

Discipline	Interchangeability and technical measurements, code: 16 winter semester –	
Specialty	Manufacturing Engineering and Technologies, Computerized Manufacturing Technologies, Automotive Engineering	
ECTS credits: 6	Form of assessment: PA	
Lecturer	Assoc. Prof. PhD Eng. / scientific title/ <b>Kiril Kirov</b> /name/ Room 703 M Phone: +359 52 383 555 E-mail: kirov@tu-varna.bg	
Department	Technology of Machine Tools and Manufacturing	
Faculty	Manufacturing Engineering and Technologies	
<p>Learning objectives:</p> <ul style="list-style-type: none"> <li>• Interchangeability basics.</li> <li>• ISO coding system for tolerances of linear sizes</li> <li>• Geometrical tolerancing — Tolerances of form, orientation, location and run-out</li> <li>• Roughness of surface - Tolerancing and measurement</li> <li>• Tolerancing and measurement of angles, cones and threads</li> <li>• Measurement of mechanical quantities.</li> </ul> <p style="text-align: center;">/ANNOTATION/</p> <p>The course "Interchangeability and Technical Measurements" introduces to the students basic principles of interchangeability and rules for tolerancing requirements for geometrical product specifications of machine tools. This is a basic discipline that provides data on the accuracy requirements according to the regulatory documents, taking into account processing technology, reliability, efficiency and type of manufacturing in production, and operation of machinery and equipment.</p> <p>The subject acquaints students with the basics of metrology: basic elements of the theoretical, legal and applied metrology, as well as the unity of measurements and methods, and means for solving the most metrological tasks in mechanical engineering.</p> <p>Laboratory exercises include methods and tools for measuring linear and angular dimensions, deviations of form, orientation, position, and run-out of surfaces and axes, measurement of threads, angles and cones, evaluation of measurement uncertainty, calculation, measurement of mechanical quantities, and presentation of results.</p> <p>Students solve specific metrological tasks, and acquire knowledge and skills to work with modern measurement instruments.</p>		

CONTENTS:		
Training Area	Hours lectures	Hours seminar exercises
Interchangeability basics.	2	0
ISO coding system for tolerances of linear sizes	4	4
Geometrical tolerancing — Tolerances of form, orientation, location and run-out	6	6
Roughness of surface -Tolerancing and measurement	4	4
Tolerancing and measurement of angles, cones and threads	8	10
Measurement of mechanical quantities.	6	6
<b>TOTAL:</b> 60 h	<b>30</b>	<b>30</b>