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|  **UNIVERSITY OF NIŠ** |
| **Course Unit Descriptor** | **Faculty** | Faculty of Electronic Engineering |
| **GENERAL INFORMATION** |
| Study program  | Electrical Engineering and Computing |
| Study Module (if applicable) | Electronics - Multimedia Technologies |
| Course title | Coding and Signal Compression |
| Level of study | x☐Bachelor ☐ Master’s ☐ Doctoral |
| Type of course | ☐ Obligatory x☐ Elective |
| Semester  | x☐ Autumn ☐Spring |
| Year of study  | 4. |
| Number of ECTS allocated | 5 |
| Name of lecturer/lecturers | Perić H. Zoran, Jovanović Ž. Aleksandra, Nikolić R. Jelena |
| Teaching mode | x☐Lectures ☐Group tutorials ☐ Individual tutorialsx☐Laboratory work x☐ Project work ☐ Seminar☐Distance learning ☐ Blended learning ☐ Other |
| **PURPOSE AND OVERVIEW (max. 5 sentences)** |
| The goal is to gain the theoretical and practical knowledge in the field of coding and signal compression. Student who passes the final exam has the knowledge about the signal compression techniques and is familiar completely with the principles of coding and compression of audio, speech and video signals. |
| **SYLLABUS (brief outline and summary of topics, max. 10 sentences)** |
| Source coding with fixed and variable codeword length. Introduction to linear predictive coding. Digital filter application in the construction of linear predictor. Parameters estimation of discrete signals for adaptive source coding. Adaptive differential PCM coding techniques. Lossless compression. Compression based on Huffman coding and arithmetic coding. Lempel-Ziv coding. Lossy compression. Scalar and vector quantization. Transform-coding based compression. Wavelet-based compression. Speech and audio compression. Video compression. |
| **LANGUAGE OF INSTRUCTION** |
| x☐Serbian (complete course) x☐ English (complete course) ☐ Other \_\_\_\_\_\_\_\_\_\_\_\_\_ (complete course)☐Serbian with English mentoring ☐Serbian with other mentoring \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **ASSESSMENT METHODS AND CRITERIA** |
| **Pre exam duties** | **Points** | **Final exam** | **points** |
| **Activity during lectures** | **5** | **Written examination** | **20** |
| **Practical teaching** | **25** | **Oral examination** | **20** |
| **Teaching colloquia** | **30** | **OVERALL SUM** | **100** |
| **\*Final examination mark is formed in accordance with the Institutional documents** |