Code of subject	M_WE_SEM1 CHEM
Field of study	Veterinary
Name of the training module including the Polish name	Chemistry
	Chemia
Language of instruction	English
Type of the training module (obligatory/optional)	obligatory
Level of the training module	Master level
Form of studies	Stationary/nonstationary
Location in the programme (year)	1
Location in the programme (semester)	1
Number of ECTS credits with a division into contact/noncontact	4 (2/2)
Name and surname of the person in charge	Witold Kędzierski
Unit offering the subject	Department of Biochemistry; Faculty of Veterinary Medicine
Aim of the module	Enhancement of secondary school knowledge of chemistry with selected issues from the field of inorganic, general and organic chemistry (biological meaning of trace elements, buffers, water-mineral and acid-base balance, biological organic compounds, reactions of organic compounds), which are indispensable for understanding biochemical topics discussed in the following semesters. Acquiring basic knowledge for correct performance of chemical analyses which are applied in laboratories of different profiles, including clinical chemistry, as well as food inspection.
Learning outcomes – the total number of learning outcomes may not exceed (4-8) for the module. The description of the intended learning outcomes that a student should achieve after the completion of the module should be provided. The outcomes for all forms of classes used should be presented.	Konwledge - student knows and understands:
	W1 - basic concepts and phenomena in the field of inorganic, general and organic chemistry
	W2 - the integration of inorganic, general and organic chemistry by demonstrating selected functions of a live organism
	W3 - basics of titration and quality analysis used for determination of simple organic compounds, sugars and lipids
	Skills - student is able to:
	U1 - conduct chemical experiments by routine and analyses obtained results
	U2 - use some analytical tests (characteristic reactions, titration) and laboratory devices (pH-meter, burette)
	U3 - evaluate and analyse the results of the performed tests and draw correct conclusions
	Social competences - student is ready to:
	K1 - constant studying and self-improvement
	K2 - cooperate in a group while working
Preliminary and additional requirements	No additional requirements

<table>
<tr><td>Contents of the training module – a compact description of approx. 100 words.</td><td>Lectures: basic chemical terms, atomistic theory. Biological significance of selected elements. Stoichiometry of chemical formulae and chemical equations. Solutions and manners of expressing concentration. Electrolytic dissociation and the ionic product for water, pH, hydrolysis, buffers. Processes of oxidation-reduction. Basics of analytical chemistry. Organic chemistry – nomenclature, representatives of the main groups of organic compounds, identification of function groups of these connections Carbohydrates and lipids.
Practicals: identification of selected cations and anions as well as function groups of compounds, buffer properties, acid-base titration, redox titration, absorption on medical charcoal, dialysis, identification of sugars and lipid components, determination of the acid number.</td></tr>
<tr><td>Recommended and obligatory reading list</td><td>1. Harpers Biochemistry
2. Kaneko – Clinical biochemistry
3. Stryer - Biochemistry
4. Specialistic scientific papers</td></tr>
<tr><td>The intended forms/activities/ teaching methods</td><td>Laboratory classes, lectures, materials for self-study available on Web page of Department as well as in Internet upon invitation (Casus,VikiWet)</td></tr>
<tr><td>Methods of verification and documentation forms of the achieved learning outcomes</td><td>Passing module Chemistry is possible based on:
- the presence during practicals (one absence is allowed)
- obtaining minimum number of points for activity during practicals – details are in rules for passing module hanging in classroom; teacher verifies learning outcomes during each practical giving 0-10 points for knowledge evaluated by pre-test (multiple-choice), 0-2 points for laboratory skills and 0-2 points for report about results of laboratory experiments (card of student).
- obtaining positive grades in 2 inter-semester evaluations of knowledge (Inorganic chemistry, organic chemistry);
- passing exam on practical laboratory skills based on individual determination of salicylic acid concentration (alkalimetry)
- passing the final test of single choice, answer card, grading scale compliant with the Faculty Committee for Education Quality</td></tr>
<tr><td>Balance of ECTS credits</td><td>
<table>
<tr><td>Form of classes</td><td>Contact hours</td><td>ECTS</td></tr>
<tr><td>Lectures
Practicals
Conslutations
Exam:</td><td>15
30
3
2</td><td>0.6
1.2
0.1
0.1</td></tr>
<tr><td></td><td>Noncontact hours</td><td></td></tr>
<tr><td>Preparation to practicals:
Preparation of reports:
Preparation of essay:
Reading literature:
Preparation to evaluation of knowledge:</td><td>15
7
10
3
15</td><td>0.6
0.3
0.4
0.1
0.6</td></tr>
<tr><td>Total:</td><td>100 h</td><td>4.0</td></tr>
</table>
</td></tr>
<tr><td>Number of contact hours</td><td>15 h Lectures; 30 h Practicals; 3 h Conslutations; 2 h Exam
Total 50 h – reflects 2.0 ECTS points.</td></tr>
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Relationship between subject learning outcomes and veterinary studies learning outcomes	W1 - A.W6.++; W2 - A.W5.++ A.W11.+, B.W1.+; W3 - A.W6.+ B.W17.+ U1 - A.U2.++; A.U3.++; U2 - B.U7.+; U3 - A.U4.+, B.U6.+ K1 - K8)+; K2 - K9)+, K10)+
Impact of selected compounds to final grade	Final grade is the weighted average of the result of exam (90%) and assessment of practices (10%).