

Course Title: Cancer Biochemistry Ph.D

Field and Level of Study: Ph.D in Biochemistry

Faculty: Medicine

Academic Year: 2024-2025 (1404-1403 Persian Calendar)

Prerequisite: —

Number of Credits: 2

Semester: Bahman

Instructors: Dr. Mohammadeh / Dr. Rashidi / Dr. Ijder / Dr. Faridi / Dr. Ghasemian / Clinical Professors

Class Day and Time: Wednesdays, 8:00 AM - 10:00 AM

Session	Date	Course Topics (Concepts Expected to be Taught)	Learner Activities	Teaching Method	Instructor
First		General Overview of Cancer Diseases, Differences Between Malignant and Benign Tumors			Dr. Rashidi
Second		Characteristics of Transformed Cells, Cancer Nomenclature, General Mechanisms of Carcinogenesis			Dr. Rashidi
Third		Mechanisms of Cell Growth (Control of Cell Cycle, Disruption in Checkpoints)			Dr. Ijder
Fourth		Changes in Signaling Pathway Factors, Receptors, and Transcription Factors Leading to Cancer			Dr. Ijder
Fifth		Stem Cells and Cancer			Dr. Ijder
Sixth		Types of Epigenetic Changes and Their Effects in Cancer Development			Dr. Rashidi
Seventh		Oncogenes: History, Definition, Classification, and Mechanisms of Action			Dr. Rashidi
Eighth		Tumor Suppressors and Their Types Based on Cell Cycle Functional Phase			Dr. Faridi
Ninth		Mechanisms of Action of Various Suppressors, Mechanisms of Inactivation, and Their Role in Carcinogenesis			Dr. Faridi
Tenth		Types of Cell Death (Pyroptosis, Autophagy, Anoikis, Necrosis, Entosis)			Dr. Ghasemian
Eleventh		Cell Death (Apoptosis Pathways, Central Role of Caspases)			Dr. Ghasemian
Twelfth		Cell Death (Mechanism of Apoptosis Induction by Suppressors)			Dr. Ghasemian
Thirteenth		Metastasis and Angiogenesis			Dr. Rashidi
Fourteenth		Proteomics and Genomics in Cancer			Dr. Faridi
Fifteenth		Cancer Therapy			Clinical Professors
Sixteenth		Cancer Pathology			Clinical Professors
Seventeenth		Markers, Qualitative and Quantitative Assays, and Interpretation of Results			Clinical Professors