COURSE TITLE: Engineering Graphics and Design
Institute/Division: Department of Automatic Control & IT / Faculty of Electrical and Computer Engineering

Course code: EGD

Erasmus subject code: 06.6 Manufacturing Sciences

Number of contact hours: 45

Course duration: 1 semester

ECTS credits: 6

Course description: Course covers basic information about engineering design based on examples of two and three dimensional geometry. During the course students will develop the ability to visualize shape and form in three dimensions with a high degree of fluency. The main goal of this course is to show how to create original drawings and read the content of drawings without ambiguity.

Course objectives: Product development and computer-aided design. Principles of first and third angle orthographic projection. Three dimensional illustrations using isometric and oblique projection. Sections and sectional views. Dimensioning principles. Screw threads and conventional representations. Limits and fits. Geometrical tolerancing and datums. Springs, cams and gears. Welding and welding symbols.

Prerequisites and additional requirements:

Basic knowledge about engineering graphics and design. Basic knowledge on how to read engineering drawings. A basic knowledge of the essential elements of English grammar and mechanics.

Description of learning outcomes for module:

Social competence: the course requires team work and active participation

Skills:

On successful completion of the Engineering Graphics and Design course you will be able to:

- Read engineering documentation
- Create 2D documentation of products
- Create 3D model of products
- Create 3D assembly of mechanisms

- Crate a working visualization od mechanisms work
- Create a rendering and visualization of products
- Create models of prototypes ready for 3D printing.

Knowledge:

On successful completion of the Engineering Graphics and Design course you will be able to:

- know and understand the conventions and the methods of engineering drawing.
- interpret engineering drawings using fundamental technical mathematics.
- construct basic and intermediate geometry.
- improve visualization skills so that you can apply these skills in developing new products.
- improve technical communication skill in the form of communicative drawings.
- comprehend the theory of projection.

Assessment method:
For laboratory exercises assessment will be made after finishing given exercises and finishing bigger final course exercise. (practical assessment method)

- **Lecturers:** Łukasz Ścisło, E-3
- **Contact person:** Łukasz Ścisło, lscislo@pk.edu.pl

Course type: lectures (10h), laboratory (30h), project (5h)

Applications:

- AutoCad – for 2D drawings
- Creo (Pro/Engineer) or Inventor for 3D drawing

Literature:

- Manual of Engineering Drawing by P Colin H Simmons
- Elementary Engineering Drawing by N.D.Bhatt
- Instruction for AutoCAD program