Study program : Mechanical Engineering

Type and level of studies: Master Academic Studies

Course unit: Calculation Methods in Product Development

Teacher in charge : Mirko Blagojević

Language of instruction: English

ECTS: 6

Prerequisites: None

Semester: Winter Semester

Course unit objective

The aim of this course is that the candidates next analytical methods enable the successful implementation modern numerical methods and software tools in the calculations of mechanical constructions in stage of their development.

Learning outcomes of Course unit

After mastering the program and passing the exam, the student will know the basic analytical and numerical calculation methods and will be able to apply them in the early stage of product development.

Course unit contents

Theoretical classes

Introduction, Calculation of machine design and product development, Calculation methods of machine construction, Analytical methods, Numerical methods, Analytical calculation of machine elements and machine design using modern software, Finite element method.

Practical classes

Completing assignments related to of machine design calculation using analytical methods, modern software and finite element method using ready-made software packages.

Literature

1. M. Blagojevic, CALCULATION METHODS IN PRODUCT DEVELOPMENT, Handouts, Faculty of Engineering, 2016.
2. F. Ebrahimi, FINITE ELEMENT ANALYSIS – APPLICATIONS IN MECHANICAL ENGINEERING, InTech, 2012.
3. Autodesk Inventor Simulation Tutorial, Autodesk, 2013.

Number of active teaching hours				**Other classes**
Lectures:	Practice:	Other forms of classes:	Independent work:	**0**
3	2	*mentoring system*	0	

Teaching methods

Examination methods (maximum 100 points)

Exam prerequisites	**No. of points:**	**Final exam**	**No. of points:**
Student's activity during lectures	**10**	oral examination	
practical classes/tests	**20 (2x10)**	written examination	**30**
Seminars/homework	**20**	.....	
Project	**20 (2x10)**		
Other			

Grading system

Grade	**No. of points**	**Description**
10	**91-100**	Excellent
9	**81-90**	Exceptionally good
8	**71-80**	Very good
7	**61-70**	Good
6	**51-60**	Passing
5	**≤ 50**	Failing