

School of medicine, University of Mostar		MEDICAL STUDIES IN ENGLISH		
Course:		Medical chemistry and biochemistry I		
Course teacher:		Associate Professor Ivana Martinović, PhD		
Godina:	I	Semestar:	II	
Razina kolegija:		basic	ECTS bodovi:	7,5
Status kolegija:		Compulsory		
Type of instruction		L + S + LE : 24 + 30 + 26 (80)		
(lectures + seminars + laboratory exercises; L + S + LE)				
		Number of hours		
		Lectures	Seminars	Laboratory exercises
		24	30	26
1.	Physical chemistry	17	15	26
2.	Organic chemistry	15	7	

Student responsibilities: Regular attendance and active participation in all forms of teaching;

Evaluating of student's work: Written exam

Teachers:

Associate Professor Ivana Martinović, PhD (IM)

Professor Ilijana Odak, PhD (IO)

Assistant Professor Gloria Zlatić Jelić, PhD (GZJ)

Ante Pušić, assist.

Ivona Cvetković, assist.

Day / Date / Time	Lecture schedule	Type of teaching	Group	Teacher
Monday 1. 12. 2025. 8:30-10:00 10:15 - 11:00	Chemical bonding. Intermolecular forces. Water. Chemical thermodynamics.	L 3h	All	IM
11:30-14:00	Seminars	S 3h		GZJ
14:15-15:00	Solutions	L 1h		GZJ
Tuesday 2. 12. 2025. 8:30-10:00	Solutions. Solubility of gases. Colloids. Colligative properties of solutions. Electrolytes.	L 2h	All	GZJ
10:30-13:00	Seminars	S 3h		GZJ
13:15-14:45	Chemical equilibrium and the equilibrium constant. Gibbs free energy and chemical equilibrium . Biochemical egzergonic reactions	L 2h		IM
Wednesday 3. 12. 2025. 8,00-9,30	Chemical equilibrium and the equilibrium constant. Gibbs free energy and chemical equilibrium . Biochemical egzergonic reactions	L 2h	All	IM
10:30-12:00 12:15-13:45	Acids and bases. pH, buffers.	L 4h		GZJ
14:00-15:30	Seminars	S 2h		GZJ
Thursday 4. 12. 2025. 12:30-14:00 14:15-15:00	Introduction to organic compounds. Composition, constitution, conformation. Isomerism.	L 3h	All	IO
15:15-16:00	Seminar.	S 1h		IO
		LE		
Friday 5. 12. 2025. 9:00-10:30 11:00-11:45	Hydrocarbons. Stereochemistry; chirality.	L3h	All	IO

12:00-13:30	Seminars.	S2h		IO
		LE		
Monday 8. 12. 2025. 08:30-11:15	Electrochemical processes. Chemical kinetics. Activation Energy. Reaction Mechanisms. Photochemical processes.	L 3h	All	IM
11:45-14:00	Seminars	S 3h		GZJ
14:00-		LE		
Tuesday 9. 12. 2025. 9:00-10:30 11:00-12:30	Seminars	S 4h	All	GZJ
12:45-14:00	Alcohols, ethers, thiols, sulfides.	L 2h		GZJ
14-		LE		
Wednesday 10. 12. 2025. 08:30-10:00 10:30-12:00 12:15-13:45	Aldehydes and ketones.Seminars. Carboxylic acids and derivatives. Amines. Heterocycles.	L 1h S 1h L 4h	All	GZJ
14:00-		LE		
Thursday 11. 12. 2025. 08:30-10:00 10:30-12:00 12,15-13,00	Bioorganic molecules. Seminar Seminar.	L 2h S 2h S 1h	All	GZJ
13:30-		LE		
Friday 12. 12. 2025. 14		LE		

List of laboratory exercises

LE1	Laboratory equipment and basic laboratory techniques.
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LE2	Preparation of the solutions.
LE3	Optical methods
LE4	Osmotic resistance of erythrocytes
LE5	Volummetry: Acid-base titration
LE6	Buffers; The buffer capacity; The influence of the addition of a strong acid / base to buffer pH value
LE7	Colloids
LE8	Classification tests of functional groups
LE9	Synthesis of aspirin

Literature:

K. J. Denniston, J. J. Topping, R. L. Caret, General, Organic, and Biochemistry, 4th Edition, McGraw Hill, New York, 2004.

Additional literature:

D. J. Hart, C. M. Hadad, L. E. Craine, H. Hart, Organic Chemistry – A Short Course, 13th Ed, Brooks/Cole, Cengage Learning, Belmont, 2012.

P. W. Atkins and J. de Paula, Atkins' Physical Chemistry, 9th edition, Oxford University Press, 2010.

P. W. Atkins and J. de Paula, Physical Chemistry For The Life Sciences, 2nd edition, Oxford University Press, 2011.