Course ID: HFHxxx	**Course name:** **PHYSICAL CHEMISTRY OF NANOMATERIALS**		
Cycle: SECOND	**Year: FIRST**	**Semester: I**	**ECTS credits: 4**
Course status: ELECTIVE		**Total course hours: 60** Lectures: 45 Laboratory: 15	

Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs**
Prerequisite for enrollment:	-
Course aims:	Introduction of basic knowledge about nanomaterials, their properties, preparation, characterization and application.
Thematic course units:	1. Structure and morphology of nanoparticles. 2. Structure of nanocrystals and phase transitions 3. Magnetism in nanomaterials 4. Electronic structure of clusters and nanoparticles. 5. Optical properties of nanoparticles. 6. Mechanical and nanomechanical properties. 7. Reactivity of metallic nanoparticles. 8. Microporosity. 9. Chemistry of supramolecular systems. 10. Nanocomposites. 11. Preparation of nanostructured materials. 12. Application of nanostructured materials.0
Learning outcomes:	Students will have knowledge of specific phenomena in nanomaterials and nanostructured materials.,0 **Knowledge:** Acquired knowledge on nanomaterials. **Skills:** Students will be able to prepare and characterize different nanomaterials. **Competences:** Application of specific knowledge in other branches of chemistry.
Teaching methodology:	Lectures (Oral presentation and interactive teaching) Laboratory exercises
Assessment methods and grading system[1]:	Grading criteria

	Criteria	Maximal score	Required score
1.	Class attendance	5	3
2.	Class activities	15	8
3.	Midterms	2 × 20	2 × 11

[1] The grading structure for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught as per Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

	4. Final exam: 40 / 22 Total: 100 / 55 Scores and grading Score: Grade (B&H) / Grade (ECTS) < 55: 5 / F, FX 55–64: 6 / E 65–74: 7 / D 75–84: 8 / C 85–94: 9 / B 95–100: 10 / A
Literature[2]:	Mandatory literature: 1. C. Bréchignac, P. Houdy, M. Lahmani, Nanomaterials and Nanochemistry, SpringerVerlag 2007 2. V. Jokanović, Instrumentalne metode – ključ razumevanja nanotehnologije i nanomedicine, Inženjerska akademija Srbije, INN Vinča, Beograd, 2014.

[2] The Senate of the higher education institution, as an institution, or the Council of the organizational unit of the higher education institution, as a public institution, determines by a special decision, which is published on its website before the beginning of the academic year obligatory, mandatory and recommended textbooks and manuals, as well as other recommended literature based on which exams are prepared and taken as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton