COURSE DESCRIPTION CARD - SYLLABUS

Course name

PO2: Computerization of design and simulation - CAD systems in digital prototyping

Course

Field of study

Electromobility

Area of study (specialization)

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/4

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:

Phd Eng. Krzysztof Kowalski

email: krzysztof.kowalski@put.poznan.pl

phone. 616652396

Faculty of Control, Robotics and Electrical Engineering

street Piotrowo 3A, 60-965 Poznań

Responsible for the course/lecturer:

Prerequisites

Knowledge of basic issues in the field of electrical engineering, electrodynamics, analytical geometry and the operation of the WINDOWS system. Knowledge of the principles of technical constructions on a general level. The ability to effectively self-educate in a field related to the chosen field of study.

Course objective

Acquiring the ability to correctly model elements of spatial structures; implementation of selected

stages of the design process. Acquiring the skills of computer mapping and visualization of technical constructions in two and three-dimensional systems.

Course-related learning outcomes

Knowledge

Has a structured and theoretically based general knowledge of computer science key issues for the electromobility area, including programming and the use of IT tools in modeling, simulation and design.

Skills

Is able to design, develop documentation of an engineering task, in accordance with a given specification and using appropriate methods, techniques, tools and materials, simple electrical and electronic systems and devices used in electric and hybrid vehicles as well as infrastructure intended for their power.

On the basis of technical documentation, using appropriate methods, tools and materials, he is able to make and start up typical electrical and electronic systems and devices used in electromobility.

Social competences

Understands the importance of improving professional, personal and social competences; is aware that knowledge and skills in the field of electromobility are evolving rapidly.

Understands the importance of knowledge in solving problems in the field of electromobility; is aware of the necessity to use the knowledge of experts when solving engineering tasks beyond their own competences.

He can think and act in an entrepreneurial way in the field of electromobility.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Laboratoty:

The skills acquired during the laboratory classes are verified on the basis of current tasks carried out during the classes and control work. Passing threshold: 50% of points.

Programme content

Laboratory:

Three-dimensional problems in a computer record of a technical structure. Basic tools for modeling three-dimensional objects. Parametricity in digital prototyping of technical objects. Computer representation of machine parts. Basic elements and parametric design tools in AutodeskInventor. Creating and editing a digital prototype of a technical object. Graphical representation of machine parts, automation in the creation of technical documentation, execution and assembly drawings.

Teaching methods

Laboratory:

Design exercises using the known modeling and visualization tools of two and three-dimensional objects. Implementation of parametric projects using Inventor.

Bibliography

Basic

1. FolęgaP.,Wojnar G., Czech P.; Zasady zapisu konstrukcji Maszyn, Wydawnictwo Politechniki Śląskiej, Gliwice 2014.

2. Tremblay T., Autodesk Inventor 2014. Oficjalny podręcznik, Helion, Gliwice 2014

3. Stasiak F., Zbiór ćwiczeń: Autodesk Inventor 2018, EkspertBooks 2018.

Additional

1. Autodesk INVENTOR online resource.

Breakdown of average student's workload

	Hours	ECTS
Total workload	50	2,0
Classes requiring direct contact with the teacher	30	1,5
Student's own work (literature studies, preparation for laboratory classes, implementation of project tasks) [1]	20	0,5

[1] delete or add other activities as appropriate