

Material Cutting and Cutting Tools

Course Overview for gr. 158L3A, 8-th semester

Level of study	Bachelor Degree
Workload	ECTS: 4 Total Hours: 55 Contact Hours: 20 <ul style="list-style-type: none"> • Lectures: --- • Labs: --- • Seminars: 20
Course Code	B3.B.1.1
Semester	Summer
Prerequisites	<i>“Structural Materials Engineering”, “Metrology, Standardisation and Certification”, “Materials Science”, “Material Cutting and Cutting Tool, part 1”, “Material Cutting and Cutting Tool, part 2”</i>
Course Objectives	<i>The objective of the course is to develop knowledge, skills and experience in the field of metal cutting tools design and calculation</i>
Learning Outcomes	<i>Will know:</i> <ul style="list-style-type: none"> • <i>geometrical parameters, design and calculation of form cutters, broaches, drills, core-drills, reamers; milling, thread and gear cutting tools</i> • <i>cutting mode parameters and optimal tool life in cutting with form cutters, broaches, drills, core-drills, reamers; milling, thread and gear cutting tools</i> <i>Will be able to:</i> <ul style="list-style-type: none"> • <i>design and calculation of form cutters, broaches and milling cutting tools</i>
Syllabus	<ol style="list-style-type: none"> 1. <i>Design and Calculation of Form Cutters</i> 2. <i>Design and Calculation of Broaches</i> 3. <i>Design and Calculation of Milling Cutters</i> 4. <i>Design and Calculation of Gear Cutting Tools</i>
Labs	
Practical works	<ol style="list-style-type: none"> 1. <i>Design and Calculation of Form Cutters</i> 2. <i>Design and Calculation of Broaches</i> 3. <i>Design and Calculation of Milling Cutters</i> 4. <i>Design and Calculation of Gear Cutting Tools</i>
Projects	<i>Design and Calculation of Form Cutters, Broaches and Milling Cutters</i>
Assessment	<i>Grading Test</i>
Resources	<ul style="list-style-type: none"> • <i>Material cutting and cutting tools : учебное пособие / С. В. Курсанов (http://www.lib.tpu.ru/fulltext2/m/2014/m261.pdf)</i> • <i>Cutting Tool Applications. George Schneider, 2005</i> • <i>Manufacturing Engineering and Technology. Fifth edition. Serope Kalpakjian, Steven R. Schmid, 2006</i>
Instructors	<i>Kim Alexey Bogowhich</i> http://portal.tpu.ru/SHARED/b/BOGOWHICH <i>Kozlov Viktor Nikolaevich</i>