

Program for International MSc Students of Biochemistry

First semester 2021-2022

Course title: Clinical Biochemistry

Credits: 3

Course of coordinator: Dr. Fallah

Professor	Topics	Sessions
Dr. Fallah	Biochemical tests, evaluation of liver and kidney function	1 2
Dr. Fallah	Bilirubin	3
Dr. Tavakoli	Biological fluid proteins and pathological changes	4 5
Dr. Nourbakhsh	Lipids, lipoproteins and atherosclerosis	6
Dr. Fallah	Electrolytes, and blood gases and their pathological changes	7 8
Dr. Taheri Pak	Biochemical tests for hemoglobin and iron	9 10
Dr. Fallah	Clinical Chemistry of Pregnancy	11
Dr. Fallah	Biochemical tests of amniotic fluid	12
Dr. Taheri Pak	Cytokines and pathological changes	13
Dr. Fallah	Clinical biochemistry of aging	14
Dr. Bahreini	Biochemical markers of bone metabolism	15 16
Dr. Nourbakhsh	Laboratory evaluation of endocrine disorders	17 18
Dr. Tavakoli	Biochemical study of porphyrins and their metabolic disorders	19 20
Dr. Nourbakhsh	Tumor markers	21

Course title: Metabolism

Credits: 2

Course of coordinator: Dr. Shabani

Professor	Topics	Sessions
Dr. Nourbakhsh	Bioenergetics and electron transport chain	1
Dr. Fallah	Metabolism of proteins and amino acids	2 3 4
Dr. Shabani	Carbohydrate metabolism	5 6 7
Dr. Nourbakhsh	Metabolism of lipids and lipoproteins	8 9 10
Dr. Bahreini	Metabolism of Nucleic acid	11 12 13
Dr. Fallah	Mechanisms of metabolism regulation	14 15
Dr. Tavakoli	Free radical metabolism in oxidative stress	16 17
Dr. Shabani	NO metabolism	18 19

Course name: Enzymology

Credits: 2

Course of coordinator: Dr. Nourbakhsh

Professor	Topics	Sessions
Dr. Nourbakhsh	Enzyme structure and active site	1
Dr. Bahreini	Coenzymes and cofactors	2
Dr. Bahreini	Kinetics of enzymes	3 4
Dr. Bahreini	Inhibitors and activators	5
Dr. Taheri Pak	Methods for measuring enzyme activity	6 7
Dr. Taheri Pak	Enzyme purification methods	8
Dr. Shabani	Xenobiotic Metabolizing enzymes	9 10
Dr. Fallah	Diagnostic enzymes (muscle, bone, heart, liver)	11 12
Dr. Fallah	Inherited changes in the enzyme in relation to disease	13
Dr. Shabani	The role of enzymes in biotechnology	14
Dr. Tavakoli	Enzymatic pathways in cancer	15

Course name: Biochemistry of hormones and tumor markers

Credits: 2

Course of coordinator: Dr. Nourbakhsh

Professor	Topics	Sessions
Dr. Fallah	Pituitary-hypothalamic axis hormones and their mechanism of action	1 2 3
Dr. Fallah	Adrenal and adrenal hormones (steroids)	4 5 6
Dr. Nourbakhsh	Ovarian and testicular hormones	7 8
Dr. Bahreini	Placental hormones	9 10
Dr. Tavakoli	Calcium and electrolyte regulating hormones	11 12 13
Dr. Bahreini	Thyroid hormones	14 15 16
Dr. Shabani	Pancreatic hormones and gastrointestinal tract	17 18