POZNAN UNIVERSITY OF TECHNOLOGY

EUROPEAN CREDIT TRANSFER AND ACCUMULATION SYSTEM (ECTS)

pl. M. Skłodowskiej-Curie 5, 60-965 Poznań

COURSE DESCRIPTION CARD - SYLLABUS

Course name
Programming of on-board systems

Course

Field of study	Year/Semester
Aerospace Engineering	1/1
Area of study (specialization)	Profile of study
--------------------	general academic
Level of study	Course offered in
Second-cycle studies	Polish
Form of study	Requirements
full-time	compulsory

Number of hours

Lecture	Laboratory classes	Other (e.g. online)
30	-----------	----------
Tutorials	Projects/seminars	
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Number of credit points

2

Lecturers

Responsible for the course/lecturer:

dr inż. Przemysław Grzymisławski

email:
przemyslaw.grzymislawski@put.poznan.pl

tel. +48 61 665 22 01

Wydział Inżynierii Środowiska i Energetyki

ul. Piotrowo 3, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Knowledge: The student has basic knowledge in programming using the C language

Skills: The student can deal with specific problems appearing during programming of microcontrollers; can find information in literature or the internet and use it to solve your problem

Social competencies: Student is able to define priorities that are important in solving the tasks set before him. The student demonstrates independence in solving problems, acquiring and improving his knowledge and skills.

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Course objective

After completing the course the student is able to recognize the on-board systems and program them correctly and test their operation in simulated conditions.

Course-related learning outcomes

Knowledge

Student has detailed knowledge related to selected issues in the field of construction of manned and unmanned aircraft, in the field of on-board equipment, control systems, communication and registration systems, life support systems, automation of particular systems - K2A_W03

Student has detailed knowledge of programming languages used in programming engineering applications, databases, on-board systems, and network applications - K2A_W10

Skills

Student is able to communicate using various techniques in a professional environment and other environments using a formal record of construction, technical drawing, concepts and definition of the scope of the studied field of study - K2A_U02

Student has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, didactic programs, e-books - K2A_U03

Student can obtain information from literature, the Internet, databases and other sources. Can integrate the information obtained and interpret conclusions and create and justify opinions - K2A_U04

Social competences

Student understands the need to learn throughout life; he can inspire and organize the learning process of other people - K2A_K01

Student is ready to critically evaluate the knowledge and content received, recognize the importance of knowledge in solving cognitive and practical problems and consult experts in the case of difficulties in solving the problem - K2A_K02

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Written exam

Programme content

Definitions of basic concepts: programming language, program, module and on-board system; development of software for on-board systems; structure and syntax in a high-level language; environments supporting the programming of on-board systems; basic instructions and operators in programming; declaring and calling functions, using libraries; object-oriented programming; exception handling; interface programming; software testing

Teaching methods

Presentation, discusion

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Bibliography

Basic

Programowanie w języku ANSI C: elementy języka z przykładami; Natalia Strzelecka, Wojciech Zając; Wydawnictwo Akademii Morskiej; 2006

Programowanie mikrokontrolerów 8051 w języku C w praktyce; Jacek Bogusz; wydawnictwo BCT; 2005

Programowanie mikrokontrolerów 8051 w języku C: pierwsze kroki; Jacek Majewski; wydawnictwo BCT; 2005

Mikrokontrolery AVR – język C: podstawy programowania; Mirosław Kardaś; wydawnictwo Antel; 2013

Programowanie systemów sterowania, narzędzia i metody; Dariusz Bismor; PWN; 2017

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	34	1,4
Student's own work (literature studies, preparation for tests/exam) [1]	16	0,6

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[1] delete or add other activities as appropriate