

Code	II.2.
Course Title (English)	Engineering Design II – CAD
Course Title (Polish)	Konstrukcja i eksploatacja maszyn oraz grafika inż. II – projektowanie inżynierskie - inf. podstawy projektowania
Credits	6 ECTS

*Language of instruction*     **English**

*Type of studies*                BSc studies

*Unit running the programme*                Institute of Mechanics and Machine Design Fundamentals

*Course coordinator and academic teachers*     **Bogdan Posiadała, prof.**, Bogdan Posiadała, Assoc. prof., (Lec.), Dawid Cekus, Ph.D, (Lab.), Roman Wilczak, Ph.D., (Lab.)

*Form of classes and number of hours*

Semester	Lec.	Tut.	Lab.	Proj.	Sem.	Credit points
2	15e	-	45	-	-	6

*Learning outcomes*

The course is a foundation to techniques that allow students:

- to work with exemplary CAD software used in design departments of various companies,
- to know general background of 3D modelling,
- to know data exchange standards between different 3D modelling and simulation software

*Prerequisites*

Basic knowledge of computer operating and technical documentation standards

*Course description*

LECTURE

1. Review of 3D Modelling software.
2. Basics of 3D modelling and 3D data standards.
3. Fundamentals of 3D modelling in exemplary CAD system (e.g. AutoCAD)
4. 3D modelling with exemplary CAD system (e.g. AutoCAD)
5. Visual LISP editor of the AutoCAD system:
6. Exemplary realisations of engineering drawings by LISP applications.
7. Transfer of data to another computer software.
8. Creating technical documentation with exemplary CAD system (e.g. AutoCAD)

TUTORIALS

Not applicable

LABORATORY

1. Basics of 3D modelling in AutoCAD,
2. Creating of 3d models using AutoCAD,
3. Preparation of assemblies in Visual LISP
4. Creating of drafts of exemplary technical objects.
5. Final preparation of a project selected by student or given by lecturer
6. Presentation of final project

PROJECT

Not applicable

SEMINAR

Not applicable

*Form of assessment*

Printed reports of projects, exam

*Basic reference materials*

1. [James H. Earle.: Engineering Design Graphics, Addison-Wesley Publishing Company, 1990.](#)

*Other reference materials*

For Polish-speaking students:

1. Pikoń A.: AutoCAD 2000. Helion, Warszawa 2000.
2. Świszczowski S.: AutoLISP. Dostosowanie programu AutoCAD do potrzeb użytkownika, Wydawnictwo MIKOM, Warszawa, 2001.
3. Head G. O., Head J. D.: AutoCAD 1000 Tips & Tricks, czyli sztuczki i chwyt, Wydawnictwo Helion, Gliwice, 1997.
4. Dudek M.: AutoLISP – kurs praktyczny, Wydawnictwo Helion, Gliwice, 1997.
5. Frenki D.: LSP i DCL w przykładach, Wydawnictwo Helion, Gliwice, 2000.
6. Posiadała B. (red.), Geisler T., Policiński J., Sochacki W.: Rysunek techniczny w AutoCADzie, *Wydawnictwo Politechniki Częstochowskiej*, Częstochowa, 2002.
7. Kazmierczak G., Pacuła B., Budzyński A. Solid Edge. Komputerowe wspomaganie projektowania. Helion, Gliwice 2004.

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Average student workload (teaching hours + individ. )	10 hours of teaching hours + 3 hours of individual work per week
Remarks:	