Faculty of Technical Sciences

Course title: COMPUTER AIDED MANUFACTURING

ECTS credit allocation (and other scores): 1.5

Semester: autumn

Level of study: ISCED-6 - first-cycle programmes (EQF-6)

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: Students are familiarized with basics of tools used in turning and milling. They learn basics of turning. They are taught of operation of ZERO OSN package. They learn how to create a model of a starting material, how to choose proper tools for details presented in technical drawings. Finally, students learn procedures needed to write a key structure of the ZERO program - G-code. Students are familiarized with operation of a CNC machine, namely a milling machine. They go through all the steps. Finally, they check in the real conditions a certain G-code prepared prior to getting to know the CNC milling machine.

LECTURES: Students learn basic technical solutions applied in CNC machine tools. The main purpose is to teach students ability to write G-code, used to control CNC machine tools. They are taught to operate ZERO-OSN software being a production and didactic program. They learn how to perform straight moves and how to make interpolations. They also learn to use shape cycles. Students learn basics of machining in the context of production processes. They are also familiarized with basics of CATIA package as an introduction to full course of CATIA in future courses.

Learning purpose: Passing knowledge concerning programming CNC machine tools. Activities prepare to using advanced machines applied in industry.

On completion of the study program the graduate will gain:

Knowledge: Student knows basic terms and has knowledge on CNC machine tools.

Skills: Student is able to apply the computer methods to solve engineering tasks on parts production

Social Competencies: Student is capable to cooperate with other co-workers of the same team

Basic literature:

1) Miecielica M., Kaszkiel G., Komputerowe wspomaganie wytwarzania, Mikom

2) Praca zbiorowa, Podstawy obróbki CNC, REA s.j., 2013,

3) Praca zbiorowa, Podstawy programowania CNC – Toczenie, REA s.j., 2013,

4) Praca zbiorowa, Podstawy programowania CNC – Frezowanie, REA s.j., 2013,

5) Habrat W., Obsługa i programowanie obrabiarek CNC, KaBe s.c. Wydawnictwo i handel książkami, 2007,

6) Grzesik W. , Niesłony P., Bartoszuk M., Programowanie obrabiarek NC/CNC, WNT, Warszawa, 2010

Supplementary literature:

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 32

Student's independent work: 6.5