

(faculty stamp)

COURSE DESCRIPTION

Z1-PU7

WYDANIE N1

Strona 1 z 2

1. Course title: PRODUCTION CONTROL		2. Course code S I-AiIP/30a		
3. Validity of course description: 2017/2018				
4. Level of studies: 1 st cycle of higher education				
5. Mode of studies: intramural studies				
6. Field of study: AUTOMATICS AND INDUSTRIAL INFORMATICS			(RG)	
7. Profile of studies: practical profile				
8. Programme:				
9. Semester: 5				
10. Faculty teaching the course: Faculty of Mining and Geology, Department of Mining Management and Safety Engineering				
11. Course instructor: Anna Manowska, Ph.D.				
12. Course classification: specialty items				
13. Course status: elective				
14. Language of instruction: English				
15. Pre-requisite qualifications: Data bases (SQL), Basics of programming.				
16. Course objectives: The objective of this course is to familiarize students with the current state of knowledge in management and control. Selected algorithms for production planning and control (MRP, CRP, SFC, MPS, JIT, Kanban) and methods of follow-up control of production will be analyzed. Wide theme of the subject and the practical possibilities of its use should encourage students to further individual studies.				
17. Description of learning outcomes:				
Nr	Learning outcomes description	Method of assessment	Teaching methods	Learning outcomes reference code
1.	Knows and understands the mathematical tools useful to describe the processes related to the life cycle of equipment, facilities and technical systems	Written test, defending project	Lectures, project	K_W01++
2.	Knows and understands the basic principles of economics and management as well as the principles of creating and developing forms of enterprise, including individual	Individual problem solving during class	Lectures, project	K_W07+++
3.	Can present and evaluate different views and positions as well as discuss them using specialized terminology (including English)	Individual problem solving during class	Project	K_U16++
4.	Is able to plan experiments and to work individually or in a group	Individual problem solving during class	Project	K_U17+++
5.	Can independently plan and implement self-learning throughout life	Individual problem solving during class	Lectures, project	K_U18++
6.	Is willing to critically evaluate their knowledge, understands its importance in solving cognitive, especially practical problems	Individual problem solving during class	Lectures, project	K_K01++
18. Teaching modes and hours				
Lecture 15 h, Project 15 h				
19. Syllabus description:				
Lectures:				
Basic concepts of production planning and control. Decision-making and aggregate production planning tactics, The division of production tasks and resources. MRP method. Management and control systems in computer integrated manufacturing (CIM). Y model (Scheer) of the functional structure of the CIM system. Decision variables in the production management method (MRP II). Functional structures of MRP II systems. MRPII standard by APICS. MRP II system data structure. Tree structure of the product (BOM). Material index (M). Material Requirements Planning (MRP). Basic itineraries. Lead times for implementation of typical work orders. Data processing system in MRP algorithm. Shop Floor Control (SFC) using reverse scheduling. Restrictions on work orders. Working centres' load. Capacity Requirement Planning (CRP) algorithm of				

operating centers. Classical methods of inventory control. The optimal lot size with constant demand. The problem of dynamic lot-sizing and its importance in MRP II systems. Algorithms "lot to lot", "economic lot size," Silver-Meal and Wagner-Within. Theory of constraints. OPT method of production control. ERP standard. Functional areas of ERP systems. Methods of ERP systems implementation. Trends in ERP systems development.

Project:

Analysis of the sample production process. Technical preparation of the sample production process (the tree structure of the product, storage index, flow of materials in the production process). Application of selected methods of intracellular control of production flow.

20. Examination: No

21. Primary sources:

1. Browne J., Harhen J., Shivnan J.: Production Management System An Integrated Perspective. Addison Wesley, 1996
2. Brzeziński M.: Organizacja i sterowanie produkcją. Projektowanie systemów produkcyjnych i procesów sterowania produkcją. Placet, Warszawa, 2002.
3. Brzozowski W. i inni: Zintegrowane systemy zarządzania. Opole 2002.

22. Secondary sources:

1. Kijewska A.: Systemy Informatyczne w Zarządzaniu. Wydawnictwo Pol. Śl. Gliwice 2005
2. Wróblewski K.J.: Podstawy sterowania przepływem produkcji. WNT, Warszawa 1993.

23. Total workload required to achieve learning outcomes

Lp.	Teaching mode :	Contact hours / Student workload hours
1	Lecture	15/30 – including reading bibliography (10) individual preparation (15), writing the test (5)
2	Classes	
3	Laboratory	
4	Project	15/30 – including reading bibliography (10) discussing project task (20) consultations (10) project preparation (5) defending the project (5)
5	BA/ MA Seminar	
6	Other	
	Total number of hours	30/60

24. Total hours: 90

25. Number of ECTS credits: 3

26. Number of ECTS credits allocated for contact hours: 2

27. Number of ECTS credits allocated for in-practice hours (laboratory classes, projects): 2

28. Comments:

Approved:

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(date, Instructor's signature)

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(date, the Director of the Faculty Unit signature)