NAME OF THE COURSE	Laboratory Course in General Chemistry I					
Code	PMC002	Year of study	1st undergraduate study			
Course teacher	Dr Renata Odžak, Associate Professor	Credits (ECTS)	3.0			
Associate teachers		Type of instruction (number of hours)	L	S	E	F
					45	
Status of the course	obligatory	Percentage of application of e-learning	20%			
COURSE DESCRIPTION						
Course objectives	The students will adopt the basics of lab work, learn the basic techniques and methods of experimental work in chemistry, master the correct execution of the given chemical experiments according to the instructions in the literature, overcome the proper observation of the experiment, record the observations and make conclusions at the end of practical work.					
Course enrolment requirements and entry competences required for the course	No conditions.					
Learning outcomes expected at the level of the course (4 to 10 learning outcomes)	After completing the course, the students will be able to: 1. Proper handling of laboratory equipment 2. Apply precautionary measures at work 3. Governance by Basic Laboratory Procedures 4. Use of acquired theoretical knowledge in experimental work 5. Developing the power of observation and accurate recording of experimental data 6. Respect the measurement results scientifically. 7. Analyzing physical and chemical properties of substances and chemical changes through laboratory exercises 8. Analyzing the legality of chemical bonding and thermodynamics through laboratory exercises					
Course content broken down in detail by weekly class schedule (syllabus)	Exercises 1. Getting acquainted with laboratory work (laboratory equipment, chemicals in the laboratory, data on chemicals labeled by the burner, laboratory scale work) (3 hours) 2. Density (determination of the liquid density by the simplest method, the pycnometer and the aerometer, the determination of the density of the solid by a pycnometer, the determination of the alcoholic alcohol content by volume). (6 hours) 3. Physical and chemical changes (heating of iron and magnesium strips, water as a solvent and as reactant, volcano, sulfur burning, law of mass maintenance) (3 hours) 4. Separation of heterogeneous mixtures (decanting, magnetic separation, sublimation, centrifugation, filtering over plain and wrinkled filter paper, filtering at reduced pressure) (3 hours) 5. Energy and Spatial Heat Capacity (Prove of High Specific Thermal Water Capacity, Determination of Specific Heat Capacity of Metal and Determination of Its Molar Mass, Determination of Calorific Value of Foods) (3 hours) 6. Types of chemical reactions and stoichiometry (writing of chemical reactions and their equilibrium, calculation of the utilization of the precipitation reaction prepared in the laboratory) (3 hours) 7. Periodic Table of Elements and Electronic Configurations of the Atom (PSE, flame retardation of some metals cations, orbital drawing, writing of the electronic configuration of the atom and quantum numbers (3 hours) 8. Ionic and covalent compounds (Lewis symbols, ionic and covalent compounds, physical properties of ionic and covalent compounds, ionic solubility, molecular formula for hydration salts, melting point for covalent compound, water polarity, determination of unknown solvents based on their polarity) (3 hours) 9. Ionic and covalent compounds (Lewis symbols, ionic and covalent compounds, physical properties of ionic and covalent compounds, ionic solubility, molecular					

	formula for the hydrate salt, melting point for covalent compound, water polarity, determination of unknown solvents based on their polarity) (3 hours) 10. Models of intramolecular and intermolecular connections (unit cells models, covalent molecule models, hydrogen bond models) (3 hours) 11. Gases (Proof of Boyle-Marriotte and Charles-Gay Lussac's Law, determination of molar and standard molar oxygen volume, determination of molar mass of carbon (IV) oxide, determination of aluminum foil thickness) (3 hours) 12. Gases (Proof of Boyle-Marriotte and Charles-Gay Lussac's Law, determination of molar and standard molar oxygen volume, determination of molar mass of carbon (IV) oxide, determination of aluminum foil thickness) (3 hours) 13. Replacement of certain exercises. (3 hours) 14. Replacement of certain exercises (3 hours)
Format of instruction	☐ lectures ☐ seminars and workshops ☒ exercises ☐ *on line* in entirety ☐ partial e-learning ☐ field work ☐ independent assignments ☐ multimedia ☐ laboratory ☐ work with mentor ☐ (other)
Student responsibilities	

Screening student work *(name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course)*						
	Class attendance	0.5	Research		Practical training	
	Experimental work	0.5	Report		(Other)	
	Essay		Seminar essay		(Other)	
	Tests	0.5	Oral exam		(Other)	
	Written exam	1.5	Project		(Other)	

Grading and evaluating student work in class and at the final exam	Obligatory entrance exam before performing laboratory exercises, self-sufficiency when performing the same, monitoring and processing of results through each exercise in the form of a referral and written or oral exams.

Required literature (available in the library and via other media)	**Title**	**Number of copies in the library**	**Availability via other media**
	R. Odžak, “Laboratory Exercises in General Chemistry”, University of Split, 2019.		available

Optional literature (at the time of submission of study programme proposal)	M Sikirica, B.Korpar-Čolig, Praktikum iz opće kemije, Školska knjiga, Zagreb, 2001. W. Haynes, ed. CRC Handbook of Chemistry and physics, 91st edition (Internet version), CRC Press/Taylor & Francis, Boca Raton, FL, 2011.
Quality assurance methods that ensure the acquisition of exit competences	For lab exercises the quality of a lab diary (reports), anonymous student surveys, consultations with students.
Other (as the proposer wishes to add)	