



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Measuring instruments in aviation II

Course

Field of study

Aerospace Engineering

Area of study (specialization)

Onboard systems and aircraft propulsion

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

3/4

Profile of study

general academic

Course offered in

polish

Requirements

elective

Number of hours

Lecture

15

Laboratory classes

15

Other (e.g. online)

Tutorials

Projects/seminars

Number of credit points

2

Lecturers

Responsible for the course/lecturer:

dr inż. Michał Gołębiewski

Responsible for the course/lecturer:

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Wydział Inżynierii Środowiska i Energetyki

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Prerequisites

Students should have basic information about thermodynamics and fluid mechanics.

Course objective

The aim of the course is to familiarize students with the basics of measurement systems in aviation based on pressure and temperature measurements.

Course-related learning outcomes

Knowledge

1. has knowledge in physics, covering the basics of classical mechanics, optics, electricity and magnetism, solid state physics, thermodynamics, necessary to understand issues in the field of the



theory of construction materials and materials science, theory of machines and mechanisms, theory of drives and mechatronic systems

2. has basic knowledge of measurement methods, characteristics of measuring instruments and their classification according to purpose, principles of operation and features, knows sensors and measuring transducers, registration of results, measurement systems, measurement errors - the influence of external factors, statistical analysis of measurement results, principles of organization of an active experiment and passive

3. Has extended knowledge of technical vocabulary, in particular specialized terminology used in the fields of science and technology related to aviation engineering

Skills

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

2. can obtain information from literature, the Internet, databases and other sources. Is able to integrate obtained information, interpret and draw conclusions from them

3. can use formulas and tables, technical and economic calculations using a spreadsheet and run a simple relational database

Social competences

1. can properly prioritize the implementation of tasks specified by him or others based on available knowledge

2. Understands the need for critical assessment of knowledge and continuous learning

3. can inspire and organize the learning process of others

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

lecture: assessment of the student's knowledge and skills on test with 5 questions regarding the content presented during classes; continuous assessment of skills and competences during each class by conducting discussions on current problems related to the use of gaseous fuels

laboratory: assessment of knowledge on the basis of a test in each class and support for the preparation of reports

Programme content

Devices for measuring temperature and pressure and systems based on them for measuring speed, altitude, mass flow

Teaching methods

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



Laboratory: performing laboratory exercises

Bibliography

Basic

Z. Polak, A. Rypulak "Awionika, przyrządy i systemy pokładowe"

T. Grzegorzczak, R. Witkowski "Lotnicze systemy pomiarowe. Czujniki"

B. Żółtowski, W. Józefik "Diagnostyka techniczna elektrycznych urządzeń przemysłowych"

E. Tuliszka "Mechanika Płynów"

J. Szargut "Termodynamika Techniczna"

Additional

S. Niziński, R. Michalski "Diagnostyka obiektów technicznych"

Breakdown of average student's workload

	Hours	ECTS
Total workload	54	2,0
Classes requiring direct contact with the teacher	34	1,5
Student's own work (literature studies, making presentations) ¹	20	0,5

¹ delete or add other activities as appropriate