

## MODULE DESCRIPTION

Module code	<b>Z-ZIP-072z</b>
Module name	<b>Zarządzanie produkcją</b>
Module name in English	<b>Production Management</b>
Valid from academic year	<b>2016/2017</b>

## A. MODULE PLACEMENT IN THE SYLLABUS

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

## B. MODULE OVERVIEW

Type of subject/group of subjects	<b>Major</b> <i>(basic / major / specialist subject / conjoint / other HES)</i>
Module status	<b>Compulsory</b> <i>(compulsory / non-compulsory)</i>
Language of conducting classes	<b>English</b>
Module placement in the syllabus - semester	<b>5th semester</b>
Subject realisation in the academic year	<b>Winter semester</b> <i>(winter / summer)</i>
Initial requirements	<b>No requirements</b> <i>(module codes / module names)</i>
Examination	<b>Yes</b> <i>(yes / no)</i>
Number of ECTS credit points	<b>4</b>

<b>Method of conducting classes</b>	<b>Lecture</b>	<b>Classes</b>	<b>Laboratory</b>	<b>Project</b>	<b>Other</b>
<b>Per semester</b>	<b>30</b>	<b>15</b>			

### C. TEACHING RESULTS AND THE METHODS OF ASSESSING TEACHING RESULTS

<b>Module target</b>	The aim of the module is to familiarise students with organising the production process and production activity in an enterprise and the methods as well as techniques used in problem solving concerning production and services management.
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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 knows and understands basic notions connected with production; a student also knows the principles concerning production management in an organisation. In addition, a student is familiar with the methods, tools, and systems of controlling production.	l/c	K_W13	T1A_W09 T1A_W11
W_02	A student has knowledge concerning the organisation of the production process as well as production activity in an enterprise.	l/c	K_W09 K_W14	T1A_W04
U_01	A student is able to use appropriately selected techniques and methods to make decisions and solve the issues in production management.	c	K_U19	T1A_U13 T1A_U15
U_02	A student can determine production assortment, follow shopping policy, prepare a production schedule which guarantee meeting deadlines based on the learnt techniques and methods.	c	K_U02	T1A_U02
U_03	A student is able to use appropriately selected indicators for balancing the production line and assessment of various options as regards production capacity.	c	K_U18	TA1_U16 TA1_U13
U_04	A student can make analyses and interpretations of the phenomena and processes appearing in production activity.	l/c	K_U01 K_U18	TA1_U01 TA1_U16 TA1_U13
K_01	A student is aware of the importance and understands non-technical aspects and effects of engineering activity, particularly in the field of production management; a student is also aware of the responsibility for the decisions made; a student understands the necessity of continuing educational advancement.	l/c	K_K01 K_K02	T1A_K01 T1A_K02 S1A_K01 S1A_K06
K_02	A student is able to think and act in a resourceful manner; a student can also search the most optimal solution to a problem.	l/c	K_K05	T1A_K06

#### Teaching contents:

##### 1. Teaching contents as regards lectures

Lecture number	Teaching contents	Reference to teaching results for a module
1	<u>Introduction to production management</u> : Basic notions: production and services, production system and production process, manufacturing and technological processes. Principal functions of enterprises. The frames and management strategies concerning production and services activities.	W_01
2-3	<u>Product</u> : satisfying customer needs. R&D activity. Sequential and integrated product development. Product designing (parallel and sequential), designing costs. Product diversity. Quality. Reliability. Product life cycle.	W_01 W_02 U_03

4-5	<u>Technological operations in the engineering industry</u> : Founding, plastic working, welding, and machining. Selecting a technological process and material, construction producibility, decision-making techniques, and support systems.	W_01 W_02 U_03
6	<u>Process</u> : Organisation and production flow: the job approach, batch and flow methods, the group approach, and the production-line approach.	W_01 W_02 U_03
7	<u>Process</u> : Job, batch, and mass (flow) production. Designing production and services systems. Group technology. Flexible manufacturing systems.	W_01 W_02 U_03
8	<u>Process</u> : Productive capacity. Work environment and work effectiveness. Work measurement methods.	W_01 W_02 U_03
9	<u>Enterprise</u> : Location. Object location criteria. Technological, subject, and mixed structure.	W_01 W_02 U_03
10	<u>Enterprise</u> : Selecting production equipment. Exploitation servicing of facilities and equipment.	W_01 W_02 U_03
11	<u>Controlling basic enterprise activity</u> : coupling with marketing. Demand forecasting. Functions of controlling.	W_01 W_02 U_03
12	<u>Material Requirements Planning (MRP)</u> : Materials management. The types of materials. Supply cycle. MRP I procedure.	W_01 W_02 U_03
13	<u>Inventory management in the production process</u> : Reserves retention; raw material stock; production reserves in the course, reserves of ready products. The cost of creating and maintaining reserves/inventory. Reserve stock/inventory and safety margin.	W_01 W_02 U_03
14-15	<u>Planning systems and production control</u> : Manufacturing Resource Planning (MRP II). The 'just-in-time' (JIT) concept. KANBAN suction control system. Lean production.	W_01 W_02 U_01 U_03

## 2. Teaching contents as regards classes

Class number	Teaching contents	Reference to teaching results for a module
1	Utilising the Pareto Analysis in decision-making as regards production management.	W_01 W_02 U_01 U_04 K_01 K_02
2	Utilising the graphical methods to determine the assortment of the manufactured goods as well as to pursue raw material purchase policy with the given constraining conditions.	W_01 W_02 U_01 U_02 U_04 K_01 K_02
3-4	Utilising the MRP method for determining the quantity and deadlines of production and orders to suppliers.	W_01 W_02 U_01 U_02 U_04 K_01 K_02
5	Balancing the production line.	W_01

		W_02 U_01 U_03 U_04 K_01 K_02
6	Assessment methods of various options as regards production capacity.	W_01 W_02 U_01 U_03 U_04 K_01 K_02
7	A final test.	

### 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 <i>(assessment method, including skills – reference to a particular project, laboratory assignments, etc.)</i>
W_01	An examination in the form of a test; a test during the classes.
W_02	An examination in the form of a test; a test during the classes.
U_01	A test during the classes, regular preparation for the classes and initiative.
U_02	A test during the classes, regular preparation for the classes and initiative.
U_03	A test during the classes, regular preparation for the classes and initiative.
U_04	An examination in the form of a test; a test during the classes; regular preparation for the classes and initiative.
K_01	Observing a student during the classes.
K_02	Observing a student during the classes.

## D. STUDENT'S INPUT

ECTS credit points		
	Type of student's activity	Student's workload
1	Participation in lectures	30
2	Participation in classes	15
3	Participation in laboratories	
4	Participation in tutorials (2-3 times per semester)	10
5	Participation in project classes	
6	Project tutorials	
7	Participation in an examination	2
8		
9	<b>Number of hours requiring a lecturer's assistance</b>	<b>57</b> <i>(sum)</i>
10	<b>Number of ECTS credit points which are allocated for assisted work</b> <i>(1 ECTS point=25-30 hours)</i>	<b>2.3</b>
11	Unassisted study of lecture subjects	15
12	Unassisted preparation for classes	3
13	Unassisted preparation for tests	10
14	Unassisted preparation for laboratories	
15	Preparing reports	
15	Preparing for a final laboratory test	
17	Preparing a project or documentation	
18	Preparing for an examination	15
19		
20	<b>Number of hours of a student's unassisted work</b>	<b>43</b> <i>(sum)</i>
21	<b>Number of ECTS credit points which a student receives for unassisted work</b> <i>(1 ECTS point=25-30 hours)</i>	<b>1.7</b>
22	<b>Total number of hours of a student's work</b>	<b>100</b>
23	<b>ECTS points per module</b> <i>1 ECTS point=25-30 hours</i>	<b>4</b>
24	<b>Work input connected with practical classes</b> <i>Total number of hours connected with practical classes</i>	<b>38</b>
25	<b>Number of ECTS credit points which a student receives for practical classes</b> <i>(1 ECTS point=25-30 hours)</i>	<b>1.5</b>

## E. LITERATURE

Literature list	<ol style="list-style-type: none"> <li>1. Muhlemann A.P., Oakland J.S., Keith G.L., <i>Zarządzanie, produkcja i usługi</i>, Wydawnictwo Naukowe PWN, Warszawa 2001.</li> <li>2. Waters D., <i>Zarządzanie operacyjne. Towary i usługi</i>, Wydawnictwo Naukowe PWN, Warszawa 2007,</li> <li>3. Pająk E., <i>Zarządzanie produkcją. Produkt, technologia, organizacja</i>, PWN, Warszawa 2006.</li> <li>4. Dwiliński L., <i>Zarządzanie produkcją</i>, Oficyna Wydawnicza Politechniki Warszawskiej, Warszawa 2002.</li> <li>5. Sarjusz-Wolski Z., <i>Sterowanie zapasami</i>, Polskie Wydawnictwo Ekonomiczne, Warszawa 2000.</li> <li>6. Bozarth C., Handfield R.B., <i>Wprowadzenie do zarządzania operacjami</i></li> </ol>
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	<i>i łańcuchem dostaw</i> , Wydawnictwo Helion, Gliwice 2007.
Module website	