

**STUDY PROGRAMME  
AT THE DOCTORAL SCHOOL OF THE LUBLIN UNIVERSITY OF TECHNOLOGY**

**I. General description of education at the Doctoral School at Lublin University of Technology:**

Name of the school	Doctoral School at Lublin University of Technology
Field	Engineering and technical sciences, social sciences
Names of scientific disciplines	<ul style="list-style-type: none"> <li>- Architecture and Urban Planning</li> <li>- automation, electronics, electrical engineering and space technologies</li> <li>- technical computing and telecommunications</li> <li>- civil engineering, surveying and transport</li> <li>- mechanical engineering</li> <li>- environmental engineering, mining and energy</li> <li>- management and quality sciences</li> </ul>
Classification to the field and discipline to which the learning outcomes relate	<ul style="list-style-type: none"> <li>• Field of engineering and technical sciences Discipline: <ul style="list-style-type: none"> <li>- architecture and urban planning</li> <li>- automation, electronics, electrical engineering and space technologies</li> <li>- technical computing and telecommunications</li> <li>- civil engineering, surveying and transport</li> <li>- mechanical engineering</li> <li>- environmental engineering, mining and energy</li> </ul> </li> <li>• Social sciences Discipline: management and quality sciences</li> </ul>
Duration of study	4 years (8 semesters)
Admission requirements and procedure for the doctoral programme	The admission rules for the Doctoral School at the Lublin University of Technology are governed by the Resolution of the Senate of the Lublin University of Technology on the admission rules for the Doctoral School at the Lublin University of Technology.
Profile of a doctoral school graduate, including: a description of the general educational objectives and employment opportunities (typical workplaces)	A graduate of the Doctoral School at the Lublin University of Technology possesses extensive knowledge of issues falling within the scope of the discipline(s) in which the doctoral thesis is being conducted, and has the ability to formulate scientific problems and solving them using modern research methods. They are able to present the results of scientific research in the form of academic or popular science publications, as well as papers at national and international conferences. A graduate of the Doctoral School at the Lublin University of Technology is able to prepare and carry out a research project, as well as work within a national or international research team. They demonstrate an ethical approach to research and teaching. They have a habit of self-study, as well as the necessary preparation for further academic work, enabling them to obtain subsequent academic degrees and titles. A graduate of the Doctoral School at the Lublin University of Technology is prepared to take up a position as an academic teacher and may also find employment in research institutions.

**II. Intended learning outcomes for qualifications at Level 8 of the Polish Qualifications Framework:**

Symbol	Description n compon ent code	Description of programme-specific learning outcomes. Upon completion of the doctoral programme, graduates will:
<b>Knowledge</b>		
SDwPL_W1	P8S_WG P8S_WK	possess general knowledge in scientific fields and detailed knowledge of selected issues in the discipline(s) in which the doctoral thesis is being conducted, enabling a review of existing paradigms, in particular covering developmental trends and the fundamental dilemmas of contemporary civilisation and national and international scientific achievements
SDwPL_W2	P8S_WG	possesses advanced, detailed knowledge in the field of statistical analysis of research results
SDwPL_W3	P8S_WG	has advanced knowledge of the methodology of conducting scientific research in the discipline in which the the doctoral thesis is being carried out, using modern computational tools
SDwPL_W4	P8S_WK	possesses knowledge of didactics and teaching methods in higher education, taking into account modern teaching techniques
SDwPL_W5	P8S_WK	has advanced knowledge of the legal, organisational, institutional and financial conditions governing the functioning of the research system at national and international level
SDwPL_W6	P8S_WG	knows and understands the principles of disseminating the results of scientific activity, including through open access
SDwPL_W7	P8S_WK	is familiar with the basic principles of knowledge transfer to the economic and social spheres and the commercialisation of research results

<b>Skills</b>		
SDwPL_U1	P8S_UW	has the ability to plan and conduct research that is methodologically sound, methodologically advanced, and based on a sound understanding of theory
SDwPL_U2	P8S_UW	has the ability to use modern IT tools (including those for modelling, experimental research and computer simulations) necessary for conducting scientific research
SDwPL_U3	P8S_UW	has the ability to prepare and appropriately draft research proposals and projects, and to organise research; applies the principles and rules of data acquisition and secures the resources necessary for conducting scientific research
SDwPL_U4	P8S_UW, P8S_UK	has the ability to disseminate and transfer research results to the economic and social spheres
SDwPL_U5	P8S_UU	is able to deliver teaching at a university or in academic institutions, utilising the latest technologies and teaching methods for students and learners
SDwPL_U6	P8S_UK	has the ability to publish research findings in international journals and publications, , including via open access
SDwPL_U7	P8S_UK	has the ability to present, explain and defend their own research achievements and to initiate discussions, at national and international forums, using modern multimedia tools
SDwPL_U8	P8S_UK	has the ability to use a foreign language (with particular emphasis on English) to a degree that enables the free and unrestricted use of specialist foreign literature, intensively developing contacts and publishing their own work
SDwPL_U9	P8S_UW	is able to critically analyse and evaluate the results of scientific research, expert activities and other creative works, as well as their contribution to the advancement of knowledge
SDwPL_U10	P8S_UU	is able to independently plan and act to promote their own development, as well as to inspire and facilitate the development of others
SDwPL_U11	P8S_UO	is able to plan and carry out individual and team research projects in national and international contexts
<b>Social competences</b>		
SDwPL_K1	P8S_KK	is prepared to critically evaluate the body of work within a scientific discipline and their own contribution to the development of that discipline, as well as to recognise the importance of knowledge in solving cognitive and practical problems

SDwPL_K2	P8S_KO	is aware of the role of science in everyday life and in the functioning of modern society, and understands and appreciates the importance of scientific research for the country's economic development and civilisational progress – is prepared to participate in the development of a knowledge-based society
SDwPL_K3	P8S_KO	is prepared to think and act in an entrepreneurial manner
SDwPL_K4	P8S_KR	upholds and develops the ethos within research communities, conducts research independently and respects the public ownership of research results

### III. Curriculum for the Doctoral School at the Lublin University of Technology

#### Semester I – 155 hours

1. Health and Safety Training (5 hours)
2. Research ethics (15 hours)
3. Applied statistics (15 hours)
4. Methodology of academic writing (15 hours)
5. Research methodology (15 hours)
6. Methodology of research project preparation (15 hours)
7. Technical English (15 hours)
8. Preparation of academic presentations (15 hours)
9. Commercialisation of research results (15 hours)
10. Seminar with supervisor 1 (30 hours)

#### Semester II – 160 hours

1. Technical English (15 hours)
2. Seminar with supervisor 2 (30 hours)
3. Teaching placement (30 hours)
4. PhD workshops 1 (10 hours)
5. Intellectual property protection (15 hours)
6. Artificial intelligence in science (15 hours)
7. Selected scientific issues in discipline I (15 hours)
8. Selected scientific issues in discipline II (15 hours)
9. Selected scientific issues in discipline III (optional) (15 hours)

#### Semester III – 140 hours

1. Modern solutions in science and technology 1 – Monographic lecture (5 hours)
2. Current Issues in Science 1 – Monographic lecture (5 hours)
3. Innovative scientific research 1 – Monographic lecture (5 hours)
4. Current trends in scientific development 1 – Monographic lecture (5 hours)
5. Seminar with supervisor 3 (30 hours)
6. Teaching practice under supervision (30 hours)
7. Selected scientific issues in discipline I (15 hours)
8. Selected scientific issues in discipline II (15 hours)

9. Research methodology in the discipline (15 hours)
10. Selected research topics in discipline III (optional) (15 hours)

#### **Semester 4 – 105 hours**

1. Modern Solutions in Science and Technology 2 – Monographic lecture (5 hours)
2. Current Issues in Science 2 – Monographic lecture (5 hours)
3. Innovative scientific research 2 – Monographic lecture (5 hours)
4. Current trends in scientific development 2 – Monographic lecture (5 hours)
5. Seminar with supervisor 4 (30 hours)
6. PhD workshops 2 (10 hours)
7. Selected scientific issues in discipline I (15 hours)
8. Selected scientific issues in discipline II (15 hours)
9. Selected academic topics in Discipline III (optional) (15 hours)

#### **Semester V – 50 hours**

1. Modern solutions in science and technology 3 – Monographic lecture (5 hours)
2. Current issues in science 3 – Monographic lecture (5 hours)
3. Innovative scientific research 3 – Monographic lecture (5 hours)
4. Current trends in the development of science 3 – Monographic lecture (5 hours)

##### **Module 1 – Core**

5. Seminar with supervisor 5 (30 hours)

##### **Module 2 – International**

5. Seminar with supervisor at a partner institution 5 (15 hours)
6. Interdisciplinary lecture at a partner institution 1 (15 hours)

#### **Semester VI – 60 hours**

1. Modern solutions in science and technology 4 – Monographic lecture (5 hours)
2. Current issues in science 4 – Monographic lecture (5 hours)
3. Innovative scientific research 4 – Monographic lecture (5 hours)
4. Current trends in scientific development 4 – Monographic lecture (5 hours)
5. PhD workshops 3 (10 hours)

##### **Module 1 – Core**

6. Seminar with supervisor 6 (30 hours)

##### **Module 2 – International**

6. Seminar with a supervisor at a partner institution 6 (15 hours)
7. Interdisciplinary lecture at a partner institution 2 (15 hours)

#### **Semester VII – 30 hours**

1. Seminar with supervisor 4 (30 hours)

#### **Semester VIII – 40 hours**

1. Seminar with supervisor 7 (30 hours)
2. PhD workshops 4 (10 hours)

**Monographic lectures:**

1. Modern solutions in science and technology 1, 2, 3, 4
2. Current issues in science 1, 2, 3, 4
3. Innovative scientific research 1, 2, 3, 4
4. Current trends in scientific development 1, 2, 3, 4

**Selected scientific topics in the discipline I, II**

1. Selected scientific topics in mechanical engineering (45 hours + 45 hours)
2. Selected scientific topics in environmental engineering, mining and energy (45 hours + 45 hours)
3. Selected scientific topics in automation, electronics, electrical engineering and space technologies (45 hours + 45 hours)
4. Selected scientific topics in architecture and urban planning (45 hours + 45 hours)
5. Selected scientific topics in civil engineering, surveying and transport (45 hours + 45 hours)
6. Selected Research Topics in Technical Informatics and Telecommunications (45 hours + 45 hours)
7. Selected scientific topics in management and quality sciences (45 hours + 45 hours)

**Selected research topics in Discipline III**

Elective course outside the doctoral student's discipline – chosen from among the courses offered in a given semester from the group '*Selected research topics in disciplines I and II* in other disciplines' (45 hours)

**Total number of hours: 740.**

#### IV. Study plan in graphical form

Course code	Course title	Assessment method	ECTS	Student assignment	Total number of hours							Semester I					Semester II					Semester III					Semester IV																																																																
					S	W	L	L	P	Independent study	ECTS	h	L	L	P/S	ECTS	W	L	L	P/S	ECTS	W	L	L	P/S	ECTS	W	L	L	P/S																																																													
<b>General subjects</b>																																																																																											
SDwPL-00	Health and Safety Training	Z	0	10	5	5	0	0	0	5		5																																																																															
SDwPL-05	Intellectual property protection	From	1	25	15	15	0	0	0	10							1	15																																																																									
SDwPL-06	Technical English	From	2	50	30	0	30	0	0	20	1		15				1		15																																																																								
SDwPL-01	Research Ethics	From	1	25	15	15	0	0	0	10	1	15																																																																															
<b>Core competencies of a researcher</b>																																																																																											
SDwPL-09	Applied statistics	Z	1	25	15	15	0	0	0	10	1	15																																																																															
SDwPL-02	Methodology of academic writing	Z	1	25	15	15	0	0	0	10	1	15																																																																															
SDwPL-04	Methodology for preparing research projects	From	1	25	15	15	0	0	0	10	1	15																																																																															
SDwPL-03	Research Methodology	From	1	25	15	0	15	0	0	10	1		15																																																																														
SDwPL-19	Artificial intelligence in science	From	1	25	15	0	0	0	15	10							1					15																																																																					
<b>Teaching and dissemination of research findings</b>																																																																																											
SDwPL-08	Commercialisation of research results	From	1	25	15	15	0	0	0	10	1	15																																																																															
SDwPL-07	Preparation of academic presentations	From	1	25	15	15	0	0	0	10	1	15																																																																															
SDwPL-15	PhD workshops	From	4	100	40	0	0	0	40	60							1					10					1		10																																																														
SDwPL-14	Teaching practice under supervision	Z	6	150	60	0	60	0	0	90							3		30				3		30																																																																		
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td></td> <td></td> <td>21</td> <td>535</td> <td>270</td> <td>110</td> <td>105</td> <td>0</td> <td>55</td> <td>265</td> <td>8</td> <td>95</td> <td>30</td> <td>0</td> <td>0</td> <td>7</td> <td>15</td> <td>45</td> <td>0</td> <td>25</td> <td>3</td> <td>0</td> <td>30</td> <td>0</td> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>10</td> </tr> </table>																															21	535	270	110	105	0	55	265	8	95	30	0	0	7	15	45	0	25	3	0	30	0	0	1	0	0	0	10																																	
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<b>Monographic lecture</b>																																																																																											
SDwPL-10	Modern solutions in science and technology	From	4	100	20	20	0	0	0	80												1	5				1	5																																																															
SDwPL-11	Current issues in science	From	4	100	20	20	0	0	0	80												1	5				1	5																																																															
SDwPL-12	Innovative scientific research	From	4	100	20	20	0	0	0	80												1	5				1	5																																																															
SDwPL-13	Current trends in scientific development	From	4	100	20	20	0	0	0	80												1	5				1	5																																																															
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<b>Subject-specific modules – taught for the discipline</b>																																																																																											
SDwPL-20	Selected scientific topics in discipline I	Z	6	150	45	45	0	0	0	105							2	15				2	15				2	15																																																															
SDwPL-21	Selected scientific topics in discipline II	From	6	150	45	45	0	0	0	105							2	15				2	15				2	15																																																															
SDwPL-22	Research methodology in the discipline	From	2	50	15	15	0	0	0	35												2	15																																																																				
	Selected scientific topics in Discipline III (optional)	From	6	150	45	45	0	0	0	105							2	15				2	15				2	15																																																															
<b>Module 1 - M1</b>																																																																																											
SDwPL-16	Seminar with supervisor	From	64	1600	240	0	0	0	240	1360	8					30	8				30	8				30	8		30																																																														
<b>Module 2 - M2</b>																																																																																											
SDwPL-16	Seminar with supervisor	Z	48	1200	180	0	0	0	180	1020	8					30	8				30	8				30	8		30																																																														
SDwPL-16	Seminar with the supervisor at a partner institution	From	14	350	30	0	0	0	30	320																																																																																	
SDwPL-17	Interdisciplinary lecture at a partner institution	From	2	50	30	30	0	0	0	20																																																																																	
		M1	84	2100	390	150	0	0	240	1710	8	0	0	0	30	14	45	0	0	30	16	60	0	0	30	14	45	0	0	30																																																													
		M2	84	2100	390	180	0	0	210	1710	8	0	0	0	30	14	45	0	0	30	16	60	0	0	30	14	45	0	0	30																																																													
<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td></td> <td><b>Total:</b></td> <td><b>M1</b></td> <td><b>121</b></td> <td><b>3035</b></td> <td><b>740</b></td> <td><b>340</b></td> <td><b>105</b></td> <td><b>0</b></td> <td><b>295</b></td> <td><b>2295</b></td> <td><b>16</b></td> <td><b>95</b></td> <td><b>30</b></td> <td><b>0</b></td> <td><b>30</b></td> <td><b>21</b></td> <td><b>60</b></td> <td><b>45</b></td> <td><b>0</b></td> <td><b>55</b></td> <td><b>23</b></td> <td><b>80</b></td> <td><b>30</b></td> <td><b>0</b></td> <td><b>30</b></td> <td><b>19</b></td> <td><b>65</b></td> <td><b>0</b></td> <td><b>0</b></td> <td><b>40</b></td> </tr> <tr> <td></td> <td></td> <td><b>Total:</b></td> <td><b>M2</b></td> <td><b>121</b></td> <td><b>3035</b></td> <td><b>740</b></td> <td><b>370</b></td> <td><b>105</b></td> <td><b>0</b></td> <td><b>265</b></td> <td><b>2295</b></td> <td><b>16</b></td> <td><b>95</b></td> <td><b>30</b></td> <td><b>0</b></td> <td><b>30</b></td> <td><b>21</b></td> <td><b>60</b></td> <td><b>45</b></td> <td><b>0</b></td> <td><b>55</b></td> <td><b>23</b></td> <td><b>80</b></td> <td><b>30</b></td> <td><b>0</b></td> <td><b>30</b></td> <td><b>19</b></td> <td><b>65</b></td> <td><b>0</b></td> <td><b>0</b></td> <td><b>40</b></td> </tr> </table>																														<b>Total:</b>	<b>M1</b>	<b>121</b>	<b>3035</b>	<b>740</b>	<b>340</b>	<b>105</b>	<b>0</b>	<b>295</b>	<b>2295</b>	<b>16</b>	<b>95</b>	<b>30</b>	<b>0</b>	<b>30</b>	<b>21</b>	<b>60</b>	<b>45</b>	<b>0</b>	<b>55</b>	<b>23</b>	<b>80</b>	<b>30</b>	<b>0</b>	<b>30</b>	<b>19</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>40</b>			<b>Total:</b>	<b>M2</b>	<b>121</b>	<b>3035</b>	<b>740</b>	<b>370</b>	<b>105</b>	<b>0</b>	<b>265</b>	<b>2295</b>	<b>16</b>	<b>95</b>	<b>30</b>	<b>0</b>	<b>30</b>	<b>21</b>	<b>60</b>	<b>45</b>	<b>0</b>	<b>55</b>	<b>23</b>	<b>80</b>	<b>30</b>	<b>0</b>	<b>30</b>	<b>19</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>40</b>
		<b>Total:</b>	<b>M1</b>	<b>121</b>	<b>3035</b>	<b>740</b>	<b>340</b>	<b>105</b>	<b>0</b>	<b>295</b>	<b>2295</b>	<b>16</b>	<b>95</b>	<b>30</b>	<b>0</b>	<b>30</b>	<b>21</b>	<b>60</b>	<b>45</b>	<b>0</b>	<b>55</b>	<b>23</b>	<b>80</b>	<b>30</b>	<b>0</b>	<b>30</b>	<b>19</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>40</b>																																																												
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Course code	Course title	Assessment method	ECTS	Student assignment	Total number of hours						Semester V					Semester VI					Semester VII					Semester VI				
					S	W	L	L	P	Independent study	ECTS	W	L	L	P/S	ECTS	W	L	L	P/S	ECTS	W	L	L	P/S	ECTS	W	L	L	P/S
<b>General subjects</b>																														
SDwPL-00	Health and Safety Training	Z	0	10	5	5	0	0	0	5																				
SDwPL-05	Intellectual property protection	From	1	25	15	15	0	0	0	10																				
SDwPL-06	Technical English	From	2	50	30	0	30	0	0	20																				
SDwPL-01	Research Ethics	From	1	25	15	15	0	0	0	10																				
<b>Core competencies of a researcher</b>																														
SDwPL-09	Applied statistics	Z	1	25	15	15	0	0	0	10																				
SDwPL-02	Methodology of academic writing	From	1	25	15	15	0	0	0	10																				
SDwPL-04	Methodology for preparing research projects	From	1	25	15	15	0	0	0	10																				
SDwPL-03	Research Methodology	from	1	25	15	0	15	0	0	10																				
SDwPL-19	Artificial Intelligence in Science	From	1	25	15	0	0	0	15	10																				
<b>Teaching and dissemination of research findings</b>																														
SDwPL-08	Commercialisation of research results	From	1	25	15	15	0	0	0	10																				
SDwPL-07	Preparation of academic presentations	From	1	25	15	15	0	0	0	10																				
SDwPL-15	PhD workshops	From	4	100	40	0	0	0	40	60																				
SDwPL-14	Teaching practice under supervision	Z	6	150	60	0	60	0	0	90																				
			21	535	270	110	105	0	55	265	0	0	0	0	0	1	0	0	0	10	0	0	0	0	0	1	0	0	0	10
<b>Monographic lecture</b>																														
SDwPL-10	Modern solutions in science and technology	From	4	100	20	20	0	0	0	80	1	5																		
SDwPL-11	Current Issues in Science	From	4	100	20	20	0	0	0	80	1	5																		
SDwPL-12	Innovative scientific research	From	4	100	20	20	0	0	0	80	1	5																		
SDwPL-13	Current trends in scientific development	From	4	100	20	20	0	0	0	80	1	5																		
			16	400	80	80	0	0	0	320	4	20	0	0	0	4	20	0	0	0	0	0	0	0	0	0	0	0	0	
<b>Subject-specific modules – taught for the discipline</b>																														
SDwPL-20	Selected scientific topics in discipline I	Z	6	150	45	45	0	0	0	105																				
SDwPL-21	Selected scientific topics in discipline II	From	6	150	45	45	0	0	0	105																				
SDwPL-22	Research methodology in the discipline	From	2	50	15	15	0	0	0	35																				
	Selected scientific topics in Discipline III (optional)	From	6	150	45	45	0	0	0	105																				
<b>Module 1 - M1</b>																														
SDwPL-16	Seminar with supervisor	Z	64	1600	240	0	0	0	240	1360	8																			
<b>Module 2 - M2</b>																														
SDwPL-16	Seminar with supervisor	Z	48	1200	180	0	0	0	180	1020																				
SDwPL-16	Seminar with a supervisor at a partner institution	From	14	350	30	0	0	0	30	320	7																			
SDwPL-17	Interdisciplinary lecture at a partner institution	From	2	50	30	30	0	0	0	20	1	15																		
		M1	84	2100	390	150	0	0	240	1710	8	0	0	0	30	8	0	0	0	30	8	0	0	0	30	8	0	0	0	30
		M2	84	2,100	390	180	0	0	210	1710	8	15	0	0	15	8	15	0	0	15	8	0	0	0	30	8	0	0	0	30
		<b>Total: M1</b>	<b>121</b>	<b>3035</b>	<b>740</b>	<b>340</b>	<b>105</b>	<b>0</b>	<b>295</b>	<b>2295</b>	<b>12</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>13</b>	<b>20</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>
		<b>Total: M2</b>	<b>121</b>	<b>3,035</b>	<b>740</b>	<b>370</b>	<b>105</b>	<b>0</b>	<b>265</b>	<b>2295</b>	<b>12</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>13</b>	<b>35</b>	<b>0</b>	<b>0</b>	<b>25</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>30</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>40</b>

## V. Matrix of coverage of directional learning outcomes

Course code	Course	SDwPL_W1	SDwPL_W2	SDwPL_W3	SDwPL_W4	SDwPL_W5	SDwPL_W6	SDwPL_W7	SDwPL_U1	SDwPL_U2	SDwPL_U3	SDwPL_U4	SDwPL_U5	SDwPL_U6	SDwPL_U7	SDwPL_U8	SDwPL_U9	SDwPL_U10	SDwPL_U11	SDwPL_K1	SDwPL_K2	SDwPL_K3	SDwPL_K4
SDwPL-00	Health and Safety Training					++												++					+
SDwPL-01	Researcher Ethics				+	+			+			+	++	+	++	++	+++	+++		+++	+++		+++
SDwPL-02	Methodology for writing academic papers		++		+	++	+++	+	+	+	+	++		+++	+	+++	++		+	+		+	++
SDwPL-03	Research Methodology		++	+++		+	++	+	+++	++				++	+	+			+++	++		+	++
SDwPL-04	Methodology for preparing research projects					+++	+	++	+		+++	+++					+		+++			+++	
SDwPL-05	Intellectual property protection	+				+++	+	+			+	++		++	++		+	+	+		++	++	+++
SDwPL-06	Technical English	++			+		+	+			+			+++	+++	+++			+++				++
SDwPL-07	Preparation of academic presentations	+	++		++		+++	+	++	+	+		++	++	+++	+++	+		++	++			++
SDwPL-08	Commercialisation of research results	+++		+		+++	+	+++	+	+	++	+++			+		+		+			+++	
SDwPL-09	Applied statistics		+++	++			+		+++	++				++			+		+	+			
SDwPL-10	Monographic lecture (Modern solutions in science and technology)	+++	+	++	+					++		++	++		+					++		++	
SDwPL-11	Monographic lecture (Current issues in science)		+++	+++		+++	+	+	+++	++	++	++		+++	+++	+++	+++		+	+++	++		+++
SDwPL-12	Monographic lecture (Innovative scientific research)				+++		+	+++				+++	+++		++	++		++	++		+++		
SDwPL-13	Monographic lecture (Current trends in scientific development)				+	+++	++	++			+++	+		+				++	+			+++	+++
SDwPL-14	Teaching practice under supervision	++			+++	+							+++		+	+		+					+
SDwPL-15	PhD workshops	++	+	++	++					++	+			++	+++	++	++			++			+
SDwPL-16	Seminar with supervisor		+	+++	+	+	++		+++	++	++				++	++	+			+	+	+	+
SDwPL-17	Interdisciplinary lecture at a partner institution 1	+		++					+	++			+			++		+	+++	+			++
SDwPL-18	Interdisciplinary lecture at a partner institution 2	+		++					+	++			+			++		+	+++	+			++
SDwPL-19	Artificial intelligence in science		+++	+++						+++	++		+							++	++		++
SDwPL-20	Selected scientific topics in discipline I	+++		+++					++		++									+++	++		
SDwPL-21	Selected scientific topics in discipline II	+++		+++					++		++									+++	++		
-	Advanced scientific aspects in Discipline III (optional)	+++		+++					++		++									+++	++		
SDwPL-22	Research methodology in the discipline		++	+++		+	++		+++	++				++	+	+	+		+++	++		+	+++