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 and Construction of Machinery</td><td>Degree level and programme type</td><td>2nd LEVEL MASTER'S DEGREE</td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6">Automobiles</td><td>Study profile</td><td></td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Automobiles</td><td>Course code</td><td>IS-FME-00158S</td></tr>
<tr><td>Course type</td><td></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>30</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">Combustion engines and fuels</td></tr>
<tr><td>Course objectives</td><td colspan="9">Gadering knowlege about building, exploitation, construction and operating of motor vehicles and their individual systems. Ability to design selected vehicle system</td></tr>
<tr><td>Course content</td><td colspan="9">Lecture:
Motor vehicles classification, purpose and requirements. Vehicle construction and characteristic of its major systems. Technical characteristic and moving properties. Construction, functions and tasks of major vehicle systems. Wheel-surface system. Force and power balance. Mechatronic systems in vehicles
Laboratory class:
Construction and operating of motor vehicle systems</td></tr>
<tr><td>Teaching methods</td><td colspan="9">lecture, laboratory classes;</td></tr>
<tr><td>Assessment method</td><td colspan="9">Lecture – written exam, Laboratory class - evaluation of reports, class preparedness tests</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">Has ordered and theoretically founded knowledge about Machinery Design</td><td colspan="2">M2_W03</td></tr>
<tr><td>LO2</td><td colspan="7">Can work individually and in a team using proper techniques; student is able to work out schedule and fulfill given tasks at term</td><td colspan="2">M2_U02</td></tr>
<tr><td>LO3</td><td colspan="7">Can plan and carry out experiments</td><td colspan="2">M2_U08</td></tr>
<tr><td>LO4</td><td colspan="7">Studen is aware of responsibility for his own actions and</td><td colspan="2">K_K04</td></tr>
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	ready to obey the teamwork rules and take responsibility for teamwork on tasks	
LO5		
LO6		
Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	Lecture - writeen exam, Laboratory class - evaluation of reports, class preparedness tests,	L, LC
LO2	Lecture - writeen exam, Laboratory class - evaluation of reports, class preparedness tests,	L, LC
LO3	Laboratory class - evaluation of reports, class preparedness tests,	LC
LO4	Lecture - writeen exam, Laboratory class - evaluation of reports, class preparedness tests,	L, LC
LO5		
LO6		

Student workload (in hours)		**No. of hours**
Calculation	lecture attendance	15x2=30
	participation in classes, laboratory classes, etc.	15x2=30
	preparation for classes, laboratoratory classes, projects, seminars, etc.	15x2=30
	working on projects, reports, etc.	15x2=30
	participation in student-teacher sessions related to the classes/seminar/project	5
	preparation for and participation in exams/tests	10
	TOTAL:	**135**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	**65**	**2,5**
Student workload – practical activities	**70**	**2,5**

Basic references	**1. Brzeźniak M., Juda Z.:Czujniki w pojazdach samochodowych. Informatory techniczne Bosch, W-wa 2010.** **2. Herner A., Riehl h.:Elektrotechnika i elektronika w pojazdach samochodowych. WKŁ 2013.** **3. Reimpell J.: Podwozia samochodów. Podstawy konstrukcji. WKŁ, Warszawa, 2004** **4. Studziński K.: Samochod, teoria, konstrukcja i obliczanie. WKŁ 1980.**
Supplementary references	**1. Rawski F.: Mechanik silników spalinowych. WSiP, Warszawa 1997** **2. Trzeciak K.: Diagnostyka samochodów osobowych, WKŁ 2013** **3. Development trends in design of machines and vehicles : proceedings of the XIV Polish-German seminar. Warsaw University of Technology. Warsaw, 2002.**

Organisational unit conducting the course	**Katedra Budowy i Eksploatacji Maszyn**	**Date of issuing the programme**
Author of the programme	**Andrzej Borawski, PhD**	**17.03.2021**

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.