COURSE DESCRIPTION CARD - SYLLABUS

Course name
Logistics and production planning [N2Inf1-IWPB>LOG]

Course

Field of study
Computing

Year/Semester
1/2

Area of study (specialization)
Information Technology in Business Processes

Profile of study
general academic

Level of study
second-cycle

Course offered in
Polish

Form of study
part-time

Requirements
compulsory

Number of hours

Lecture
16

Laboratory classes
16

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

4,00

Coordinators

dr inż. Jacek Lewandowicz

Lecturers

dr inż. Natalia Pawlak
natalia.pawlak@put.poznan.pl

dr inż. Arkadiusz Zimniak
arkadiusz.zimniak@put.poznan.pl

Prerequisites

-

Course objective

1. Providing students with basic knowledge of business management, including planning production and use of enterprise resources. 2. Developing students' ability to identify enterprise information processes in the field of production planning and logistics.

Course-related learning outcomes

Knowledge:
has advanced and detailed knowledge of the processes occurring in the systems life cycle enterprise information (K2st_W5)
has knowledge of development trends and the most important new developments in the field of processes enterprise information in the field of production planning and logistics (K2st_W4)

and advanced detailed knowledge of selected process issues
enterprise information in the field of production planning and logistics (K2st_W3)
knows advanced methods, techniques and tools used to solve complex tasks
engineering and conducting research in the field of enterprise information processes
(K2st_W6)

Skills:
is able to assess the usefulness and possibility of using new achievements (methods and tools) in the field
production planning and logistics (K2st_U6)
is able to critically analyze existing solutions in the field of production planning and logistics
(K2st_U8)
is able to integrate knowledge in the field when formulating and solving engineering tasks
production planning and logistics (K2st_U5)
is able to obtain information from literature, databases and other sources (in Polish and
English), integrate them, interpret and critically evaluate them, draw conclusions and
formulate and fully justify opinions (K2st_U1)
is able to assess the usefulness of methods and tools used to solve an engineering task in the field
production planning and logistics (K2st_U9)
is able to cooperate in a team, taking on various roles in it (K2st_U15)
is able to design a system in accordance with a given specification, taking into account non-technical
aspects
in the field of production planning and logistics (K2st_U11)
can - using, among others, conceptually new methods - solving complex IT tasks, incl
in the field of production planning and logistics (K2st_U10)

Social competence:
understands the importance of using the latest IT knowledge in solving solutions
research and practical problems (K2st_K2)
understands that in IT knowledge and skills become obsolete very quickly (K2st_K1)

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

The learning outcomes presented above are verified in the following way:
The learning outcomes presented above are verified in the following way:
Formative assessment:
a) in terms of lectures:
- based on answers to questions about the material covered in previous lectures,
b) in the scope of laboratories:
- based on the assessment of the current progress of task implementation,
Summary rating:
a) in the field of lectures, verification of the assumed learning outcomes is carried out by:
- assessment of knowledge and skills demonstrated in a problem-based written exam
(student can use any teaching materials) discussion of exam results,
b) in the field of laboratories/exercises, verification of the assumed learning outcomes is carried out
By:
- assessment of the student's preparation for individual laboratory sessions (entrance test)
and assessment of skills related to the implementation of laboratory exercises,
- continuous assessment in each class (oral answers - rewarding the increase in skills
using the learned principles and methods,
- evaluation of the report prepared partly during classes and partly after their completion;
this assessment also includes the ability to work in a team,
- assessment of knowledge and skills related to the implementation of design/laboratory tasks through 2
colloquia during the semester,
- student's assessment and defense of the project implementation report,
Obtaining additional points for activity during classes, especially for:
- effectiveness of applying acquired knowledge when solving a given problem,
- ability to cooperate as part of a team that practically implements a detailed task
lab,

- comments related to the improvement of teaching materials,
- identifying students' perceptual difficulties enabling ongoing process improvement
didactic

Programme content

Logistics - definition, history of development and current status. The goods flow chain as a basic model the company's logistics system. Logistics processes - (logistics functions). Inudstry 4.0.

Course topics

ecture:
The lecture program covers the following topics:
Logistics - definition, history of development and current status. The goods flow chain as a basic model the company's logistics system. Logistics processes - (logistics functions): study customer orders, inventory management, material flow management, transport, warehousing, packaging management, communication in logistics systems, management logistics. Supply chain - basic concepts and definitions. Conventional and integrated chains supplies. Network forms of enterprises. Integration in supply chains – forms: JiT II, inventories managed by the supplier (Vendor Managed Inventory), integration using the service provider logistics (III - part logistics & IV - part – logistics). Communication in logistics systems. Systems IT and telematics in logistics: databases and data warehouses in logistics systems, EDI in logistics systems: EDIFACT, EANCOM, ODETTE standards. Supplies management. Basic stock model. Inventory classification: : ABC classification, XYZ classification. Basic systems stock replenishment. Advanced stock replenishment systems: continuous stock replenishment (Continuous Replenishment), cooperation in planning, forecasting and inventory replenishment (Collaborative Planning, Forecasting and Replenishment (CPFR). The essence of planning. Planning production. Production planning systems. Production planning concepts – global planning, hierarchical planning, successive planning. MRP II system (so-called APICS standard) as an example of IT support for successive planning. MRP II system modules a ERP system architecture. Material requirements planning method (Material Requirements Planning - MRP) And its supplements and extensions - DRP (Distribution Requirements Planning), MRP II (Manufacturing Resource Planning), DRP II, (Distribution Resource Planning).
Laboratory classes are conducted in the form of four 4-hour exercises, held in: laboratory, preceded by students completing homework tasks, introducing the topics of laboratory classes. The exercises are carried out independently using integrated ERP management system: Microsoft Dynamics 365. Laboratory program covers the following issues: entering basic data and implementing the process planning and production in discrete and process production conditions. Issues related to logistic labels.

Teaching methods

1. lecture: multimedia presentation, presentation illustrated with examples given on the board
2. laboratory exercises: solving tasks, practical exercises, discussion, team work, multimedia show, demonstration

Bibliography

Basic
1. Fertsch M., Material requirements planning method in production planning i controlling its course, Poznań University of Technology Publishing House, 2013.
2. Fertsch M., Cyplik P., Hadaś Ł. (eds), Production logistics. Theory and practice, Institute of Logistics i Warehousing, Poznań 2010
3. Hałas E. (ed), Barcodes and other global standards in business, Institute of Logistics and Warehousing, Poznań 2012
Supplementary
1. Zäpfel G., H.Missbauer, New concepts for production planning and control, European Journal of

Operational Research 76, 1993, 297-320
2. Fertsch M., Basics of material flow management in examples, Institute of Logistics and Warehousing, Poznań 2002.

Breakdown of average student's workload

	Hours	ECTS
Total workload	100	4,00
Classes requiring direct contact with the teacher	34	1,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	66	2,50