Politechnika Świętokrzyska

WYDZIAŁ INŻYNIERII ŚRODOWISKA, GEOMATYKI I ENERGETYKI

MODULE SPECIFICATION

Module code	
Module title in Polish	**Historia techniki i wynalazków**
Module title in English	**History of technology and inventions**
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	
Organisational unit responsible for module delivery	Center of Intellectual Property Protection
Module co-ordinator	
Approved by:	

B. MODULE OVERVIEW

Module type	Elective HES (core/programme-specific/elective HES*)
Module status	compulsory module (compulsory/optional)
Language of module delivery	polish
Semester in the programme of study in which the module is taught	semester 4
Semester in the academic year in which the module is taught	summer semester (winter semester/summer semester)
Pre-requisites	None (module code/module title, where appropriate)
Examination required	No (Yes/No)
ECTS credits	1

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

Politechnika Świętokrzyska
al. Tysiąclecia Państwa Polskiego 7; 25-314 Kielce
tel.: 41 34 24 850, fax: 41 34 42 860
e-mail: wisge@tu.kielce.pl

www.tu.kielce.pl

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

C. LEARNING OUTCOMES AND ASSESSMENT METHODS

Module aims	Presentation of the most important inventions in history and selected themes from the history of technology.

Module outcome code	Module learning outcomes	Mode of instruction (l/c/lab/p/ others)	Corresponding programme outcome code	Corresponding discipline-specific outcome code
W_01	The student has knowledge of the history of technology, in particular on the history of the construction, the materials used, the development of electronics and computer systems.	L	GiK_W04, GiK_W07, GiK_W26	T1A_W05, T1A_W06, T1A_W07, T1A_W10
W_02	The student has detailed knowledge about the history of the equipment and technological systems used in geodesy and cartography.	L	GiK_W09	T1A_W03
W_03	The student has knowledge of the history of inventions and protection of rights to inventions.	L	GiK_W29	T1A_W10
U_01	The student is able to obtain information from the literature, it can combine the information obtained, to make their interpretation and evaluation, as well as draw conclusions and formulate and justify their opinions on the history of technology.	L	GiK_U01	T1A_U01
U_02	The student is able to analyze and evaluate the functioning of the existing past and present technical solutions.	L	GiK_U21	T1A_U15
K_01	The student is aware of the need to raise professional and personal competences, isolated complements and extends the knowledge of the history of technology.	L	GiK_K01, GiK_K02	T1A_K01, T1A_K02, T1A_K05
K_02	The student understands the importance of technical progress and the need for implementation of technical solutions in environmental engineering, understand the non-technical aspects of the engineering activities of the former and today.	L	GiK_K03, GiK_K05	T1A_K02

Module content:

1. Topics to be covered in the lectures
2. Topics to be covered in the classes
3. Topics to be covered in the laboratories

No.	Topics	Module outcome code
1, 2.	The earliest civilizations.	W_01, W_02, W_03, U_01, U_02, K_01, K_02
3, 4.	Ancient civilizations.	W_01, W_02, W_03, U_01, U_02, K_01, K_02

Politechnika Świętokrzyska
al. Tysiąclecia Państwa Polskiego 7; 25-314 Kielce
tel.: 41 34 24 850, fax: 41 34 42 860
e-mail: wisge@tu.kielce.pl

www.tu.kielce.pl

5, 6.	Medieval technology.	W_01, W_02, W_03, U_01, U_02, K_01, K_02
7, 8.	Engineers of the Renaissance.	W_01, W_02, W_03, U_01, U_02, K_01, K_02
9, 10.	Scientific Revolution.	W_01, W_02, W_03, U_01, U_02, K_01, K_02
11, 12.	*The Industrial Revolution.*	W_01, W_02, W_03, U_01, U_02, K_01, K_02
13, 14.	The beginning of modernity.	W_01, W_02, W_03, U_01, U_02, K_01, K_02
15.	The beginning of globalization.	W_01, W_02, W_03, U_01, U_02, K_01, K_02

Assessment methods

Module outcome code	Assessment methods *(Method of assessment; for module skills − reference to specific project, laboratory and similar tasks)*
W_01	Discussion and evaluation of individual work.
W_02	Discussion and evaluation of individual work.
W_03	Discussion and evaluation of individual work.
U_01	Discussion and evaluation of individual work.
U_02	Discussion and evaluation of individual work.
K_01	Observation of attitude the student during classes.
K_02	Observation of attitude the student during classes.

Politechnika Świętokrzyska
al. Tysiąclecia Państwa Polskiego 7; 25-314 Kielce
tel.: 41 34 24 850, fax: 41 34 42 860
e-mail: wisge@tu.kielce.pl

www.tu.kielce.pl

D. STUDENT LEARNING ACTIVITIES

	ECTS summary	
	Type of learning activity	**Study time/ credits**
1	Contact hours: participation in lectures	**15 h**
2	Contact hours: participation in classes	
3	Contact hours: participation in laboratories	
4	Contact hours: attendance at office hours (2-3 appointments per semester)	**2 h**
5	Contact hours: participation in project-based classes	
6	Contact hours: meetings with a project module leader	
7	Contact hours: attendance at an examination	
8		
9	**Number of contact hours**	**17 h** *(total)*
10	**Number of ECTS credits for contact hours** *(1 ECTS credit =25-30 hours of study time)*	**0,68**
11	Private study hours: background reading for lectures	**3 h**
12	Private study hours: preparation for classes	
13	Private study hours: preparation for tests	
14	Private study hours: preparation for laboratories	
15	Private study hours: writing reports	
16	Private study hours: preparation for a final test in laboratories	
17	Private study hours: preparation of a project/a design specification	**5 h**
18	Private study hours: preparation for an examination	
19		
20	**Number of private study hours**	**8 h** *(total)*
21	**Number of ECTS credits for private study hours** *(1 ECTS credit =25-30 hours of study time)*	**0,32**
22	**Total study time**	**25 h**
23	**Total ECTS credits for the module** *(1 ECTS credit =25-30 hours of study time)*	**1**
24	**Number of practice-based hours** *Total practice-based hours*	
25	**Number of ECTS credits for practice-based hours** *(1 ECTS credit =25-30 hours of study time)*	

E. READING LIST

References	*1001 Inventions That Changed the World*, ed. J. Challoner, London 2009. *An Encyclopedia of the History of Technology*, ed. McNeil I, London 1990. Craughwell T. J., *The Book of Invention*, New York 2008. Derry T. K., Williams T. I., *A Short History of Technology. From the Earliest Times to A.D. 1900*, New York 1993. Headrick D. R., *Technology. A World History*, Oxford 2009.

Politechnika Świętokrzyska
al. Tysiąclecia Państwa Polskiego 7; 25-314 Kielce
tel.: 41 34 24 850, fax: 41 34 42 860
e-mail: wisge@tu.kielce.pl

www.tu.kielce.pl

	Hodges H., *Technology in the Ancient World*, New York 1992. Pacey A., *Technology in World Civilization. A Thousand-Year History*, Cambridge 1991.
Module website	

Politechnika Świętokrzyska
al. Tysiąclecia Państwa Polskiego 7; 25-314 Kielce
tel.: 41 34 24 850, fax: 41 34 42 860
e-mail: wisge@tu.kielce.pl

www.tu.kielce.pl