STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Microprocessor systems**	Code **1010311361010324812**

Field of study **Electrical Engineering**	Profile of study (general academic, practical) **(brak)**	Year /Semester **3 / 6**

Elective path/specialty **Microprocessor's Control Systems in**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**

Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours Lecture: **15** Classes: **-** Laboratory: **15** Project/seminars: **15**	No. of credits **3**

Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**

Education areas and fields of science and art **technical sciences** **Technical sciences**	ECTS distribution (number and %**)** **3 100%** **3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	He knows the rules of operation and parameters of the basic elements of digital electronics.
2	**Skills**	He can use the knowledge of the basics of computer programming microprocessor systems.
3	**Social competencies**	Able to think and act in an entrepreneurial way in the area of ??designing microprocessors.

Assumptions and objectives of the course:

Become familiar with the operation of microprocessor systems and microcomputer. The acquisition of programming skills such systems in C

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. The student is able to describe the architecture, operation, and describe applications of microprocessors - [[K_W02 + K_W07 ++ K_W14 +++]]

2. The student is able to describe the basic design criteria microprocessors. - [K_W04 + K_W014+++]]

Skills:

1. The student is able to apply knowledge of technology processors to design control algorithms in real time - [- [K_U03 ++ K_U17 ++]]

2. Student can apply the selected runtime environment for microcontroller programming for specific applications - [[K_U03 ++ K_U07 ++]]

Social competencies:

1. Able to think and act in an entrepreneurial way in the area of ??designing microprocessors - [[K_K02 +]]

Assessment methods of study outcomes

Lecture

- Credit lecture preceded cash on laboratory classes and design,

Project classes and laboratory exercises:

- Test and rewarding knowledge necessary for the accomplishment of the problems in the area of ??tasks in the laboratory,

- Continuous assessment, rewarding gain skills they met the principles and methods

- Assess the knowledge and skills related to the implementation of laboratory exercises, evaluation reports performed exercise.

Get extra points for the activity in the classroom, and in particular for:

- Proposing to discuss additional aspects of the subject;

- The effectiveness of the application of knowledge when solving a given problem;

- Ability to work within a team practically performing the task detailed in the laboratory;

- Comments relating to the improvement of teaching materials;

- Aesthetic diligence reports and tasks? in the framework of self-study.

Course description

Architecture INTEL MCS51 microcontroller family. Design Tools (runtime) for controllers MCS51 family and derivatives (SIEMENS, INFINEON). Advanced microcontrollers MCS51 family derivatives. Architecture microcontroller family ADuC8xx Analog Devices and tool runtime for her. Principles of designing control algorithms objects in real time. The specificity of programming in C microprocessors. Support systems O on the structure of microcomputer systems with particular emphasis on A / D and D / A. Methods for serial digital systems.

Basic bibliography:

1. P. Misiurewicz, Układy mikroprocesorowe, WNT, Warszawa, 1983.

2. T. Starecki, Mikrokontrolery 8051 w praktyce, Wydawnictwo BTC, 2002.

3. J. Majewski, Programowanie mikrokontrolerów 8051 w języku C ? pierwsze kroki.

Additional bibliography:

1. Materiały techniczno-informacyjne dotyczące mikrokontrolerów rodzin ADuC8xx dostępne na stronie www.analog.com

2. P. Hadam, Projektowanie systemów mikroprocesorowych, Wydawnictwo BTC, 2004

Result of average student's workload

Activity	Time (working hours)

Student's workload

Source of workload	hours	ECTS
Total workload	55	3
Contact hours	30	2
Practical activities	30	3