

<b>STUDY MODULE DESCRIPTION FORM</b>		
Name of the module/subject <b>Introduction to scientific research</b>		Code <b>1010604161010606966</b>
Field of study <b>Aerospace Engineering</b>	Profile of study (general academic, practical) <b>general academic</b>	Year /Semester <b>3 / 6</b>
Elective path/specialty <b>Aircraft Engines and Airframes</b>	Subject offered in: <b>Polish</b>	Course (compulsory, elective) <b>obligatory</b>
Cycle of study: <b>First-cycle studies</b>	Form of study (full-time, part-time) <b>part-time</b>	
No. of hours Lecture: <b>9</b> Classes: <b>-</b> Laboratory: <b>-</b> Project/seminars: <b>-</b>		No. of credits <b>1</b>
Status of the course in the study program (Basic, major, other) <b>other</b>		(university-wide, from another field) <b>university-wide</b>
Education areas and fields of science and art <b>technical sciences</b> <b>Technical sciences</b>		ECTS distribution (number and %) <b>1 100%</b> <b>1 100%</b>
<b>Responsible for subject / lecturer:</b> dr inż. Wojciech Karpiuk email: wojciech.karpiuk@put.poznan.pl tel. 616475993 Faculty of Transport Engineering ul. Piotrowo 3 60-965 Poznań		<b>Responsible for subject / lecturer:</b> dr inż. Wojciech Karpiuk email: wojciech.karpiuk@put.poznan.pl tel. 616475993 Faculty of Transport Engineering ul. Piotrowo 3 60-965 Poznań
<b>Prerequisites in terms of knowledge, skills and social competencies:</b>		
1	<b>Knowledge</b>	The student has basic technical knowledge in the field of aviation.
2	<b>Skills</b>	The student is able to obtain information from literature, databases and other, properly selected sources.
3	<b>Social competencies</b>	The student understands the need for lifelong learning, can inspire and organize the learning process of other people, understands the need and ability to self-education, has the ability to work in a team.
<b>Assumptions and objectives of the course:</b> Preparation for conducting scientific research, including the preparation of promotional thesis - the main goal. Other goals: - presentation of basic terms in the field of scientific research methodology, - learning the ability to formulate research problems - describing the methodological basis of writing scientific and promotional thesis (basic issues of their technical editing).		
<b>Study outcomes and reference to the educational results for a field of study</b>		
<b>Knowledge:</b> 1. has basic knowledge necessary to understand social, economic, legal and other non-technical conditions of engineering activities - [K1A_W24]		
<b>Skills:</b> 1. can obtain information from literature, the Internet, databases and other sources. Can integrate the information obtained and interpret conclusions and create and justify opinions - [K1A_U04]		
<b>Social competencies:</b> 1. understands the need to learn throughout life; can inspire and organize the learning process of others - [K1A_K01]		
<b>Assessment methods of study outcomes</b>		
Passing the lecture - one-choice test.		
<b>Course description</b>		

<ul style="list-style-type: none"> <li>- definitions in the field of scientific research (science, knowledge, scientific work, methodology, method),</li> <li>- scientific works, promotional works (engineering, master's, doctoral, habilitation),</li> <li>- methodology and construction of the implementation of scientific works (functional and material sense),</li> <li>- principles of conducting scientific research (processing of materials, preparation of results, etc.),</li> <li>- research methods in scientific works (experiment, modeling, simulation),</li> <li>- editing of scientific papers.</li> </ul>		
<b>Basic bibliography:</b> <ol style="list-style-type: none"> <li>1. Leszek W.: Wybrane zagadnienia metodyczne badań empirycznych. Wyd. Instytutu Technologii i Eksploatacji, Radom 2006.</li> <li>2. Pytkowski W.: Organizacja badań i ocena prac naukowych. PWN, Warszawa 1985.</li> </ol>		
<b>Additional bibliography:</b> <ol style="list-style-type: none"> <li>1. Cempel C.: Nowoczesne zagadnienia metodologii i filozofii badań. Instytut Technologii Eksploatacji, Radom?Poznań 2005.</li> <li>2. Kolman R.: Zdobywanie wiedzy. Oficyna Wydawnicza Branta, Bydgoszcz?Gdańsk 2004.</li> <li>3. Kotarbiński T.: Dzieła wszystkie. Elementy teorii poznania, logiki formalnej i metodologii nauk. Ossolineum 1990.</li> <li>4. Leszek W., Wojciechowicz B., Zwierzycki W.: Metodologia generowania i realizacji programów badawczych w nauce o eksploatacji obiektów technicznych. Wyd. Instytutu Technologii Eksploatacji, Radom?Poznań 2004.</li> <li>5. Leszek W.: Badania empiryczne. Wybrane zagadnienia metodyczne. Instytut Technologii Eksploatacji, Radom 1997.</li> <li>6. Leszek W.: Nieempiryczne procedury badawcze w naukach przyrodniczych i technicznych. Instytut Technologii Eksploatacji, Radom 1999.</li> <li>7. Łobocki M. : Metody badań pedagogicznych. PWN, Warszawa 1984.</li> <li>8. Mämmelä A.: How to Get a Ph.D. Methods and Practical Hints. W: III Interdisciplinary Technical Conference of Young Scientists, Intertech, Proceedings. Poznan University of Technology, Poznań 2010.</li> <li>9. Pabis S.: Metodologia nauk empirycznych. Wyd. Uczelniane Politechniki Koszalińskiej, Koszalin 2007.</li> <li>10. Wilson E, Bright J.: Wstęp do badań naukowych. PWN, Warszawa 1968.</li> <li>11. Wisłocki K.: Metodologia i redakcja prac naukowych, Wydawnictwo Politechniki Poznańskiej, 2013.</li> <li>12. Zieleniewski J.: O organizacji badań naukowych. PWE, Warszawa 1975.</li> </ol>		
<b>Result of average student's workload</b>		
<b>Activity</b>	<b>Time (working hours)</b>	
1. Participation in the lecture	9	
2. Consultations	1	
3. Preparation for passing	8	
4. Participation in the completion of the subject	1	
<b>Student's workload</b>		
<b>Source of workload</b>	<b>hours</b>	<b>ECTS</b>
Total workload	19	1
Contact hours	11	1
Practical activities	0	0