|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study program:** Master studies Chemistry | | | | |
| **Course title:** Chemistry teaching methodology with methodology 1 **(H236C)** | | | | |
| **Name of lecturer/lecturers: Aleksandra R. Zarubica** | | | | |
| **Type of course: compulsory** | | | | |
| **Number of ECTS allocated: 6** | | | | |
| **Course objectives**  The aim of the course is to train students - future professors of chemistry to be included in the teaching process within the course of Chemistry, to understand the learning objectives of general and inorganic chemistry in elementary school, high school and secondary vocational schools, to understand and apply the criteria for the selection of teaching content and methods in to general and inorganic chemistry programs, understanding the way of organizing teaching content, structure of content and learning within general and inorganic chemistry, understanding the concept of chemical literacy within general and inorganic chemistry, understanding the nature of problems that arise when learning teaching content from general and inorganic chemistry, understanding the process of evaluation and self-evaluation of the general and inorganic chemistry lesson. | | | | |
| **Course outcomes**  After successfully completing the course, students are able to:  - define and differentiate the learning objectives of general and inorganic chemistry in elementary school, high school and secondary vocational schools,  - make a choice of adequate teaching methods and teaching content of general and inorganic chemistry in elementary school, high school and in various vocational secondary schools,  - define the concepts of chemical literacy within general and inorganic chemistry,  - identify the problems that arise when learning teaching content from general and inorganic chemistry at school, as well as propose ways to solve them,  - understand and perform evaluation and self-evaluation of the general and inorganic chemistry lesson. | | | | |
| **SYLLABUS**  *Lectures*  Chemistry teaching methodology as a teaching and scientific discipline; Chemistry as a teaching subject; The specificity of the organization of the general and inorganic chemistry class; Teaching/learning objectives of general and inorganic chemistry, outcomes and educational standards in the field of general and inorganic chemistry in elementary school; Teaching/learning goals of general and inorganic chemistry, outcomes and educational standards in the field of general and inorganic chemistry in high school; Teaching/learning objectives of general and inorganic chemistry, outcomes and educational standards in the field of general and inorganic chemistry in various secondary vocational schools; Contents of general and inorganic chemistry in teaching programs for different levels of education; Contents of general and inorganic chemistry for different levels of education in the world (presentation and comparative analysis); Basic principles for the selection and structure of teaching content in general and inorganic chemistry; Chemical literacy in the field of general and inorganic chemistry; Problems related to the formation of concepts from general and inorganic chemistry and ways of solving them; Presentations of students' homework; Types and structure of lessons and lessons in general and inorganic chemistry; Forms of teaching work in general and inorganic chemistry classes in the context of work organization; Preparation of teachers for teaching in general and inorganic chemistry; Teaching methods in chemistry and teaching in general and inorganic chemistry; Active/interactive learning in chemistry classes; Evaluation of the quality of the teaching process.  *Practical teaching*  System of concepts, facts, principles, theories and laws of general chemistry as a basis for the formation of concepts from inorganic chemistry; Objectives of teaching/learning general and inorganic chemistry, outcomes and educational standards in the field of inorganic chemistry in primary school, high school and secondary vocational schools; Creation of lesson scenarios for the contents of general and inorganic chemistry according to teaching programs for primary school, high school and vocational high school; Chemical literacy - a selection of content from general and inorganic chemistry that all elementary/high school students should know; Designing different tasks in general and inorganic chemistry for students in chemistry classes; Selection and preparation of selected laboratory experiments for performance in general and inorganic chemistry classes in elementary school, high school and secondary vocational school; Evaluation and self-evaluation of one's own scenario for a lesson in general and inorganic chemistry and scenarios of colleagues. | | | | |
| **References**  1. M. Sikirica, Metodika nastave hemije, Školska knjiga, Zagreb, 2003.  2. S. Rančić, T. Anđelković, Metodika nastave hemije sa metodologijom, Prirodno-matematički fakultet, Univerzitet u Nišu, 2007.  3. R. Halaši, M. Kesler, Metodika nastave hemije i demonstracioni ogledi, Zavod za udžbenike i nastavna sredstva, Beograd, 1975.  4. I.Ivić, A. Pešikan, S. Antić, Aktivno učenje 2, Institut za psihologiju i UNICEF, Beograd, 2003.  5. R. Horvat, R. Nikolajević, Metodika nastave hemije, EDUKA, Novi Sad, 1995.  Pomoćna literatura  1. Udžbenici za osnovnu školu, gimnaziju i srednje stručne škole  2. Kurikulumi iz različitih zemalja | | | | |
| **Active teaching classes** | **Lectures 60** | | **Laboratory work 15** | |
| **Teaching mode** | | | | |
| **ASSESSMENT METHODS AND CRITERIA (Max 100 points)** | | | | |
| **Pre exam duties** | **Points** | **Final exam** | | **Points** |
| Activity during lectures | 10 | Written examination | | 20 |
| Practical teaching | 10 | Oral examination | | 40 |
| Teaching colloquia | 20 |  | |  |