Discipline	PRODUCTION TECHNOLOGIES code: 25 **summer semester**	
Specialty	INDUSTRIAL MANAGEMENT	
ECTS credits: **5**	Form of assessment: Exam	
Lecturer	Assoc. prof. PhD Eng. / scientific title/ Krasimira Dimitrova /name/ Room NUK 508 Phone: +359878011079 E-mail: krasimira.dimitrova@tu-varna.bg	
Department	INDUSTRIAL MANAGEMENT	
Faculty	*FACULTY OF MECHANICAL ENGINEERING AND TECHNOLOGIES*	

Learning objectives:

The discipline "Production Technologies" discusses the main theoretical issues related to the manufacturing technologies in machine building. The aim is to acquaint the students with the characteristics of the individual methods of processing, their technological characteristics, the basic principles and methods of designing the technological processes in the production of parts and the assembling of units and machines. The quantitative and qualitative indicators of the technological processes, precision problems in the processing of the preforms, as well as the technological prerequisites for increasing the labor productivity are analyzed. This provides a foundation on which students can build on their knowledge in the organization and management of production in the business unit.

The laboratory exercises include the study of the main types of production machines, technological equipment, the technological capabilities of the individual production processes, as well as monitoring under real production conditions. In the exercises the students are trained in development of technological processes and are acquainted with the methods for determination of the parameters of the cutting modes in mechanical processing, calculation of the economic efficiency of the technological processes. The course work in the course enables the students to perform a practical task based on the lessons learned and the laboratory exercises.

The discipline directly corresponds to the following disciplines: Industrial Engineering and Production Management.

CONTENTS:

Training Area	Hours lectures	Hours seminar exercises

Introduction to production technologies	2	…
Material in manufacturing	2	
Material properties and attributes	2	
Methods for the production of billets	2	…
Basic principles of technological process design	2	…
General methodology and sequence of technological process design	2	…
Machine bases, mounting and fixing	2	
Turning	2	
Milling	2	
Drilling and related operations	2	
Gears cutting	2	
Other machining operations	2	
Grinding and other abrasive processes	2	
Technological processes for assembling units	2	
Economic assessment of technological processes	2	
Technological analysis of the construction		2
Main types of mechanical machining, machine tools, technological device and cutting tools		2
Development of technological route for machining of a given detail		3
Determining the parameters of the cutting conditions in turning		2
Determining the parameters of the cutting conditions in milling		2
Determining the parameters of the cutting conditions in drilling		2
Economic assessment of technological processes		2
Course project - Development of technological process for machining of a detail according to a given design drawing		
1. Technological analysis of the construction		1
2. Development of technological route for mechanical threatment of a given detail in two variants - with technological sketches for each operation		4

3. Development of operating technology for machining for one operation from the technological route - transitions, technological schemes of basing, establishing and fixing, selection of devices and cutting tools		4
4. Calculation of the parameters of cutting regime for the selected operation - cutting depth, cutting feed, cutting speed, cutting rotation, cutting forces, cutting power, technological times		4
5. Economic assessment of technological processes		2
TOTAL: **60**	**30**	**30**