<table>
<tr><td colspan="11">Bialystok University of Technology</td></tr>
<tr><td>Field of study</td><td colspan="6">Automatic Control and Robotics</td><td>Degree level and programme type</td><td colspan="2">full-time Master's degree</td></tr>
<tr><td>Specjalization / diploma path</td><td colspan="6">common subject</td><td>Study profile</td><td colspan="2">general academic</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Diploma thesis</td><td>Course code</td><td colspan="2">MYAR2S03011</td></tr>
<tr><td>Course type</td><td colspan="2">elective</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 colspan="2">3</td></tr>
<tr><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>No. of ECTS credits</td><td colspan="2">15</td></tr>
<tr><td>Entry requirements</td><td colspan="10">-</td></tr>
<tr><td>Course objectives</td><td colspan="10">The subject of the master thesis is to solve a problem / research or project task, or to refine or develop a research, computational, analytical and measurement method in the field of study and specialization. The work may also be a concept-design or study-research study in the field of a problem in the field of technical sciences; should include individual / new elaboration, analysis, experimental or theoretical / computational research preceded by the formulated objective of the thesis, review of the state of knowledge (proper selection of literature sources and their analysis) and the concept and assumptions required to solve the technical problem posed.</td></tr>
<tr><td>Course content</td><td colspan="10">Specialized knowledge and skills in the field of studied technical sciences. Formulating the purpose of the thesis, assumptions, choosing methods and tools to solve the problem. Analyzing literature materials in order to find or improve / develop new solutions of the task. Independent determination, development and presentation of solutions to technical problems and tasks. Verification of proposed solutions using the methods and tools of theoretical and experimental analysis. Supplementing interdisciplinary knowledge in the field of selected new solutions, methods and techniques in the field of automatic control and robotics. Methodology for analyzing the solution of a set research / project task and formulating conclusions. Documentation of thesis results in the form of tables, charts, patterns, programs / computer codes, multimedia presentations, etc.</td></tr>
<tr><td>Teaching methods</td><td colspan="10"></td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="7">Learning outcomes</td><td colspan="3">Reference to the learning outcomes for the field of study</td></tr>
<tr><td>LO1</td><td colspan="7">has a broad knowledge of development trends and the most important new achievements in the field of automatic control and robotics, life cycle of automation and robotics devices and systems, non-technical aspects of engineering activities</td><td colspan="3">AR2_W07 AR2_W08</td></tr>
<tr><td>LO2</td><td colspan="7">can acquire information from literature, databases and other sources in the scope of the subject of the thesis, can integrate and interpret information and draw conclusions and formulate specific objectives required to solve the problem</td><td colspan="3">AR2_U02</td></tr>
<tr><td>LO3</td><td colspan="7">can propose new / improved technical solutions and components (components, devices) to solve a given task</td><td colspan="3">AR2_U01</td></tr>
<tr><td>LO4</td><td colspan="7">can use the methods and techniques learned - if necessary, modifying them accordingly - to solve and analyze the problem</td><td colspan="3">AR2_U01 AR2_U03</td></tr>
<tr><td>LO5</td><td colspan="7">is able to plan and implement partial solutions of a technical task, organize experimental and simulation / analytical experiments using the methods / techniques and tools he / she knows</td><td colspan="3">AR2_U04 AR2_U08</td></tr>
<tr><td>LO6</td><td colspan="7">can work out results related to the implementation of the experiment, project or research task, can prepare oral presentations, written and multimedia presentations of the results of the thesis</td><td colspan="3">AR2_U05</td></tr>
<tr><td>LO7</td><td colspan="7">is ready to responsibly fulfill professional duties</td><td colspan="3">AR2_K06</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="7">Methods of assessing the learning outcomes</td><td colspan="3">Type of tuition during which the outcome is assessed</td></tr>
<tr><td colspan="8">Student workload (in hours)</td><td colspan="3">No. of hours</td></tr>
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Calculation	Editing of diploma thesis	125	
	Realization of the project/research related to diploma thesis	115	
	Collecting and studying literature related to diploma thesis	100	
	Participation in teacher-student sessions related to the module subject	35	
	TOTAL	375	
Quantitative indicators		Hours	ECTS
Student workload - activities that require direct teacher participation		35	1,4
Student workload - practical activities		340	13,6
Basic references	1. Boć J., Jak pisać pracę magisterską, Kolonia, Wrocław 2001. 2. Cabarelli G., Łucki Z., Jak przygotować pracę dyplomową lub doktorską, Universitas, Kraków 1998. 3. Literatura specjalistyczna - stosownie do tematu i zakresu pracy. 4. Katalogi, instrukcje techniczne, oraz źródła internetowe - stosowanie do tematu pracy.		
Supplementary references	1. Pułło A., Prace magisterskie i licencjackie. Wskazówki dla studentów, WP PWN, Warszawa 2000. 2. Urban S., Ładoński W., Jak napisać dobrą pracę magisterską, Wydawnictwo AE im. Oskara Langego, Wrocław 1997. 3. Kolman R., Zdobywanie wiedzy. Poradnik podnoszenia kwalifikacji (magisteria, doktoraty, habilitacje), Oficyna Wydawnicza Branta, Bydgoszcz-Gdańsk, 2003.		
Organisational unit conducting the course	Katedra Automatyki i Robotyki	Date of issuing the programme	
Author of the programme	prof. dr hab. inż. Zdzisław Gosiewski	2019-09-23	