

UNIVERSITY OF ZAGREB
FACULTY OF VETERINARY MEDICINE
Heinzlova 55
Tel. 01/2390302
Division: Basic and Pre-clinical Sciences Division
Department / Clinic: Department of chemistry and biochemistry
Email: kstarcevic@vef.hr
Zagreb, 25.08.2025.

		
206679	REPUBLIKA HRVATSKA	
Veterinarski fakultet u Zagrebu		
Primljeno:	29.08.2025	
Klasifikacijska oznaka	Org. jed.	
602-04/25-22/34	251-61-41;251-61-32	
Urudžbeni broj	Prilozi	Vrijedn
251-61-04-25-18	0	-

COURSE SYLLABUS

Course name: Medical chemistry

Academic year 2025-2026

Course leader: assoc. prof. Kristina Starčević

Vice Course leader: assist. prof. Luka Krstulović

Teachers: assist. prof. Luka Krstulović, assoc. prof. Kristina Starčević

First day of classes: 06.10.2025.

Last day of classes: 20.01.2026.

Activities - Medical Chemistry (1/3)									
Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
06/10/2025	13:30	15:00	Medical Chemistry	p01 Introduction, Structure of substance	1E-1, 1E-2		1:30	Starčević K.	P_kemija
07/10/2025	13:45	15:15	Medical Chemistry	v01 Chemical calculation basics	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
10/10/2025	13:00	14:30	Medical Chemistry	p02 Dispersed systems, H-bonds, colligative properties	1E-1, 1E-2		1:30	Starčević K.	P_patologija
10/10/2025	14:45	16:15	Medical Chemistry	v02 Chemical calculation solutions I	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
15/10/2025	12:00	13:30	Medical Chemistry	p03 Acids and bases, Activation energy	1E-1, 1E-2		1:30	Krstulović L.	P_kemija
21/10/2025	10:00	11:30	Medical Chemistry	v04 Chemical calculation solutions II	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
23/10/2025	8:15	9:00	Medical Chemistry	k01 preliminary exam 1	1E-1, 1E-2		0:45	Nastavnici na predmetu	P_kemija
28/10/2025	8:45	11:00	Medical Chemistry	v03 Solution preparation and optical methods	1E-1, 1E-2		2:15	Nastavnici na predmetu	V_kemija
28/10/2025	15:00	16:30	Medical Chemistry	p04 Isomers and Isomerism	1E-1, 1E-2		1:30	Krstulović L.	P_kemija

Activities - Medical Chemistry (2/3)									
Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
12/11/2025	10:00	11:30	Medical Chemistry	p05 Organic compounds with oxygen	1E-1, 1E-2		1:30	Krstulović L.	P_fiziologija
12/11/2025	13:30	15:45	Medical Chemistry	v05 Detection of cations and anions	1E-1, 1E-2		2:15	Nastavnici na predmetu	V_kemija
13/11/2025	10:00	11:30	Medical Chemistry	v06 Chemical calculations pH, buffer I	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
20/11/2025	10:00	11:30	Medical Chemistry	p06 Organic compounds with nitrogen	1E-1, 1E-2		1:30	Krstulović L.	P_kemija
24/11/2025	10:00	12:15	Medical Chemistry	v07 Experimental determination of pH	1E-1, 1E-2		2:15	Nastavnici na predmetu	V_kemija
27/11/2025	12:00	13:30	Medical Chemistry	p07 Carbohydrates	1E-1, 1E-2		1:30	Krstulović L.	P_kemija
02/12/2025	10:00	11:30	Medical Chemistry	v08 Chemical calculations pH, buffer II	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
05/12/2025	15:30	16:30	1 ENG	Medical Chemistry	3E-1, 3E-2	Colloquium 1	1:00	Krstulović L.	P_kemija
08/12/2025	10:00	11:30	Medical Chemistry	p08 Lipids, Amino acids	1E-1, 1E-2		1:30	Krstulović L.	P_kemija
08/12/2025	11:45	13:15	Medical Chemistry	v10 Chemical calculations- Neutralisation	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija

Activities - Medical Chemistry (3/3)									
Start Dat	Start	End	Subject	Subject	Group	Note	Length	Instructor	Room
15/12/2025	14:00	16:15	Medical Chemistry	v09 Acidimetry and alkalimetry	1E-1, 1E-2		2:15	Nastavnici na predmetu	V_kemija
16/12/2025	13:00	14:30	Medical Chemistry	p09 Proteins, Nucleic acids	1E-1, 1E-2		1:30	Krstulović L.	P_kemija
17/12/2025	13:00	14:30	Medical Chemistry	v11 Chemical calculations-Redox I	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
19/12/2025	13:45	16:00	Medical Chemistry	v12 Iodometry	1E-1, 1E-2		2:15	Nastavnici na predmetu	V_kemija
08/01/2026	8:15	9:45	Medical Chemistry	v14 Chemical calculations-Redox II	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
16/01/2026	13:30	15:45	Medical Chemistry	v13 Detection of organic compounds	1E-1, 1E-2		2:15	Nastavnici na predmetu	V_kemija
19/01/2026	11:45	13:15	Medical Chemistry	v15 Organic chemistry	1E-1, 1E-2		1:30	Nastavnici na predmetu	P_kemija
20/01/2026	15:15	16:45	1 ENG	Medical Chemistry	3E-1, 3E-2	Colloquium 2	1:30	Krstulović L.	P_kemija
27/01/2026	11:30	13:30	1 ENG	Medical Chemistry		Colloquium Repetition	2:00	Krstulović L.	P_kemija
Total: 28							45:45		

STUDENT OBLIGATIONS

Lecture attendance	There are 18 lecture lessons. • Attendance at 1 lesson is worth 0.33 points. • Maximum points: 6 (18 lessons). • Minimum required points: 3 (9 lessons).
Practicals attendance	There are 18 classroom exercise lessons (organized into 9 programmes; 2 lessons per programme). • <u>Each programme is worth 0.66 points.</u> • Maximum points: 6 (18 lessons – 9 programmes). • Minimum required points: 4 (12 lessons – 6 programmes). There are 6 laboratory exercises (6 programmes). • <u>Attendance at 1 exercise (1 programme) is worth 1 point.</u> • Maximum points: 6 (6 programmes). • Minimum required points: 4 (4 programmes).
Active participation in seminars and practicals	There are 6 laboratory exercises (6 programmes). • Activity - students must solve a task and submit a report for each laboratory exercise to receive a signature. Each correctly completed and signed exercise is worth 1.67 points • Maximum points: 10 (6 programmes × 1.67). • 5 programmes = 8 points • 4 programmes = 7 points • Minimum requirement: 3 programmes = 5 points
Continuous knowledge-checking	Two preliminary exams will be held during the semester: • First preliminary exam: 6 questions, coefficient 2 → 12 points total. • Second preliminary exam: 5 questions, coefficient 4 → 20 points total. • Cumulative maximum: 32 points. • Cumulative minimum requirement: 20 points. <u>Students who do not achieve at least 20 points will have two retake opportunities.</u>

Final exam	To take the final exam, students must obtain at least 36 points in total from the first four evaluation elements (lectures, classroom exercises, laboratory exercises, and preliminary exams), meeting the minimum in each category. • The final exam is written and consists of 25 questions: • 10 questions worth 1 point each • 15 questions worth 2 points each Maximum points: 40. Minimum requirement: 24 points.
Examination requirements	Student requirements are defined in the Regulations on the Integrated Undergraduate and Graduate Study of Veterinary Medicine. Given the above, the student must acquire a minimum number of points from all assessment elements to take the final exam. Article 41: a student can justifiably be absent from up to 50 % of the lectures; 30% of the seminars and 30 % of the exercises.

GRADING AND EVALUATING STUDENT WORK

Continuous knowledge-checking (mid-terms)	Preliminary Exam I: 23.10.2025 Preliminary Exam II: 20.01.2026 Retakes: • 05.12.2025 → PE I retake • 27.01.2026 → PE II exam retake	
Final exams (dates)	09.02.2026. 19.02.2026.	
Form of final exam	Written form	

LITERATURE

Obligatory literature	F. A. Bettelheim, W. H. Brown, J. March (2004): Introduction to General, Organic, and Biochemistry, Thomson. M. M. Bloomfield (1992): Chemistry and the Living Organism, John Wiley & Sons, Inc. M. S. Silberberg (2000): Chemistry, The Molecular Nature of Matter and Change, McGraw Hill. L. Krstulović and K. Starčević (2020) Chemical calculation, Veterinary faculty, Zagreb L. Krstulović and K. Starčević (2020) Laboratory exercises in medical chemistry	
Optional literature	F. A. Carey (2003): Organic chemistry, McGrawHill, New York J. G. Smith (2006): Organic chemistry, McGrawHill, New York	

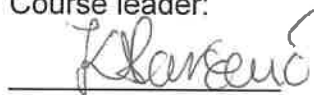
OBJECTIVES AND LEARNING OUTCOMES

Course objectives	The objective of this course is that students acquire knowledge of: matter structure, basic inorganic chemical reactions, structures and reactions of organic compounds, main groups of natural compounds and practical knowledge of chemical calculation, qualitative and quantitative analysis. Knowledge acquired by the following syllabus is going to be a base for attending and understanding of courses during the Veterinary medicine studies.	
Learning outcomes	Learning outcomes at the level of the course: After successful completion of the course the student will be able to: 1. Differentiate basic chemical reactions and physical-chemical processes. 2. Match the structure and properties of simple organic compounds and complex biologically important molecules. 3. Predict the relationship between the chemical structure of a molecule and its physical and chemical properties. 4. Propose basic methods of analytical chemistry for quantitative and qualitative analysis. 5. Solve tasks by applying chemical calculations.	

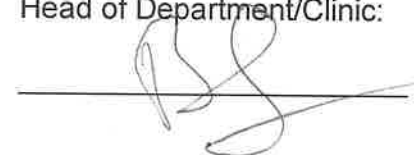
GRADING SCHEME

<i>Points</i>	<i>Grade</i>
Up to 59	1 (F)
60-68	2 (E)
69-76	2 (D)
77-84	3 (C)
85-92	4 (B)
93-100	5 (A)

Course leader:



Head of Department/Clinic:



Note: The course leader is required to submit a Course Syllabus to all teachers and associates pertaining to the Course.