


Discipline	Basics of Computer Aided Design in Mechanical Engineering, code: 20, winter semester	
Specialty	Computerized Manufacturing Technologies, Manufacturing Engineering and Technologies	
ECTS credits: 5	Form of assessment: Inter-semester evaluation	
Lecturer	Assist. Prof. Eng. Mariya Konsulova-Bakalova, PhD Room 715M Phone: +359 52 383 545 E-mail: mbakalova @tu-varna.bg	
Department	MANUFACTURING TECHNOLOGIES AND MACHINE TOOLS	
Faculty	FACULTY OF MANUFACTURING ENGINEERING AND TECHNOLOGIES	

Learning objectives:

The course goal is to provide students with knowledge in the field of computer-aided design (CAD). The students will acquire practical skills to work with one of the most commonly used CAD software – AutoCAD. They will be able to create an engineering drawing, containing all required information in accordance with standardized conventions. The principles of two- and three-dimensional modelling are studied. The course covers geometric modelling, types of geometric primitives and working with them, drawing drawings, use of simple graphics libraries, basic principles of 2D and 3D modelling and construction of geometric images. Laboratory exercises are conducted using AutoCAD.

CONTENTS:

Training Area	Hours lectures	Hours laboratory exercises
AutoCAD user interface. Different types of workspaces. Navigation – Pan and Zoom tools.	1	2
Creating 2D basic geometry objects.	2	2
Modifying and Manipulating 2D primitives.	2	4

Organizing the drawing by assigning objects to layers. Editing object properties.	2	2
Collecting the objects into a single object. Blocks. Creating and Inserting blocks.	1	2
Notes and Labels. Using text styles.	1	2
Creating and Modifying the dimensions with AutoCAD. Dimension styles.	4	8
Introduction to 3D solid modeling. Creating and Modifying 3D objects. Boolean operations. Understanding User Coordinate system.	2	8
TOTAL: 45 h	15	30