| Program | Level | Second cycle |
|---|---|---|
| | Name of the program | Mathematics Education |

| COURSE | | | | |
|---|---|---|---|---|
| Course title | **Methodology of Teaching Informatics II** | | | |
| Course code | Semester | Course status | ECTS | Contact hours (L+AE+LE) |
| EDU 491 | II | Mandatory course | 5 | 2+0+2 |
| Lecturer | | | | |
| Course Goals | The goal is to make students familiar with modern approaches to organizing classes, and the procedures for conducting computer science classes. The module aims to train: students-future informatics teachers for high-quality teaching of all types of informatics-computing classes at elementary and high school levels, as well as to prepare them for lifelong learning in the field of information and communication technologies (ICT). | | | |
| Learning Outcomes | Through this module, students will work independently to become future IT teachers and be able to recognize their students' interests and abilities. | | | |

**COURSE CONTENT**

- Information and communication technology (ICT). Meaning, characteristics and development of ICT. Scientific aspects of ICT: theoretical computing as a fundamental mathematical scientific discipline, computing as a technical science, computer science as social science, and ICT as an important tool in all scientific fields.
- Education in the field of ICT. Concepts of computer, digital and information literacy. Standards in ICT education.
- Didactics of education in the field of ICT. Methodology of teaching informatics.
- Informatics-computer science in primary and secondary education.
- The goal and tasks of teaching informatics. The goal of teaching informatics: the general goal and specific goals for each stage of education. Three basic pillars of IT education: adoption of basic knowledge about ICT concepts (time invariants-an assumption for lifelong education), development of ICT application skills (agility in dealing with the environment of current ICT-practical application of ICT), development of the ability to solve problems using ICT. Tasks of teaching informatics: material, functional and educational.
- Principles of computer science teaching.
- Reasoning methods in computer science teaching.
- Selected topics from the curriculum of teaching informatics in primary and secondary schools-didactic approach.
- Programming and programming languages.

**LITERATURE**


1. O. Hazzan, T. Lapidot, and N. Ragonis, *Guide to teaching computer science: an activity based approach*, Springer-Verlag, London, 2011.
2. G. Dryden and J. Vos, *The learning revolution: to change the way the world learns*, The learning web, USA, 2001.
3. V. Poljak, *Didaktika*, Školska knjiga, Zagreb, 1991.
4. S. Varošanec, *Metodika nastave matematike II-dio*, *za internu upotrebu*, Zagreb, 2004.


**STUDENT WORKLOAD (hours in a semester)**

| Lectures | 30 | Exercises | 30 | Individual work | 100 | T o t a l | 160 |
|---|---|---|---|---|---|---|---|

| GRADING | | | REMARKS |
|---|---|---|---|
| Criterion | Maximum points | Minimum points | |
| Midterm exams | 100 | 55 | |
| Final exam | 100 | 55 | |
| T o t a l | 100 | 55 | |