

Tárgytematika / Course Description **Computer Aided Process Planning for Vehicle Industry**

NGD_MDAA46_1

Tárgyfelelős neve /

Teacher's name: dr. Tancsics Ferenc

Félév / Semester: 2023/24/1

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 0/0/0

Tárgy féléves óraszám /

Teaching hours(sem.): 12/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

Learning objectives:

- Basic knowledge of Computer Aided Design.
- Overview of up-to-date process simulations and their theoretical background.
- Study of most important process planning softwares.

TANTÁRGY TARTALMA / DESCRIPTION

Topics:

1. Overview and classification of basic manufacturing processes. Traditional methods of process planning.
2. Main steps of technology process flow generation, computer aided methods.
3. Software for modelling of primary shaping processes: casting, metal forming, polymer processing.
4. Secondary shaping processes: algorithms and software for cutting operations.
5. Evaluation of results, modelling and optimising of manufacturing processes.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESMENT'S METHOD

Homeworks:

Detailed presentation of a selected computer aided process planning software. Homework will be evaluated during seminars

Grade: based on homeworks and examination.

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

- Mielnik, E. M: Metallworking Science and Engineering, McGraw-Hill, 1991
- Lenard, J. G.: Metal Forming Science and Practice, Elsevier, 2003
- Mátyási Gyula, Sági György: Számítógéppel támogatott technológiák. Műszaki Könyvkiadó Kft, 2012
- Váradi Károly, Horváth Imre: Gépészeti tervezést támogató technológiák. Műegyetemi Kiadó, 2008

Recommended literature:

- Kalpakjian, Serope; Steven Schmid: Manufacturing, Engineering & Technology. Prentice Hall. ISBN 0-13-148965-8.
- M. Hazarika, U. S. Dixit: Setup Planning for Machining. Springer, 2015. ISBN: 978-3-319-13320-1

Process planning software:

- <http://www.autoform.com/en/>
- <http://www.autodesk.com/products/moldflow/overview>
- <http://www.simufact.com/simufact-products.html>
- <https://www.esi-group.com/software-solutions/virtual-manufacturing/casting-simulation-suite>
- https://www.plm.automation.siemens.com/en_us/products/tecnomatix/manufacturing-planning/process-design/planner.shtml

AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL