

Study program: Integrated Academic Studies of Dentistry
Type and level of studies: Doctor of Dental Medicine (DMD) (300 ECTS)
<b>Course unit: CHEMISTRY</b>
<b>Teacher in charge : Full Professor Nedeljko Manojlovic, MD, DSc, MSc</b>
Language of instruction: ENGLISH
ECTS: 3
Prerequisites: none
Semester: <b>Winter semester, first year</b>
<b>Course unit objective: Acquisition of basic knowledge and skills in the field of general, inorganic and organic chemistry. Enabling students to understand the chemical aspect of basic physiological and biochemical processes and basic characteristics of potential materials in dentistry.</b>
<p><b>Learning outcomes of course unit:</b></p> <p>Knowledge about general chemistry. The importance of chemistry as a science.</p> <p>Knowledge about basic chemical concepts, chemical laws, chemical bonds, intermolecular forces, types of chemical compounds, solutions, chemical analysis, kinetics and equilibrium, buffers, oxido-reduction reactions.</p> <p>Knowledge about inorganic chemistry and chemistry of bioelements - properties of the elements of the main group of the periodic table of elements, biogenic elements.</p> <p>Knowledge about organic chemistry - Organic compounds, aliphatic and aromatic organic compounds, aldehydes, ketones, carboxylic acids, heterocyclic compounds, phosphorus, sulfur, nitrogen organic compounds, amino acids, nucleic acids.</p> <p>Skills of performing experiments, preparing solutions, measuring pH, calculations of concentration, knowledge of buffers, physiological solutions and organic molecules that are important for medicine and dentistry.</p>
<p><b>Course unit contents</b></p> <p><i>Theoretical classes</i></p> <p>The importance of chemistry as a science. General chemistry. Basic chemical concepts, chemical laws, chemical bonds, intermolecular forces, types of chemical compounds, solutions, chemical analysis, kinetics and equilibrium, buffers, oxido-reduction reactions.</p> <p>Inorganic chemistry and chemistry of bioelements - properties of elements of the main groups of the periodic table of elements, biogenic elements.</p> <p>Organic chemistry: Organic compounds, aliphatic and aromatic organic compounds, aldehydes, ketones, carboxylic acids, heterocyclic compounds, phosphorus, sulfur, nitrogen organic compounds, amino acids, peptides and proteins, carbohydrates, nucleic acids and lipids.</p> <p><i>Practical classes</i></p> <p>Laboratory equipment. Preparing of solutions of different concentrations, diluting the solution, measuring pH, calculations of concentration, buffers, physiological solutions and organic molecules that are important for medicine.</p>
<p><b>Literature</b></p> <ol style="list-style-type: none"> <li>1. <i>Trifunović S, Sabo T, Todorović Z. General chemistry. Faculty of Chemistry, Belgrade, 2014</i></li> <li>2. <i>Vollhardt PK, Schore NE. Organic chemistry, structure and function, 7<sup>th</sup> edition, W.H. Freeman and Company, New York, USA, 2014.</i></li> <li>3. <i>Bogdanović-Dušanović G, Trajković R, Manojlović N, Milenković-Andjelković A. Practicum in Biochemistry, College of Applied Vocational Studies, Vranje 2011.</i></li> </ol>

<b>Number of active teaching hours</b>				<b>Other classes</b>
Lectures: 15	Practice: 15	Other forms of classes:	Independent work:	
<b>Teaching methods: Lectures, practice in a clinic, clinical problems solving</b>				
<b>Examination methods (maximum 100 points)</b>				
<b>Exam prerequisites</b>	<b>No. of points:</b>	<b>Final exam</b>	<b>No. of points:</b>	
Student's activity during lectures	<b>40</b>	oral examination	<b>60</b>	
practical classes/tests		written examination		
Seminars/homework				
Project				
Other				

<b>Grading system</b>		
<b>Grade</b>	<b>No. of points</b>	<b>Description</b>
<b>10</b>	<b>91-100</b>	<b>Excellent</b>
<b>9</b>	<b>81-90</b>	<b>Exceptionally good</b>
<b>8</b>	<b>71-80</b>	<b>Very good</b>
<b>7</b>	<b>61-70</b>	<b>Good</b>
<b>6</b>	<b>51-60</b>	<b>Passing</b>
<b>5</b>	<b>&lt; 51</b>	<b>Failing</b>