COURSE DESCRIPTION CARD – SPECIMEN

<table>
<tr><td colspan="10">Faculty of Mechanical Engineering</td></tr>
<tr><td>Field of study</td><td colspan="6">Mechanics</td><td>Degree level and programme type</td><td>Bachelor's degree/Master's degree/Doctoral degree</td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6"></td><td>Study profile</td><td></td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Manufacturing Techniques</td><td>Course code</td><td>IS-FME-00164S</td></tr>
<tr><td>Course type</td><td>obligatory</td></tr>
<tr><td rowspan="2">Forms and number of hours of tuition</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td>summer</td></tr>
<tr><td>30</td><td></td><td>15</td><td></td><td></td><td></td><td></td><td>No. of ECTS credits</td><td>5</td></tr>
<tr><td>Entry requirements</td><td colspan="9">Basics of Machine Construction, Structural Materials, Metrology and Measurement Systems</td></tr>
<tr><td>Course objectives</td><td colspan="9">To acquaint students with the basics of theoretical and practical techniques of manufacturing machinery parts and Introduction to the design and operating parameters of machine tools and machines used in the manufacturing industry</td></tr>
<tr><td>Course content</td><td colspan="9">design and manufacturing processes, characterization of structural materials, molding and casting, welding technologies, cutting technologies , metal forming, machining and machine tools, machining erosion, powder metallurgy in terms of applications in the manufacture of machine parts, the main processing technologies of technical plastics, own student project based on knowledge of self-selected manufacturing technology</td></tr>
<tr><td>Teaching methods</td><td colspan="9">lecture, lproject classes, project making documentation, specialization workshop, seminar</td></tr>
<tr><td>Assessment method</td><td colspan="9">lecture – written exam, project – evaluation of reports, verification of preparation for classes</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="7">Learning outcomes</td><td colspan="2">Reference to the learning outcomes for the field of study</td></tr>
<tr><td>LO1</td><td colspan="7">student trims knowledge of manufacturing techniques, especially knowledge of modern technologies</td><td colspan="2">M1_W16</td></tr>
<tr><td>LO2</td><td colspan="7">student compares the different variants of technology manufacturing equipment according to established criteria</td><td colspan="2">M1_U09</td></tr>
<tr><td>LO3</td><td colspan="7">student applies the principles of occupational health and safety</td><td colspan="2">M1_U23</td></tr>
<tr><td>LO4</td><td colspan="7">student evaluates the usefulness of methods for solving</td><td colspan="2">M1_U24</td></tr>
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	simple engineering tasks in the design of manufacturing processes	
LO5	student builds a sense of responsibility for own work and is willing to comply with the rules work in a team	M2_K03
LO6		
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed
LO1	qualifying test lecture, a reports on the project	Lecture, P
LO2	preparation for project classes, discussion in the lecture	Lecture, P
LO3	preparation for project classes, observation of work in the classroom	P
LO4	active methods of lecture	Lecture
LO5	Discussion on the report of the project, observation of work in the labs	P
LO6		

Student workload (in hours)		No. of hours
Calculation	lecture attendance	30
	participation in classes, laboratory classes, etc.	30
	preparation for classes, laboratory classes, projects, seminars, etc.	30
	working on projects, reports, etc.	45
	participation in student-teacher sessions related to the classes/seminar/project	10
	preparation for and participation in exams/tests	30
	TOTAL:	175

Quantitative indicators	HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation	70	2
Student workload – practical activities	105	3

Basic references	1. Rusek P.: Innovative manufacturing technology, Instytut Zaawansowanych Technologii Wytwarzania, Kraków, 2012, 2. Singh R.: Introduction to Basic Manufacturing Processes and Workshop Technology, New Age International Publishers, 2006.
Supplementary references	1. Jonsson P.: Manufacturing, planning and control, London, McGraw-Hill, 2009, 2. Gajek M.: Optimization of manufacturing processes and work environment, Oficyna Wydawnicza Politechniki Opolskiej, Opole, 2010.

Organisational unit conducting the course	Chair of Materials Engineering and Production	Date of issuing the programme
Author of the programme	Grzegorz Skorulski, PhD	2020.06.22

L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work,

S – seminar

Please notice!
Depending on number of students enrolled for the subject hours of tuition are as follows (for each 30 hours given in course description card):
1 – 2 students - 5 hours of tuition hours;
3 – 4 students - 8 hours of tuition;
5 – 6 students - 11 hours of tuition;
7 – 8 students - 15 hours of tuition;
9 and more students - hours of tuition given by a teacher as regular classes.