

School of medicine, University of Mostar		MEDICAL STUDIES IN ENGLISH		
<b>Course:</b>		<b>Medical chemistry</b>		
Course teacher:		Associate Professor Ivana Martinović, PhD		
<b>Godina:</b>	I	<b>Semestar:</b>	II	
<b>Razina kolegija:</b>	basic	<b>ECTS bodovi:</b>	7,5	
<b>Status kolegija:</b>	Compulsory			
<b>Type of instruction</b>		L + S + LE : 24 + 30 + 26 (80)		
(lectures + seminars + laboratory exercises; L + S + LE)				
		Number of hours		
		<b>Lectures</b>	<b>Seminars</b>	<b>Laboratory exercises</b>
		32	22	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)

Associate Professor Ilijana Odak, PhD (IO)

Gloria Zlatić, mag. biol. et. chem., senior assistant. (GZ)

Ante Pušić, mag. chem., assistant. (AP)

Ivona Cvetković, assistant. (IC)

Day / Date / Time	Lecture schedule	Type of teaching	Group	Teacher
<b>Tuesday</b> <b>27. 02. 2024.</b> 8,30-10,00 10,15-11,00	Chemical bonding. Intermolecular forces. Water. Chemical thermodynamics.	L 3h	All	IM
11,30-13,00 13,15-14,00	Seminars	S 3h		GZ
<b>Wednesday</b> <b>28. 02. 2024.</b> 8,30-10,00 10,15-11,45	Solutions. Solubility of gases. Colloids. Colligative properties of solutions. Electrolytes.	L 4h	All	IM
12,15 - 13,00 13,15-14,00 14,00-15,30	Seminars	S 3h		GZ
<b>Thursday</b> <b>29. 02. 2024.</b> 8,30-10,00 10,15-11,45	Chemical equilibrium and the equilibrium constant. Gibbs free energy and chemical equilibrium . Biochemical egzergonic reactions	L 4h	All	IM
12,15 - 13,00 13,15-14,00 14,00-15,30	Seminars	S 3h		IM
<b>Monday</b> <b>4. 03. 2024.</b> 8,30-10,00 10,15-11:00	Acids and bases. pH, buffers.	L 3h	All	IM
11:30 - 13,00 13,15-14,00	Seminars.	S 3h		GZ
<b>Tuesday</b> <b>5. 03. 2023.</b> 8,30-10,00 10,15-11:00	Electrochemical processes. Chemical kinetics. Activation Energy. Reaction Mechanisms.	L 3h	All	IM
11:15 - 12,00 12,15-13,45 13,45-14,00	Seminars.	S 3h		GZ
<b>Wednesday</b> <b>06. 03. 2024.</b> 08:30 - 10:00 10:15-11:00 11:15-12:00	Introduction to organic compounds. Composition, constitution, conformation. Isomerism. Hydrocarbons. Seminar.	LE 3h S 1h	All	IO
<b>Thursday</b> <b>07. 03. 2024.</b> 08:30 - 10:00 10:30 - 11:15	Stereochemistry; chirality. Alcohols, ethers, thiols, sulfides. Aldehydes and ketones.	L3h	All	IO

11:30 - 13:00	Seminars.	S2h		
<b>Friday</b> <b>08. 03. 2024.</b> 08:30 - 10:00 10:30 - 11:15 11:30 - 13:00	Carboxylic acids and derivatives. Seminars.	L3h S2h	All	IO
<b>Monday</b> <b>11. 03. 2024.</b> 08:30-10:00 10:30-12:00	Amines. Heterocycles. Bioorganic molecules.	L4h	All	IO
<b>Monday</b> <b>11. 03. 2024.</b> 12:30-14:45 15:00-17:15	Laboratory exercises 1,2,9	LE 6h	All	AP, IC
<b>Tuesday</b> <b>12. 03. 2023.</b> 08:30-10:00 10:30-12:00 12:30-14:45 15:00-16:30	Bioorganic molecules. Seminar. Laboratory exercises 3-8	L2h S2h LE 5h	All	IO AP, IC
<b>Tuesday</b> <b>12.03. 2024.</b> 12:30-14:45 15:00-16:30	Laboratory exercises 3-8	LE 5h	All	AP, IC
<b>Wednesday</b> <b>13.03. 2024.</b> 12:30-14:45 15:00-17:15	Laboratory exercises 3-8	LE 6h	All	AP, IC
<b>Thursday</b> <b>14. 03. 2024.</b> 12:30-14:45 15:00-16:30	Laboratory exercises 3-8	LE 5h	All	AP, IC
<b>Friday</b> <b>15.03. 2024.</b> 12:30-14:45 15:00-16:30	Laboratory exercises 3-8	LE 5h	All	AP, IC
<b>Monday</b> <b>19.03.2024</b> 12:30-14:45 15:00-16:30				
<b>Tuesday</b> <b>20.03. 2024.</b> 12:30-14:45 15:00-16:30				
<b>Od 21. 03 do</b> <b>27.03 –</b> <b>ispitna pauza</b>				
<b>Wednesday</b>				

<b>Thursday</b>				

### List of laboratory exercises

LE1	Laboratory equipment and basic laboratory techniques.
LE2	Preparation of the solutions.
LE3	Optical methods
LE4	Osmotic resistance of erythrocytes
LE5	Volumetry: 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, 9<sup>th</sup> edition, Oxford University Press, 2010.

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