COURSE DESCRIPTION CARD - SYLLABUS

Course name
General knowledge about the aircraft 1 [S1Lot2>OWoS1]

Course

Field of study
Aviation

Year/Semester
1/2

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
Polish

Form of study
full-time

Requirements
compulsory

Number of hours

Lecture
15

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

Wojciech Muszyński

Lecturers

Prerequisites

The student starting this subject should have basic knowledge of airframe assemblies, control systems, hydraulic, pneumatic, fuel, air-conditioning and emergency systems. He should also have the ability to apply the scientific method in solving problems and be ready to cooperate within a team.

Course objective

To acquaint the student with the construction of the aircraft, its executive teams.

Course-related learning outcomes

Knowledge:
1. has ordered, theoretically founded general knowledge covering key issues in the field of technical thermodynamics, fluid mechanics, in particular aerodynamics
2. has basic knowledge of the vocabulary used in English to describe mathematical operations and the data presented in the diagram / graph. Has knowledge of formulating a text in English explaining / describing a selected specialist issue, has basic knowledge of the vocabulary used in English to describe the technological support of air communication, flight control systems, safety procedures at the airport related to the presence of animals, aircraft control surfaces, maneuvers performed by plane
3. has detailed knowledge related to selected issues in the field of construction of aircraft propulsion

systems and the design of their components as well as their life cycles and principles of technical description

Skills:
1. is able to properly select materials for simple aviation structures, and can indicate the differences between the fuels used in aviation
2. is able to communicate using various techniques in the professional environment and other environments using the formal notation of construction, technical drawing, concepts and definitions of the scope of study
3. student can use theoretical probability distributions. Student is able to analyze and interpret statistical data. Student is able to use the methods and tools of mathematical statistics in engineering practice

Social competences:
1. understands that in technology, knowledge and skills very quickly become obsolete

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Lecture:
- assessment of knowledge and skills demonstrated on the written test - 1.5 hour

Programme content

Lecture:
System designe, loads, stresses, maintenance, fatigue and corrosion. Attachment methods and detecting the development of faulty attachments. Materials, structural components, loads, stresses and aeroelastic vibrations (flutter). Flight controls, system components, design, operation, indications and warnings, degraded modes of operation, jamming. Fly-by-wire (FBW) control systems. Electrics: general, definitions, basic applications: circuit breakers, logic circuits.

Course topics

PART - 66 (THEORY - 7.5 hours)
MODULE 5. SYSTEMS OF ELECTRONIC INSTRUMENTS OF DIGITAL TECHNOLOGIES
5.13 Software Management Control
Awareness of limitations, airworthiness requirements and possible catastrophic consequences of unapproved ones changes to the software.

Teaching methods

1. Lecture: multimedia presentation, illustrated with examples given on the board.

Bibliography

Basic:
1. Cichosz E., Konstrukcja i praca płatowca, WAT, Warszawa 1986 r.
2. Olejnik A., Budowa statków powietrznych, WAT 1984 r.
3. Błaszczyk J., Konstrukcja samolotów, cz.I., Obciążenia zewnętrzne, WAT, Warszawa 1984 r.
4. Danilecki S., Projektowanie samolotów, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2000 r.
5. Polak Z., Rypulak A., Bilski J., Awionika, przyrządy i systemy pokładowe, WSOSP, Dęblin 1999 r.
6. Spitzer Cary R., The Avionics Handbook, AvioniCon Inc, Williamsburg 2001 r.
7. Kazana J., Lipski J., Budowa i eksploatacja pokładowych przyrządów lotniczych, WKiŁ, Warszawa 1983 r.

Additional:
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Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	10	0,50