

COURSE DESCRIPTION CARD – SPECIMEN

Faculty of Mechanical Engineering									
Field of study	Biomedical Engineering							Degree level and programme type	Bachelor
Specialization/ diploma path								Study profile	
Course name	Digital Signal Processing							Course code	IS-FME-00140W
								Course type	
Forms and number of hours of tuition	L	C	LC	P	SW	FW	S	Semester	winter
	15	0	0	15	0	0	0	No. of ECTS credits	2
Entry requirements	Signals theory								
Course objectives	This course is strongly oriented toward both an introduction, and a synthesis of basic digital signal processing techniques.								
Course content	Introduction to digital signal processing. Discrete-time Fourier transform. Short time Fourier transform. Sampling. Properties of digital filters. Finite Impulse Response filters. Infinite Impulse Response filters. Adaptive filters. Wavelet transform.								
Teaching methods	Presentations.								
Assessment method	Lecture – written exam; project – project completion, presentation and discussion.								
Symbol of learning outcome	Learning outcomes							Reference to the learning outcomes for the field of study	
L01	Defines the basic notations							IBK_W15	
L02	Knows methods of acquisition and processing signals							IBK_W15	
L03	Recognize and describes signals							IBK_U19	
L04	Knows how to process signals							IBK_U19	
L05									
L06									
Symbol of learning outcome	Methods of assessing the learning outcomes							Type of tuition during which the outcome is assessed	
L01	Written exam							L	

L02	Written exam	L	
L03	Project completion	P	
L04	Project completion	P	
L05			
L06			
Student workload (in hours)		No. of hours	
Calculation	lecture attendance	15	
	participation in classes, project	15	
	preparation for classes, projects	5	
	working on projects, reports	10	
	participation in student-teacher sessions related to the classes/project	5	
	implementation of project tasks preparation for and participation in exam	10	
	TOTAL:		
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		30	1
Student workload – practical activities		30	1
Basic references	1. Schilling R.J., Harris S.L.: Introduction to digital signal processing using Matlab, Cengage Learning, 2012. 2. Mitra SK.: Digital Signal Processing: A Computer-Based Approach, McGraw-Hill, 2006.		
Supplementary references	1. Oppenheim A., and chafer R.: Discrete-Time Signal Processing, Prentice Hall, 1999. 2. The Student Edition of MATLAB, Prentice-Hall, New Jersey		
Organisational unit conducting the course	Biomedical Engineering	Date of issuing the programme	
Author of the programme	Jolanta Pauk	17.03.2021	

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar

