DESCRIPTION OF THE COURSE

Name of the course: **Industrial Manufacturing Systems - I**	Code: BIE47	Semester: 5
Type of teaching: Lectures and Tutorials Course work	Lessons per week: L – 2 hours; T – 1 hour	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 ensure theoretical knowledge and practical skills, necessary for the understanding and implementation of contemporary manufacturing processes and the setting up of manufacturing systems. Special attention is paid to the including of the latest achievements of production automation for manufacturing system purposes. A course work is also included in the study with the aim to make the students use the theoretical knowledge for developing concrete technological and design solutions.

DESCRIPTION OF THE COURSE: The main topics concern: Metal cutting. Turning and related operations. Milling. Abrasive Machining processes. Broaching. Gear manufacturing. Jigs and fixtures. Special machining processes. Numerical control. Production operations and automation strategies. Production economics. Detroit-type automation. Assembly lines and line balancing. Automated assembly systems.

PREREQUISITES: Introduction to Manufacturing and Industrial Practice, Material Science, Strength of Materials.

TEACHING METHODS: Lectures, using slides, course work preparation and defence.

METHOD OF ASSESSMENT: Assessment at the end of the 5-th term.

INSTRUCTIONAL LANGUAGE: English.

BIBLIOGRAPHY:

1. Niebel B. Modern Manufacturing Processes Engineering, McGraw-Hill Book Company, 1989;
2. Amstead D., Ostwald P., Begeman M., Manufacturing Processes, Wiley and Sons, 1989;
3. Wakil S., Processes and Design for Manufacturing, Prentice Hall International, 1991;
4. Lindberg R. A. Processes and Materials of Manufacturing, Allyn and Bacon, 1990;
5. Groover, M. Automation, Production Systems and CIM. Prentice Hall International Inc., 1987;
6. Wo, B. Manufacturing System Design and Analysis. Chapman & Hall, 1992;
7. Lentz Jr., K. Design of Automatic Machinery. Van Nostrand Reinhold Co., 1985.