SYLLABUS

1. Course title:

CAD/CAM Systems

2. Code:

3. Cycle of study:

1

4. ECTS credits:

3

5. Type of course:

○ Mandatory ◉ Elective

6. Prerequisites:

7. Class restrictions:

8. Duration / semester:

1 7

9. Weekly contact hours:

9.1. Lectures: 2

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 1

10. Faculty:

Faculty of mechanical engineering

11. Department/study program:

Production engineering

12. Lecturer:

Prof.Ph.D Muhamed Mehmedović

13. Lecturer's e-mail:

muhamed.mehmedovic@untz.ba

14. Web site:

http://mf.untz.ba/

15. Course aims:

The basis aims of this course realization are:
to introduce students with CAD system elements and CAM System elements,
to introduce students with the possibilities of machining processes planning by using the CAD/CAM Systems,
to introduce students with CAD/CAM Systems application steps and principles as well as with potential problems during importing the CAD data in to the CAM,
to introduce students about CAD/CAM Systems application from the aspect of the CNC Lathes programming and CNC Mills programming,
that students recognize importance and benefits of CAD/CAM systems application in industrial practice.

16. Learning outcomes:

At the end of this course, the students should be able to:

Understand the problems during importing the CAD data in to the CAM and to find adequate solutions,
Make 3D of product model, plan of machining processes as well as simulation of machining process,
Generate numerical programs for machining as simple as well as complex parts by using CNC Lathes and CNC Mills, and everything of that for different types of CNC control system,
Simulation and optimization of the tool path with the goal of the machining time reduction,
Understand possibilities of CAD/CAM Systems application for machining of more complex parts by using CNC machining centers.

17. Course content:

Introductions. Basic definitions and terms.
CAD System elements.
CAM System elements.
CAD/CAM interfaces.
CAP connection between CAD and CAM systems.
Role, importance and application possibilities of CAD/CAM Systems.
Basic characteristics of modern CAD/CAM software .
CNC machines programming by CAD/CAM system application.
CAD modeling and its connection with creation of programs for CNC machining.
Tool set up and manipulation by work pieces and tools.
Planning and machining of cylindrical and prismatic parts by CAD/CAM application.
Planning and machining of more complex parts by CAD/CAM application - multi axis machining systems.
Path generating for rapid prototyping.
CAD/CAM systems in to the medical engineering.

18. Learning methods:

The following methods are planned for successful learning:

- Lectures with the use of multimedia equipment and learning technique with active participation and student discussions,
- Laboratory exercises,
- Graphic papers preparation and working

19. Assessment methods:

Activities during lectures realization and exercises realization,
Semester's paper/homework,
Partially exams during lectures realization,
Final exam at the end of course,
Remedial exams.

Above mentioned assessments are taken into account as a cumulative exam only if the result is positive after each partial exam, and if its portion is more then 50% of the total of required knowledge and skills of this activities. The exam is successful finished if student has minimum 54% of cumulative points.

20. Assessment components:

Obligations of the student	Points
Presence and activities during course	5
Graphic papers	10
Tests from the theory	20
Tests from the exercises	20
Final examination	45

21. Required reading list:

- McMahon, Browne: CAD CAM, Addison-Wesley 2003 godina.
- E. A. Nasr: Computer-Based Design and Manufacturing, Springer 2006.

22. Web sources:

23. Applicable starting from the academic year:

2015/16

24. Adopted in the Faculty/Academy session: