# Specification for the book of courses

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| **Study program** | Electrical Engineering and Computer Science | | |
| **Module** | Computing and Informatics | | |
| **Type and level of studies** | Undergraduate Academic Studies | | |
| **The name of the course** | Fundamentals of Signals and System Analyzes | | |
| **Lecturer (for lectures)** | Radmanović M. Miloš | | |
| **Lecturer/associate (for exercises)** | Radmanović M. Miloš | | |
| **Lecturer/associate (for OFE)** | Radmanović M. Miloš | | |
| **Number of ECTS** | 5 | **Course status (obligatory/elective)** | Elective |
| **Prerequisites** | | | |
| **Course objectives** | Understanding the principles for the analysis and design of continuous and discrete signals and the possibilities of their application in solving practical problems. | | |
| **Course outcomes** | Students should know the methodology for analyzing and designing continuous and discrete signals. They are trained to use the appropriate software packages to solve the problems. | | |
| **Course outline** | | | |
| **Theoretical teaching** | Concept of signal and system, categorization of signals and systems, basics of MATLAB language for description of signals and systems, Furie's analysis of signals in MATLAB, description of systems in the frequency domain in MATLAB, design of analog and digital filters in MATLAB. | | |
| **Practical teaching (exercises, OFE, study and research** | The exercises concern a series of solved problems. Examples of description of the signal and systems in MATLAB. Design and analysis of signals and systems using MATLAB toolboxes: SymbolicMath, ControlSystem, SignalProcessing. | | |
| **Textbooks/references** | | | |
| 1 | R. Krneta, M. Acović, A. Dostanić, “Signals and Systems with MATLAB” [in Serbian], University of Kragujevac, 2009. | | |
| 2 | S. Karris, Signals and Systems with MATLAB Applications, Orchard Publications, 2003. | | |
| 3 | W. Yang, Signals and Systems with MATLAB, Springer 2009. | | |
| 4 | E. Lee, P. Varaiya, Structure and Interpretation of Signals and Systems, Addison Wesley, 2002. | | |
| 5 | Documents on Web site: http://cs.elfak.ni.ac.rs/nastava/ | | |

| **Number of classes of active education per week during semester/trimester/year** | | | | |
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| **Lectures** | **Exercises** | **OFE** | **Study and research work** | **Other classes** |
| 2 | 2 | 1 | 0 | 0 |
| **Teaching methods** | Lectures and demonstration exercises using slides, stand-alone practical exercises with the use of computers. | | | |

| **Grade (maximum number of points 100)** | | | |
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| **Pre-exam duties** | **Points** | **Final exam** | **Points** |
| **Activity during lectures** | | **Written exam** | 20 |
| **Exercises** | 20 | **Oral exam** | 40 |
| **Colloquia** | 20 | | |
| **Projects** | | | |