

DESCRIPTION OF THE COURSE

Name of the course: Manufacturing Design I	Code: BIE54	Semester: 6
Type of teaching: Lectures, Laboratory work Course project	Lessons per week: L – 1,5 hours; LW – 1,5 hours; CP – 2,1 hour/stud.	Number of credits: 5

COURSE STATUS IN THE CURRICULUM: Compulsory for the students specialty Industrial Engineering BEng programme of the English Language Faculty of Engineering.

AIMS AND OBJECTIVES OF THE COURSE: To provide understanding on the essentials for the product development with due consideration of design procedures and methods. This type of study will enable students to handle both upstream issues related to marketing, finance, customers, and company, and downstream issues related to manufacturing, operation, service and disposal at the design stage. An emphasis is placed upon project management and practice of engineering design.

DESCRIPTION OF THE COURSE: The main topics concern: Systematic approach to design; Design for manufacturee; Technical aspects of product and system design; Design planning methods and optimization; Risk and reliability; Material selection; Analysis and calculations; Manufacturing design – case study.

PREREQUISITES: Principles of Mechanical Engineering Design, Physics, Mechanics, Material Science, Strength of Materials, Industrial Manufacturing Systems, Materials Technology.

TEACHING METHODS: Lectures, laboratory work (defence of protocols) and group course project with a public defence.

METHOD OF ASSESSMENT: A two-hours assessments at the end of semester - 70%, laboratory work – 30%. Group project – 100%.

INSTRUCTION LANGUAGE: English.

BIBLIOGRAPHY:

1. Dimitrov L. Principles of Mechanical Engineering Design, Technical University of Sofia, 2001;
2. Shigley, J., Ch. Mischke. Mechanical Engineering Design, 6th ed., McGraw Hill, 2001;
3. Otto K.N., L. Kristen. Product Design: Techniques in Reverse Engineering and New Product Development. Prentice Hall, 2001;
4. Boothroyd G., P. Dewhurst. Product Design for Manufacturing and Assembly. M.Dekver 1994.