MODULE DESCRIPTION

Module code	
Module name	**Metodologia badań naukowych**
Module name in English	**Research Methodology**
Valid from academic year	**2016/2017**

A. MODULE PLACEMENT IN THE SYLLABUS

Field of study	**Management and Production Engineering**
Level of education	**2nd degree** *(1st degree / 2nd degree)*
Studies profile	**General** *(general / practical)*
Form and method of conducting classes	**Full-time** *(full-time / part-time)*
Specialisation	**All**
Unit conducting the module	**The Department of Production Engineering**
Module co-ordinator	**Dariusz Bojczuk, PhD hab., Eng., Professor of the University**
Approved by:	

B. MODULE OVERVIEW

Type of subject/group of subjects	**Other** *(basic / major / specialist subject / conjoint / other HES)*
Module status	**Compulsory** *(compulsory / non-compulsory)*
Language of conducting classes	**English**
Module placement in the syllabus - semester	**2nd semester**
Subject realisation in the academic year	**Winter semester** *(winter semester/ summer)*
Initial requirements	**No requirements** *(module codes / module names)*
Examination	**No** *(yes / no)*
Number of ECTS credit points	**1**

Method of conducting classes	Lecture	Classes	Laboratory	Project	Other
Per semester	**15**				

C. TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Module target	The aims of the module are as follows: acquiring knowledge and skills about methodology of scientific project preparation, about formulation of research hypothesis and writing scientific papers in accordance with the logistics principles, and about methods, techniques and research tools.

Effect symbol	Teaching results	Teaching methods *(l/c/lab/p/other)*	Reference to subject effects	Reference to effects of a field of study
W_01	A student is knowledgeable about scope of research methodology, methods and tools used in research.	l	K_W07	T2A_W02 T2A_W08
W_02	A student has knowledge of hypothesis formulation, writing of reports, master theses, scientific papers in accordance with the logistics principles.	l	K_W07	T2A_W02 T2A_W08
W_03	A student has knowledge of preparation of scientific project, formulation of concept, plan and schedule.	l	K_W07	T2A_W02 T2A_W08
U_01	A student has ability to formulate scientific project (especially subject and scope of master thesis) and to select research methods and tools necessary during its realization.	l	K_U01 K_U13	T2A_U01 T2A_U10 S2A_U06
U_02	A student can formulate research hypothesis and can prepare report, master thesis, scientific paper in accordance with the logistics principles.	l	K_U01 K_U13	T2A_U01 T2A_U10 S2A_U06
K_01	A student understands the necessity of continuous improving his/her knowledge as regards preparing of scientific projects, writing of papers and research methods and tools.	l	K_K01	T2A_K01 T2A_K06

Teaching contents:

1. Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	General knowledge, used divisions of science, main goals and scope of science methodology.	W_01 K_01
2	Research problems and way of its formulation, research hypotheses. Elements of logistics – cognitive and apparent questions, open and closed questions.	W_02 U_01 U_02 K_01
3	Elements of logistics – unambiguous statements and well formulated questions, some examples and their analysis. Application of logistic principles in writing of scientific papers, master theses and reports.	W_02 U_01 U_02 K_01
4	Goals and functions of research. Methods of cognition, e. g. analysis, synthesis, deduction, induction, etc. Types of research e.g. fundamental research, applied research, heuristic research, etc.	W_01 K_01
5	Tasks and kinds of research. Observation method, experimental method, survey method, method of computer simulation, statistical methods, etc.	W_01 K_01
6	Some techniques of research, for example, observation, interview, survey making, etc. Some research tools, for example, survey questionnaire, test, observation sheet, etc.	W_01 K_01
7	Preparation of research projects, preparation of plan and schedule of their	W_01

	realization and selection of research methods and tools.	W_03 U_01 K_01
8	Test of knowledge and abilities acquired during the lecture.	W_01 W_02 W_03 U_01 U_02

2. Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module

3. Teaching contents as regards laboratory classes

Laboratory class number	Teaching contents	Reference to teaching results for a module

4. The characteristics of project assignments

The methods of assessing teaching results

Effect symbol	Methods of assessing teaching results *(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)*
W_01	A test during the lecture.
W_02	A test during the lecture.
W_03	A test during the lecture.
U_01	Homework assignment about plan of preparation of master thesis containing schedule, proposed methods and research tools. A test during the lecture.
U_02	A test during the lecture.
K_01	Comments and discussions, observation of students attitude during the lectures.

D. STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	**Student's workload**
1	Participation in lectures	**15**
2	Participation in classes	
3	Participation in laboratories	
4	Participation in tutorials (2-3 times per semester)	**3**
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	
8		
9	**Number of hours requiring a lecturer's assistance**	**18** *(sum)*
10	**Number of ECTS credit points which are allocated for assisted work** *(1 ECTS point=25-30 hours)*	**0.6**
11	Unassisted study of lecture subjects	**3**
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	
14	Unassisted preparation for laboratories	
15	Preparing reports	
15	Preparing for a final laboratory test	
17	Preparing a project or documentation	**6**
18	Preparing for an examination	
19	Preparing for a test during the lectures	**3**
20	**Number of hours of a student's unassisted work**	**12** *(sum)*
21	**Number of ECTS credit points which a student receives for unassisted work** *(1 ECTS point=25-30 hours)*	**0.4**
22	**Total number of hours of a student's work**	**30**
23	**ECTS points per module** *1 ECTS point=25-30 hours*	**1**
24	**Work input connected with practical classes** *Total number of hours connected with practical classes*	**6**
25	**Number of ECTS credit points which a student receives for practical classes** (1 ECTS point=25-30 hours)	**0.2**

E. LITERATURE

Literature list	1. Apanowicz J., *Metodologia nauk,* Towarzystwo Naukowe Organizacji i Kierownictwa „Dom Organizatora", Toruń 2003. 2. Maćkiewicz J., *Jak pisać teksty naukowe*. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 1996. 3. Marciszewski W., *Metody analizy tekstu naukowego*. Państwowe Wydawnictwo Naukowe, Warszawa 1997. 4. Weiner W., *Technika pisania i prezentowania prac naukowych*. Wydawnictwo Uniwersytetu Jagiellońskiego, Kraków 1992. 5. Węglińska M., *Jak pisać pracę magisterską?,* Oficyna Wydawnicza „Impuls", Kraków 1997.
Module website	