Course Unit Descriptor

Study Programme: Biomedical engineering
Course Unit Title: Digital processing of biomedical signals
Course Unit Code: BM105A
Name of Lecturer(s): Lončar-Turukalo Tatjana, Redžek Aleksandar
Type and Level of Studies: Bachelor
Course Status (compulsory/elective): compulsory
Semester (winter/ summer): winter
Language of instruction: english
Mode of course unit delivery (face-to-face/distance learning): face-to-face
Number of ECTS Allocated: 4
Prerequisites: none
Course Aims:. The subject introduces digital signal processing fundamentals needed for understanding and implementation of biomedical signal processing tools. Students should learn characteristics of discrete signals and systems, signal analysis in frequency domain, digital filters and their application.
Learning Outcomes: Understanding of characteristics and differences among analog and digital signals and basic tools for their analysis. Usage and understanding of basic transformation of discrete signals. Ability to select , design and implement digital filters for specific application
Syllabus. - Introduction, overview of analog signals and systems, basic signal manipulation, correlation, convolution, Fourier transform - Discrete signal and systems, sampling theorem - Z transformation, Discrete-time Fourier transform, FIR and IIR systems - Discrete Fourier transform and spectrum estimation - Digital filters, design and implementation Lectures will illustrate applications on biomedical signals.
Required Reading:

Weekly Contact Hours: 2	**Lectures: 2**	**Practical work: 1**

Teaching Methods:
Lectures, exercises, lab sessions.

Knowledge Assessment (maximum of 100 points):

Pre-exam obligations	points	**Final exam**	points
Attendance			
Computer exercises			
Tests (4x)			