
Course title: INTEGRATED MANUFACTURING METHODS

ECTS credit allocation (and other scores): 2

Semester: autumn

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Engineering and technology

Language: English

Number of hours per semester: 30

Course coordinator/ Department and e-mail: Jarosław Szuszkiewicz/jerry@uwm.edu.pl

Type of classes: classes and lectures

Substantive content

CLASSES: The purpose of classes is to teach students to write G-code procedures for lathes, which means 2D structures. The learning process includes: creation of a starting material, tool selection for treatment purposes and writing an exact G-code.

The second main purpose of the classes is to familiarize students with the CATIA v.5 package. Students learn to create basic shapes of 3D models as solid bodies and generative shape design bodies – thin walls models.

Students learn how to generate CAM procedures for milling tools. They learn how to manufacture models with pockets, pads, holes, grooves.

LECTURES: Computer Integrated Manufacturing Systems characterize with high level of automation of technological and information processes. The lectures bring knowledge on two main issues: learning to write G-code procedures and learning to operate the CATIA package, as one of the most versatile and complex CAD/CAM programs.

G-code learning is realized by using ZERO software and concentrates on lathe procedures.

Learning the CATIA package concentrates on operating the basic abilities to build a 3D objects, including simple shapes and assembly drawings of machine parts. CAM issues concerning milling are discussed.

Learning purpose: The main purpose is to teach students to write G-code and operate CATIA package.

On completion of the study program the graduate will gain:

Knowledge: Student has an extended knowledge on manufacturing processes and organization of production processes

Skills: Student efficiently uses information techniques appropriate to realize engineering tasks

Social Competencies: Student is capable to comprehensively analyze and effectively realize assigned tasks.

Basic literature:

- 1) Komputerowe wspomaganie wytwarzania, Miecielica M., Kaszkiel G., Mikom
- 2) Catia, Narzędzia i Moduły, Michaud M., Helion 2012
- 3) Chlebus E., Techniki komputerowe CAX w inżynierii produkcji, WNT Warszawa 2000,
- 4) Stryczek R., Pytlak B., Elastyczne programowanie obrabiarek, PWN 2011,
- 5) Kosmol J., Automatyzacja obrabiarek i obróbki skrawaniem, WNT, Warszawa 2000,

6) Karpiński T., Inżynieria produkcji, WNT Warszawa 2009

Supplementary literature:

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 32

Student's independent work: 19