 8-10
Number and type of units (theoretical/practical): 2 theoretical units: 1.25 units for Dr. Ghasemi and 0.75 units for Dr. Teimuri	
Prerequisite courses: 1- Cell/Molecule Biochemistry; 2- Cell Physiology	
Telephone and contact days: Saturday to Wednesday, Tel: 213	Name of the person in charge of the course: Dr. Ghasemi
Email: s.ghasemi@skums.ac.ir sorayya.ghasemi@gmail.com	Office address: Faculty of Medicine

The general objectives of the lesson are:

Familiarity with the inheritance of single-gene genetic diseases, prenatal diagnoses, cancer genetics, and gene therapy

Specific objectives of the course: The most specific objectives of this course are to increase students' familiarity with and ability to explain and interpret the following concepts:

- ۱- Students should be able to describe the way of genetic diseases and its principles.
- ۲- Students can compare prenatal diagnoses of genetic diseases and their advantages and disadvantages.
- ۳- Students should be able to describe the way of genetic diseases and its principles.
- ۴- Students can compare prenatal diagnoses of genetic diseases and their advantages and disadvantages.
- ۵- Students can understand counseling and its principles in genetics draw and interpret genealogies.
- ۶- Students can describe and compare the types of congenital anomalies and their causes (genetics and teratogens).
- ۷- Students can explain the genetics of cancer and gene therapy and describe the applications of gene therapy in cancer.
- ۸- Students can understand molecular genetics and mutations and their importance and application in medicine.
- ۹- Students can explain the importance of cytogenetics at the bedside.
- ۱۰- Students can explain the importance of the role of epigenetics and personalized medicine from a genetic point of view.

The primary sources of the lesson (book title, author's name, year and place of publication, publisher's name, number of chapters or pages in this lesson if reading all of the books or volumes as a source is not required):

- ۱- Emery's medical genetics, 14th edition
- 2- Thomson's Genetics in Medicine, 7th ed
- 3- Jared's Medical Genetics, 4th edition
- 4- The latest authoritative articles in every field

The method of student evaluation and the times related to each evaluation:

(A) During the course (quizzes, assignments, mid-semester exam

Load: 30%

The mid-term exam will be held with the agreement of all students regarding the date of the exam.

B) End of the course

Load: 70%

How to test:

The course manager's policy regarding dealing with student absences and tardiness in the classroom is:

- ☐ Absence exceeding the permitted limit will result in disqualification from the final exam.
- ☐ Attendance and absence are done carefully, and for each unexcused absence, 0.25 is deducted from the total grade.
- ☐ Timely and active attendance in class meetings is mandatory.

**The timetable for the presentation of the lesson plan: genetics of the second semester of
۱۴۰۱-۱۴۰۲**

Students' necessary preparation before class	Lecturer	Title	Hour	Days	No
Published articles and books	Dr. Ghasemi	History, importance, application, and perspective	۸-۱۰	۱۴۰۴.۷.۷	۱
Published articles and books	Dr. Ghasemi	Inheritance pattern of single gene disorders in human diseases (Mendelian inheritance)	8-10	۱۴۰۴.۷.۱۴	۲
Published articles and books	Dr. Ghasemi	Polygenic inheritance patterns in human diseases	8-10	۱۴۰۴.۷.۲۱	۳
Published articles and books	Dr. Ghasemi	Congenital malformations, teratogens, and twins	8-10	۱۴۰۴.۷.۲۸	۴

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Published articles and books	Dr. Ghasemi	Cancer genetics and current methods of gene therapy in cancer, with the introduction of important examples	8-10	۱۴۰۴.۸.۵	۵
Published articles and books	Dr. Ghasemi	The latest methods of molecular diagnosis before and after birth	8-10	۱۴۰۴.۸.۱۲	۶
Published articles and books	Dr. Ghasemi	Principles of genetic counseling, analysis, and use of pedigree in monogenic diseases	8-10	۱۴۰۴.۸.۱۹	۷
Published articles and books	Dr. Ghasemi	Genetic engineering and its applications in medicine	8-10	۱۴۰۴.۸.۲۶	۸
Published articles and books	Dr. Ghasemi	Gene therapy in humans	8-10	۱۴۰۴.۸.۵	۹
Published articles and books	Dr. Ghasemi	Application of viral and non-viral vectors in gene therapy	8-10	۱۴۰۴.۸.۱۲	۱۰
-	Dr. Ghasemi	midterm exam	8-10	Coordination with education office and students	-
Published articles and books	Dr. Teimuri	Gene mutations, importance, and applications	8-10	۱۴۰۴.۸.۱۹	۱۱
Published articles and books	Dr. Teimuri	The function of gene expression and how it is regulated	8-10	۱۴۰۴.۸.۱۰	۱۲
Published articles and books	Dr. Teimuri	Multifactorial inheritance, cytoplasmic inheritance, and immune inheritance	8-10	۱۴۰۴.۸.۱۷	۱۳
Published articles and books	Dr. Teimuri	Clinical cytogenetics	8-10	۱۴۰۴.۸.۲۴	۱۴
Published articles and books	Dr. Teimuri	Epigenetics of human diseases	8-10	۱۴۰۴.۹.۱	۱۵
Published articles and books	Dr. Teimuri	Pharmacogenetics and medicine based on individual characteristics	8-10	۱۴۰۴.۹.۸	۱۶

*** Date of the mid-semester exam: with the agreement of the students in the first half of the current semester**

❖ The date of the end of the semester exam: according to the curriculum

A) During the course (quizzes, assignments, mid-semester exam.)

B) End of the course: four-choice questions

FINAL SCORE: four-choice questions, descriptive questions, assignments during the

semester, class activities
* Other important notes for students: ۱- Attending class meetings on time and actively ۲- Performing tests ۳- Students' mobile phones must be turned off.
Announcing grades according to training schedule