KARTA PRZEDMIOTU

Nazwa przedmiotu: ***Computer Engineering Graphics (ZIPAOZ>SI1CEG22O)***
Nazwa w języku polskim:
Nazwa w jęz. angielskim:

Dane dotyczące przedmiotu:

Jednostka oferująca przedmiot: Wydział Organizacji i Zarządzania
Przedmiot dla jednostki: Politechnika Śląska

Domyślny typ protokołu dla przedmiotu:

ZAL

Język wykładowy:

angielski

Skrócony opis:

The purpose of the course is to acquire structured knowledge and skills in the development of drawing documentation using methods and principles, including the acquisition of social competence in communicating technical information.

Opis:

Structured knowledge and skills in the development of drawing documentation using methods and principles, including the acquisition of social competence in communicating technical information. Basic methods, techniques, tools and materials used in solving simple engineering tasks of creating and processing technical documentation in the product life cycle.

Description of classes conducted:
LECTURES:
Lecture in the form of oral communication, supplemented by presentations (text, images, videos).

Lecture content:
1. Representation of internal and external structural features by axonometric and rectangular projection methods. First and third angle projection.
2. Views and sections. Layout of projections on drawing.
3. Dimensioning . Types of dimensions. Arrangement of dimensions on drawings. Linear dimensions. Dimensioning of diameters and arcs. Dimensioning of angles.
4 Description of the external macrostructure and microstructure : designations of roughness and waviness. Roughness parameters.
5. Tolerances and fits. Tolerancing of linear dimensions. Tolerance field. Deviations. Tolerancing of angular dimensions. Fits. Marking on drawings. Tolerancing of shape and position. Complex tolerances.
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PROJECT:
Overview in the form of oral communication, supplemented by presentations (text, images, videos) of the topic implemented in class. Individual consultation of completed drawing works.

Execution of hand-drawn and/or computerized design work in the field of
1. Axonometric projection 3h
2. Rectangular projection 4h
3. Views and sections 4h
4. Dimensioning, 4h
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LABORATORY:
Discussion in the form of oral delivery, supplemented by presentations (text, images, videos) of the topic implemented in class. Real-time demonstration.

Familiarization with selected CAD design aid program(30h).
1. Overview of the graphical interface of the selected CAD design support program.
2. Customization of the program's interface. Configuration of the working environment.
3. Dimensioning - basics, principles of correct dimensioning.
4. Defining a sketch. Undefined sketch, completely defined and redefined sketch, sketch with dimensional collisions.
5. Assigning and editing geometric relations. Creating basic parameterized geometric objects.
6. Dimensioning a sketch. Mirroring and arraying at the sketch level.
7. Solid objects.
8. Solid operations: straight draw, path draw, profile draw, draw by rotation.
9. Mirroring, linear and circular array for operations. Symmetrical objects. Creating mirror images of parts.
10. Making executive documentation of simple geometric elements in European rectangular projection
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Attendance at classes in accordance with the study regulations.
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FORM OF ACTIVITY (Hours/ECTS points)
Number of hours of activity, regardless of its form 60/2
Students' own work 1- Theoretical preparation for lab. and project classes 60/2
Students' own work 2 - Drawing works at home 60/2
Total: Number of ECTS credits allocated to the classes 180/6

Efekty uczenia się:

KNOWLEDGE: knows and understands

SOCIAL COMPETENCE: is ready for
K1A _W3 - Basic engineering processes and technologies in the life cycle of technical equipment, objects and systems and ways of solving typical engineering tasks, particularly in relation to the organization of production processes and production management. (Lecture)

K1A _W7 - Fundamental problems of contemporary civilization relevant to the production engineering. (Lecture)

SKILLS: is able to
K1A _U4 - When identifying and formulating specifications for engineering tasks and solving them:
-select and use analytical, simulation and experimental methods, including computer-aided methods,
-recognize their system and non-technical aspects, including ethical aspects
-make preliminary economic assessment of the proposed solutions and engineering actions taken,
-analyze technology transfer and innovation. (Lab., Proj.)
K1A _U7 - Work individually and in a team, assuming different roles in it, plan and organize this work, as well as interact with other people as part of teamwork (also of an interdisciplinary nature) using specialist terminology and modern information and communication technologies, and take part in the debate. (Lecture, Lab., Proj.)

SOCIAL COMPETENCE: is ready for
K1A _K1 - Critical evaluation of knowledge and received content, recognition of the importance of knowledge in solving cognitive and practical problems, and consulting experts in the event of difficulties in solving problems on their own. (Lecture, Lab., Proj.)

Metody i kryteria oceniania:

LECTURE: Positive grade for the lecture will be given by taking a test with single or multiple choice questions. A passing grade (3,0) requires scoring 50% of the points being the sum of the points for correct answers.

LABORATORY: Credit for laboratory classes will be given by solving drawing tasks in the form of a credit test colloquium.

PROJECT: The project class will be credited by solving drawing tasks according to the guidelines indicated by the instructor teacher.

The final grade is the average of grades from all forms of classes.

Przynależność do grup przedmiotów w cyklach:

Opis grupy przedmiotów	Cykl pocz.	Cykl kon.
Przedmioty obowiązkowe ang. semestr 1 (ZIPAOZ>SI-1-22-O)	2022/2023-Z	2022/2023-L
Przedmioty obowiązkowe ang. semestr 1 (ZIPAOZ>SI-1-23-O)	2023/2024-Z	

Punkty przedmiotu w cyklach:

<bez przypisanego programu>

Typ punktów	Liczba	Cykl pocz.	Cykl kon.
Europejski System Transferu Punktów (ECTS)	6	2022/2023-Z	