

Module title: **Molecular Genetics**

Module Code: 2222713

Module Credit: 2

Term: Second Term 1397-98

Lecturer: Dr. M. Kordi Tamandani
Dor_kordi@yahoo.com

Lecturing time: Sat. (7:30-9:30) and Mon. (7.30-9:30)

Assessments: 30% mid-term exam
50% final exam
20% Seminars

Class attendance: Regular Attending is Important and Each Session Your
Attendance Will be Checked

References:

Introduction to Genetic Principles (1st Edition)

Author: David Hyde

GENES VIII

Author: Benjamin Lewin

**Next Generation Sequencing Based Clinical
Molecular Diagnosis of Human Genetic Disorders**

Editors: Wong, Lee-Jun C (Ed.)

Module Subjects:

1st. and 2nd. Week: Gene expression: Transcription (Chapter 10 from Introduction to genetic principles)

3rd. and 4th. Week: Gene expression: Translation (Chapter 11 from Introduction to genetic principles)

5th. and 6th. Week: DNA Mutation, Repair and Transposition. (Chapter 18 from Introduction to genetic principles)

7th. and 8th. Week: Transcription (Chapter 9 from Genes VIII)

9th. and 10th. Week: Recombination and repair (Chapter 15 from Genes VIII),
Mid-term Exam

11th. and 12th. Week: Overview of the Clinical Utility of Next Generation Sequencing in Molecular Diagnoses of Human Genetic Disorders (From Next Generation Sequencing Based Clinical Molecular Diagnosis of Human Genetic Disorders)

13th. and 14th. Week: Application of Next-Generation Sequencing in different diseases (From Next Generation Sequencing Based Clinical Molecular Diagnosis of Human Genetic Disorders)

15th. Week: Exome Sequencing in the Clinical Setting, Family-Based Next-Generation Sequencing Analysis (From Next Generation Sequencing Based Clinical Molecular Diagnosis of Human Genetic Disorders)

16th. Week: Next Generation of Carrier Screening (From Next Generation Sequencing Based Clinical Molecular Diagnosis of Human Genetic Disorders),
Preparation for *Final Term Exam*