Óbuda University Bánki Donát Faculty of Mechanical and Safety Engineering	Insitute of Mechatronics and Vehicle Engineering

Subject title and code: **Programmable Control Circuits, BMWPVE6BNE** **Credits:** *2*

Full-time study 2025/26 *ac.* 2 *semester year*

The course is available at: mechatronical engineering

Supervised by: Dr. Nagy András **Instructors:** Dr. Nagy András

Prerequisite (neptun code): Digital Technics

Weekly number of lessons

Lecture: 2	Group seminar: 0	Lab: 2	Consultation:

Way of assessment: Exam (Written)

Online consultation *(in case it's required): ... (BBB link)*

Edu. goal: *The goal is to introduce students to programmable control circuits*

Schedule

Education week	**Topics**
1.	Introduction of the basics of digital technics
2.	Classification and structure of PLD circuits
3.	Application of the PLS-100 programmable logic device
4.	Application of the PAL16L8 programmable logic device
5.	Driving a 7-segment display
6.	Structure of FPGA and CPLD circuits
7.	Spring holiday
8.	Midterm Exam 1
9.	Architecture of the ESP32 microcomputer family
10.	Visit the Innoelectro exhibition
11.	ESP32 programming and application examples
12.	Midterm Exam 2
13.	Student's presentations
14.	Retakes

Mid-semester requirements

Test		Assignment to be submitted		Lab measurement	
amount	dates	amount	deadlines	amount	dates
2	8th and 12th week	1	13th week		

According to the HKR attendance of group seminars and lab exercises are mandatory.

Other requirements for participation in sessions not covered by the regulations and restrictions on substitutions:

Test		Assignment to be submitted		Lab measurement	
maximum points available	minimum score required to pass /test	maximum points available	minimum score required to pass / assignment	maximum points available	minimum score required to pass /lab
70points	35points	30points	15points	points	points

Total number of points achievable in semester: 100points				
Grading thresholds	**satisfactory** 50 % and above	**average** 63 % and above	**good** 75 % and above	**excellent** 88 % and above

Other evaluation criteria:	
Receive a signature denied entry:	
Required references:	Lecture presentations uploaded to Moodle
Recommended references:	Cem Unsalan, Bora Tar: Digital System Design with FPGA: Implementation Using Verilog and VHDL, ISBN: 978-1259837906
Quality assurance methods of the subject:	

Things, that are not included, can be found within the regulations of Óbuda University.