

Óbuda University Bánki Donát Mechanical and Safety Engineering Faculty		Institute of Material Science and Technology Department of Manufacturing Technology		
Course title and code: Fundamentals of CAD/CAM modelling BGECAE4BNE Credits: 4 Full-time, 20120/2021 academic year. 2. Semester				
Faculties in which the subject is taught: Bánki Donát Mechanical and Safety Engineering Faculty		Ea: lásd Ütemezés Gy: lásd Ütemezés		
Lecturer instructor:	Dr. Czifra György mestertanár	Istructors:	Dr. Czifra György, Varga Bálint	
Prerequisites conditions (code)				
Hours per week:	Lecture: 2	Practise 0	Laboratory: 2	Consultation:
Semester closing way: (required)		é – practice mark		
Curriculum				
The objective of the course: Providing students with basic knowledges of computer-aided design and modelling applied in engineering, models based on advanced product design principles and construction methods. Introducing into the principles and methods of computer modelling of mechanical systems, which form the basis of computer-assisted technology planning, tool design, computer-controlled integrated manufacturing, and flexible manufacturing systems. With the gained knowledge, the students will be able to learn and effectively apply any modern computer design system during their studies and praxis.				
Schedule:				
Week - consultation		Topics of the lectures		Topics of the exercises
1		INTRODUCTION TO CAD / CAM / CAE SYSTEMS APPLYING		Introducing to the general features of the design systems
2		GEOMETRIC FUNDAMENTS OF CAD SYSTEMS		2D- editing contour elements 1.
3		GEOMETRIC MODELLING		2D- editing contour elements 2.
4		FEATURE BASED GEOMETRIC MODELLING		Extrude, pad, pocket commands – how they works
5		ENGINEERING DRAWING IN CAD ENVIRONMENT I.		Functionality and using of the model – tree by examples
6		ENGINEERING DRAWING IN CAD ENVIRONMENT II.		Creating of solids by revolving
7		INTEGRATION OF CAx SYSTEMS		Labor ZH1
8		PRODUCT LIFECYCLE MANAGEMENT AND PRUDUCT DATA MANAGEMENT		Lofting and sweeping 1.
9		BASICS OF 3D IMAGING		Lofting and sweeping 2.
10		PERIPHERAL TECHNOLOG. – RAPID PROTOTYPING – 3D SCANNING		Extrusion 1.
11		PERIPHERAL TECHNOLOG. – RAPID PROTOTYPING – 3D PRINTING		Extrusion 2.
12		REVERSE ENGINEERING		Assembly modelling 1.
13		CAM SYSTEMS		Assembly modelling 2.
14		REVERSE ENGINEERING AND RAPID PROTOTYPING – PRACTICAL INDUSTRIAL APPLICATION		Labor ZH2, ZH3
Requirements				
Week		Topics		
7		Labor EXAM1: 1-6 week topics		
14		Labor EXAM2: 8-13 week topics		
14		Theoretical EXAM3: 1-14 week topics		

Conditions of getting practice mark:

- részvétel a foglalkozásokon (lásd TVSZ)
- Az elméleti és gyakorlati ZH összesen legalább 60%-os teljesítése

Labor ZH1-ből min. 10, max. 15 pont, Labor ZH2-ből min. 10, max. 15 pont, elméleti ZH3-ből min. 40, max. 70 pont, összesen max. 100 pont érhető el. Ha a hallgató a félévközi teljesítménye 60% alatti, nem kap aláírást. Az aláírást a vizsgaidőszak első 10 napjáig – aláíráspótló vizsga jelleggel - még pótolni *lehet*. A sikertelen pótlás az aláírás **végleges** megtagadását vonja maga után.

A vizsga módja: (írásbeli, szóbeli, teszt stb.)

- Írásbeli teszt

Értékelés (teljesítési határok és osztályzatok):

0 – 59,99%: elégtelen (1)
60 – 69,99%: elégséges (2)
70 – 79,99%: közepes (3)
80 – 89,99%: jó (4)
90 – 100%: jeles (5)

Books:

- [1.] Kátai L. és kol.: CAD book, Typotex Kiadó, 2012, ISBN 978-963-279-539-3
- [2.] Váradi Károly, Horváth Imre: GÉPÉSZETI TERVEZÉST TÁMOGATÓ TECHNOLÓGIÁK, Műegyetemi Kiadó, 2008
- [3.] David C. Planchard, Marie C. Planchard: Engineering Design with Solidworks 2013, ISBN 978-1-58503-777-3, Schroff Development Corporation
- [4.] Paolo Davim: Modern Mechanical Engineering, Springer Verlag Berlin, Heidelberg, 2014
- [5.] http://www.tankonyvtar.hu/hu/tartalom/tamop425/0029_2A_CAD_HU/adatok.htm
- [6.] <http://www.autodesk.com/products/powershape/overview>
- [7.] [http://www.tankonyvtar.hu/hu/tartalom/tamop425/0029_2A_peldatar_011/A08 - Bonyolult alkatresz CAD modellezese 3 3.html](http://www.tankonyvtar.hu/hu/tartalom/tamop425/0029_2A_peldatar_011/A08_-_Bonyolult_alkatresz_CAD_modellezese_3_3.html)
- [8.] http://vigyanparijojana.weebly.com/uploads/2/4/2/5/24253861/cad_cam.pdf