DESCRIPTION OF THE COURSE

Name of the course: **Industrial Manufacturing Systems II**	Code: BIE50	Semester: 6
Type of teaching: Lectures and laboratory work; Tutorials	Lessons per week: L - 1.5 hours; LW - 1 hour; T - 1.5 hours	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 the knowledge and tools that are necessary for the design and implementation of contemporary industrial manufacturing systems. Special attention is paid to the different subsystems and elements as well as to the control of the automated manufacturing systems. The course material is illustrated with examples of the recent achievements of production system automation and CIM and their requirements.

DESCRIPTION OF THE COURSE: Main course topics: Introduction to the manufacturing systems; Interaction and interdependence between the product design and the manufacturing process; Technical resources for manufacturing; Design and structuring of manufacturing systems; Subsystems' analysis; Elements of the manufacturing systems; Levels of automation and related control requirements; Studies of examples to illustrate the components' base for the manufacturing systems; Systematic approach to the manufacturing systems; System concepts, examples, communication and control; Concurrent engineering; Examples for automated manufacturing systems of leading and home companies; Social-economic and environmental aspects from the implementation of manufacturing systems.

PREREQUISITES: Introduction to Manufacturing and Workshop Practice, Industrial Manufacturing Systems – I.

TEACHING METHODS: Lectures, using video materials, case studies, laboratory and tutorial work, problem solving, personal assignments and presentations.

METHOD OF ASSESSMENT: Mid-term test and exam at the end of semester (80%), tutorial work (20%).

INSTRUCTIONAL LANGUAGE: English.

BIBLIOGRAPHY:

1. Groover, M., E. Zimmers, CAD/CAM Computer Aided Design and Manufacturing, Prentice Hall International Inc., 1984;
2. Mitchell., F., Systems. An Introduction to Computer Integrated Manufacturing, Prentice Hall International Inc., 1991;
3. Shah, J., M. Mantyla. Parametric and feature Based CAD/CAM. John Wiley and Sons Inc., 1996;
4. Groover, M., Automation, Production Systems and CIM, Prentice Hall International Inc/., 1987;
5. Krafter, R., T. Cheniewski, M. Negiu. Robotic Engineering, Prentice Hall International Inc., 1989;
6. Jackson, P., Introduction to Expert Systems. Addison Wesley. 1990.