



MODULE SPECIFICATION

Module code	
Module title in Polish	Podstawy fotogrametrii
Module title in English	Fundamentals of Photogrammetry
Module running from the academic year	2016/2017

A. MODULE IN THE CONTEXT OF THE PROGRAMME OF STUDY

Field of study	Surveying and Cartography
Level of qualification	first cycle (first cycle, second cycle)
Programme type	academic (academic/practical)
Mode of study	full-time (full-time/part-time)
Specialism	Full-time (full-time / part-time)
Organisational unit responsible for module delivery	All
Module co-ordinator	The Department of Geotechnical Engineering, Geomatics and Waste Management
Approved by:	Beata Hejmanowska, PhD hab., Eng., Professor the University
	Ryszard Florek-Paszkowski, PhD, Eng.

B. MODULE OVERVIEW

Module type	core module (core/programme-specific/elective HES*)
Module status	compulsory module (compulsory/optional)
Language of module delivery	English
Semester in the programme of study in which the module is taught	semester 6
Semester in the academic year in which the module is taught	summer semester (winter semester/summer semester)
Pre-requisites	No requirements (module code/module title, where appropriate)
Examination required	No (Yes/No)
ECTS credits	5

* elective HES – elective modules in the Humanities and Economic and Social Sciences



Politechnika Świętokrzyska

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Mode of instruction	lectures	classes	laboratories	project	others
Total hours per semester	15		15	15	



C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	The aim of the object is the acquisition of basic knowledge from the scope of basic photogrammetry. Students get basic knowledge on airborne image distortion and geometrical correction of photogrammetric images. The objectives of lecture and projects are to familiarize students with theoretical background of photogrammetry and its practical
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Module outcome code	Module learning outcomes	Mode of instruction (l/lc/lab/p/others)	Corresponding programme outcome code	Corresponding discipline-specific outcome code
W_01	Students get basic knowledge of the acquisition of photogrammetric images.	l/lp	GiK_W19	T1 A_W03 T1 A_W05 T1 A_W07
W_02	Students acquire basic knowledge about sources of the error on photogrammetric images.	l/lp	GiK_W02	T1 A_W01 T1 A_W03
W_03	Students have basic knowledge about geometrical corrections of airborne images.	l/lp	GiK_W02	T1 A_W01 T1 A_W03
U_01	Students have practical ability of the geometric quality assessment of the airborne images.	l/p	GiK_U04 GiK_U17	T1A_U01, T1A_U06 T1A_U08 T1A_U14
U_02	Students are able to generate orthophotomaps from airborne images.	l/p	GiK_U04 GiK_U17	T1A_U01, T1A_U06 T1A_U08 T1A_U14
K_01	Students understand law aspects of application of photogrammetric products.	l/lp	GiK_K05	T1A_K02
K_02	Students understand the role of photogrammetric products in the decision-making process.	l/lp	GiK_K06	T1A_K03

Module content:

1. Topics to be covered in the lectures

No.	Topics	Module outcome code
1.	Applications of photogrammetry, photogrammetric products, and photogrammetry as source of input data in GIS.	W_01 K_01
2.	Coordinate systems and coordinate transformations. Basic image geometry. Image scale calculation.	W_01 W_02
3-4.	The analysis of the geometrical errors of airborne images. Internal and external image orientation. Orthophotomap generation basing on the external image orientation and Digital Terrain Model (DTM).	W_02 W_03
5.	Stereo model building basing on the 2 airborne images. DTM generation.	W_03 K_01 K_02

2. Topics to be covered in the laboratories

No.	Topics	Module outcome code
1-2	Analysis of geometrical errors of airborne images.	W_01 W_02 W_03 U_01
3.	Measurements on the images.	U_01 U_02



4-5.	Stereo model building.	U_01 U_02 K_01 K_02
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3. Topics to be covered in the project

No.	Topics	Module outcome code
1.	The analysis of the geometrical errors of airborne images.	W_02 W_03 U_01
2-3.	Orthophotomap generation.	W_01 U_02 K_01 K_02
4-5.	Stereo model generation.	W_02 W_03 U_01

Assessment methods

Module outcome code	Assessment methods <i>(Method of assessment; for module skills – reference to specific project, laboratory and similar tasks)</i>
GiK_W_01	A test and an examination, laboratory projects
GiK_W_02	A test and an examination, laboratory projects
GiK_W_03	A test and an examination
GiK_U_01	A test and an examination
GiK_U_02	A test and an examination
GiK_K_01	A test, discussions during final tutorials
GiK_K_02	Laboratory projects, discussions during final tutorials

D. STUDENT LEARNING ACTIVITIES

ECTS summary		
	Type of learning activity	Study time/credits
1	Contact hours: participation in lectures	15
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	15
4	Contact hours: attendance at office hours (2-3 appointments per semester)	5
5	Contact hours: participation in project-based classes	15
6	Contact hours: meetings with a project module leader	5
7	Contact hours: attendance at an examination	5
8		



9	Number of contact hours	60 <i>(total)</i>
10	Number of ECTS credits for contact hours <i>(1 ECTS credit =25-30 hours of study time)</i>	2.4
11	Private study hours: background reading for lectures	10
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	10
14	Private study hours: preparation for laboratories	5
15	Private study hours: writing reports	15
16	Private study hours: preparation for a final test in laboratories	
17	Private study hours: preparation of a project/a design specification	15
18	Private study hours: preparation for an examination	10
19		
20	Number of private study hours	65 <i>(total)</i>
21	Number of ECTS credits for private study hours <i>(1 ECTS credit =25-30 hours of study time)</i>	2.6
22	Total study time	125
23	Total ECTS credits for the module <i>(1 ECTS credit =25-30 hours of study time)</i>	5
24	Number of practice-based hours <i>Total practice-based hours</i>	70
25	Number of ECTS credits for practice-based hours <i>(1 ECTS credit =25-30 hours of study time)</i>	2.8

E. READING LIST

References	
Module website	