COURSE DESCRIPTION CARD - SYLLABUS

Course name
Propulsion system steering

Course

Field of study
Aerospace Engineering

Year/Semester
1 / 2

Area of study (specialization)
Aeronautical Engineering

Profile of study
general academic

Level of study
Second-cycle studies

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars
15

Number of credit points

2

Lecturers

Responsible for the course/lecturer:
dr inż. Wojciech Prokopowicz

wojciech.prokopowicz@put.poznan.pl

Wydział Inzynierii Środowiska i Energetyki

Responsible for the course/lecturer:
mgr inż. Wiktor Hoffmann

wiktor.j.hoffmann@doctorate.put.poznan.pl

Wydział Inzynierii Środowiska i Energetyki

Prerequisites

Basic knowledge in operation of turbine and reciprocating engine based powerplants used in aeronautical engineering. Student has basic knowledge in automatic regulation and steering and PID controllers

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

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

Course objective

To provide specialistic knowledge in steering of propulsion systems

Course-related learning outcomes

Knowledge

Student has ordered and supplemented with theoretical basis knowledge in subjects of manual and automatic control of aeronautical propulsion systems. Student has basic knowledge of automation systems, microcontrollers, control algorithms, automation and industrial robots, electronic navigation systems used in machines and wired and wireless communication systems in local computer networks used in aviation and aeronautics. Student has ordered, supplemented with theoretical basis knowledge in the field of on-board equipment: as well as on-board and ground-based electronic communication systems, remote sensing systems, observation systems, satellite navigation systems

Skills

Student is capable of designing a simple control system for and aicraft engine. 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. Student has the ability to self-study using modern teaching tools, such as remote lectures, websites and databases, didactic programs, e-books. 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

Social competences

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

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Exam (Lecture), Project assesment (Project)

Programme content

- Reminder: operation on aeronautical engines

- Basics of PID automation systems

- Analog and digital engine control systems

Teaching methods

Lecture and project assesment

Bibliography

Basic

Balicki W., Szczeciński S. i inni (2010, 2012). Lotnicze silniki turbinowe. Konstrukcja, eksploatacja, diagnostyka.

Rolls-Royce plc. (1996) The Jet Engine

Additional

Breakdown of average student's workload

	Hours	ECTS
Total workload	60	2,0
Classes requiring direct contact with the teacher	36	1,2
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	27	0,9

[1] delete or add other activities as appropriate