

MODULE DESCRIPTION

Module code	Z-ZIP-484z
Module name	Komputerowe wspomaganie zarządzania produkcją
Module name in English	Computer-Aided Production Management
Valid from academic year	2016/2017

A. MODULE PLACEMENT IN THE SYLLABUS

Field of study	Management and Production Engineering
Level of education	1st degree <i>(1st degree / 2nd degree)</i>
Studies profile	General <i>(general / practical)</i>
Form and method of conducting classes	Full-time <i>(full-time / part-time)</i>
Specialisation	Production and Innovations Management
Unit conducting the module	The Department of Production Engineering
Module co-ordinator	Sławomir Luściński, PhD
Approved by:	

B. MODULE OVERVIEW

Type of subject/group of subjects	Specialist subject <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	Compulsory <i>(compulsory / non-compulsory)</i>
Language of conducting classes	English
Module placement in the syllabus - semester	7th semester
Subject realisation in the academic year	Winter semester <i>(winter semester/ summer)</i>
Initial requirements	Production Management, Operational Research <i>(module codes / module names)</i>
Examination	No <i>(yes / no)</i>
Number of ECTS credit points	2

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

C. TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

Module target	The aim of the module is to: familiarise students with the systematics, structure, and functionality of computer systems of production management support; acquaint students with practical skills as regards formulating and solving the selected one- and multi-criteria decision issues appearing in production management using a spreadsheet.
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Effect symbol	Teaching results	Teaching methods <i>(l/c/lab/p/other)</i>	Reference to subject effects	Reference to effects of a field of study
W_01	A student has basic knowledge as regards the structure and functionality of IT systems of production management support. A student also knows and understands the applied typologies and basic properties of IT systems in production management.	l	K_W14 K_W09	T1A_W04 InzA_W02 InzA_W04 InzA_W05
W_02	A student has knowledge as regards spreadsheet functionality used in decision-making support based on models.	lab	K_W01 K_W05	T1A_W01 T1A_W07 InzA_W02 T1A_W03 S1A_W06
U_01	A student is able to make simple financial analyses connected with making decision in production management (taking optimisation elements into consideration).	lab	K_U12	TA1_U09 TA1_U12 SA1_U03 InzA_U02
U_02	A student is able to utilise the learnt mathematical models and methods as well as computer simulations in the processes of analysing and assessing management as well as production decisions.	lab	K_U14	TA1_U07 TA1_U08 TA1_U09 InzA_U01 InzA_U02
U_03	A student is able to assess the usefulness of a spreadsheet in solving problems as regards making decisions in terms of production management.	lab	K_U19	TA1_U13 TA1_U15 InzA_U05 InzA_U07
K_01	A student is aware of the responsibility for his/her own work; a student is also able to conform to teamwork principles and bear responsibility for the tasks realised collectively.	lab	K_K03	T1A_K03 T1A_K04

Teaching contents:

1. Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	The IT system for basic activity support in a manufacturing enterprise The evolution of planning and production control systems. Technical preparation of production, planning production and supply sale, production registering and accounting, registering material stock and turnover, and registering ready product stocks and turnovers.	W_01
2-3	Supply management and material management MRP I support systems Dependent demand and universal production equation. Bill of materials (BOM). The procedure of balancing material requirement in the MRP model. MRP algorithm.	W_01 U_02
4	Production planning and control MRP II support systems	W_01

	Activity phases and planning levels in the MRP II system. MRP II systems functionality. Management in the MRP II closed loop. Assessing the benefits and implementing MRP II.	
5	ERP/ERP II management support systems The functionality of ERP systems, development trends. ERP system functionality illustrated by a selected and comprehensively integrated management support system.	W_01
6	Production management MES support systems The genesis and notion of MES. Key functions of the MES systems. Examples of IT MES solutions.	W_01
7	Computer-integrated manufacturing (CIM) systems The genesis and notion of CIM. The description of basic elements, main concepts or realising CIM environment. The examples of CIM complex information solutions.	W_01
8	A final test	

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
1-2	Decision-making support based on models using the simulation analysis method The principles of building a spreadsheet application. The tools of simulation analysis: scenarios, data tables (tabular functions). The break-even point analysis (critical point analysis): problem description, mathematical model, spreadsheet structure, problem solving, and sensitivity analysis.	W_02 U_01 U_02 U_03 K_01
3-4	Decision-making support based on models using a linear program – the issue of production optimisation Production assortment optimisation for profit maximisation: problem description, mathematical model, spreadsheet structure, problem solving, and sensitivity analysis.	W_02 U_01 U_02 U_03 K_01
5-8	Decision-making support based on models using macros and database functions Material requirement planning in the MRP model: problem description, mathematical model, spreadsheet structure, problem solving, and sensitivity analysis.	W_02 U_02 U_03 K_01

4. The characteristics of project assignments

The methods of assessing teaching results

Effect symbol	Methods of assessing teaching results <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	A final test.
W_02	An assignment for independent completion in a team; a discussion during laboratory classes.
U_01	An assignment for independent completion in a team; a discussion during laboratory classes.
U_02	An assignment for independent completion in a team; a discussion during laboratory classes.
U_03	An assignment for independent completion in a team; a discussion during laboratory classes.
K_01	An assignment for independent completion in a team; a discussion during laboratory classes.

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	15
4	Participation in tutorials (2-3 times per semester)	6
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	
8		
9	Number of hours requiring a lecturer's assistance	36 <i>(sum)</i>
10	Number of ECTS credit points which are allocated for assisted work <i>(1 ECTS point=25-30 hours)</i>	1.1
11	Unassisted study of lecture subjects	10
12	Unassisted preparation for classes	
13	Unassisted preparation for tests	5
14	Unassisted preparation for laboratories	5
15	Preparing reports	10
16	Preparing for a final laboratory test	
17	Preparing a project or documentation	
18	Preparing for an examination	
19		
20	Number of hours of a student's unassisted work	30 <i>(sum)</i>
21	Number of ECTS credit points which a student receives for unassisted work <i>(1 ECTS point=25-30 hours)</i>	0.9
22	Total number of hours of a student's work	66
23	ECTS points per module <i>1 ECTS point=25-30 hours</i>	2
24	Work input connected with practical classes <i>Total number of hours connected with practical classes</i>	32
25	Number of ECTS credit points which a student receives for practical classes <i>(1 ECTS point=25-30 hours)</i>	0.97

E. LITERATURE

Literature list	<ol style="list-style-type: none"> 1. Banaszak Z. i inni, <i>Zintegrowane systemy zarządzania</i>, Państwowe Wydawnictwo Ekonomiczne, Warszawa 2011. 2. Szmczak M. (red.), <i>Decyzje logistyczne z Excelem</i>, Difin, Warszawa 2011. 3. Januszewski, A. <i>Funkcjonalność informatycznych systemów zarządzania</i>. Tom 1., Wydawnictwo Naukowe PWN, Warszawa 2008. 4. Januszewski, A. <i>Funkcjonalność informatycznych systemów zarządzania</i>. Tom 2., Wydawnictwo Naukowe PWN, Warszawa 2008. 5. Pająk E., <i>Zarządzanie produkcją. Produkt, technologia, organizacja</i>, PWN, Warszawa 2006. 6. Trzaskalik A. <i>Wprowadzenie do badań operacyjnych z komputerem</i>, Polskie Wydawnictwo Ekonomiczne, Warszawa 2003. 7. Walkenbach J., <i>Excel 2010 PL. Biblia</i>, Helion, Gliwice 2011.
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	8. Walkenbach. <i>Excel 2010 PL. Programowanie w VBA</i> , Helion, Gliwice 2011.
Module website	