FACULTY:	Faculty of Electronics and Computer Science
Computer Science	Computer Science
ERASMUS COORDINATOR OF THE FACULTY:	robert.wirski@tu.koszalin.pl
E-MAIL ADDRESS OF THE COORDINATOR:	marcin.walczak@tu.koszalin.pl robert.wirski@tu.koszalin.pl
COURSE TITLE:	Laboratory of Programmable Digital Circuits
LECTURER'S NAME:	Dariusz Gretkowski, PhD
E-MAIL ADDRESS OF THE LECTURER:	dariusz.gretkowski@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	3
ACADEMIC YEAR:	2021/2022
SEMESTER: (W – winter, S – summer)	S
HOURS IN SEMESTER:	30
LEVEL OF THE COURSE: (1st cycle, 2nd cycle, 3rd cycle)	1st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Laboratory – 30h
LANGUAGE OF INSTRUCTION:	English
ASSESSMENT METHOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Continuous assessment
COURSE CONTENT:	Acquainting with the basic elements of VHDL language: types, constants, signals, design units, architecture, components, packages. Getting to know the software for the description and simulation of programmable circuits. Designing combinational circuits built of logic gates with the use of VHDL language structures. Design of combinational circuits: decoders, encoders and transcoders with the use of VHDL language structures. Designing arithmetic combinational circuits: adders, subtractors, multiplication and division circuits with the use of VHDL language structures. Designing sequential systems: flip-flops and registers with the use of VHDL language structures. Designing sequential systems: synchronous and asynchronous counters using VHDL language structures. Designing Moore and Mealy state machines using VHDL language structures. Designing keyboard reading and LCD converter using VHDL language structures. Designing an arithmetic unit (ALU) in VHDL. Design and testing of a simple VHDL processor. Designing a pipeline microprocessor in VHDL .
ADDITIONAL INFORMATION:	Requirements: basic knowledge of Boole's algebra, Finished courses: Computer Architecture and Operating Systems

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