COURSE DESCRIPTION CARD - SYLLABUS

Course name

Computer integrated manufacturing

Course

Field of study

Logistics

Year/Semester

1/1

Area of study (specialization)

Logistic systems

Profile of study

general academic

Level of study

Second-cycle studies

Course offered in

English

Form of study

full-time

Requirements

elective

Number of hours

Lecture

30

Laboratory classes

Other (e.g. online)

Tutorials

Projects/seminars

30

Number of credit points

5

Lecturers

Responsible for the course/lecturer:

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Responsible for the course/lecturer:

Prerequisites

The student knows the basic concepts related to the design, implementation and operation of production systems in the machine-building industry including flexible manufacturing systems. He should also be able to obtain information from specified sources and be willing to cooperate as part of a team.

Course objective

To acquaint students with knowledge, mastering social skills and competences related to the design and implementation of computer integrated manufacturing systems.

Course-related learning outcomes

Knowledge

- dependencies in the given area and their relations with logistics [P7S_WG_01]

- issues in the field of production engineering and its connections with the field of logistics [P7S_ WG_02]

- extended concepts for logistics and its detailed problems and supply chain management [P7S_WG_05]

- detailed methods, tools and techniques characteristic for studied subject on the course of logistics [P7S_WK_01]

Skills

- collect on the basis of the literature of the subject and other sources (in Polish and English) and in an orderly manner, provide information on the problem within the framework of logistics and its specific issues and supply chain management [P7S_UW_01]

- communicate using appropriately selected resources in a professional environment and in other environments as part of logistics and its specific issues as well as supply chain management [P7S_UW_02]

- make a critical analysis of technical solutions used in the analyzed logistics system (in particular with regard to devices, objects and processes) [P7S_UW_04]

- assess the suitability and the possibility of using new achievements (techniques and technologies) in the field of logistics and functionally related areas [P7S_UW_06]

- formulate and solve tasks through interdisciplinary integration of knowledge from different fields and disciplines used to design logistics systems [P7S_UO_01]

- identify changes in requirements, standards, regulations, technical progress and the reality of the labor market, and on their basis determine the need to supplement own and other knowledge [P7S_UU_01]

Social competences

- recognize causal relationships in achieving the set goals and grading the significance of alternative or competitive tasks [P7S_KK_01]

- responsibility for own work and readiness to comply with the rules of working in a team and taking responsibility for the tasks carried out jointly [P7S_KR_01]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

assessment based on a team-developed project,

grade based on written credit (exam)

Programme content

The lecture begins by explaining the concept of "computer integrated manufacturing". The basic modules of the CIM system are discussed - CAD (computer-aided design, CAPP (computer-aided proce planning), CAM (computer-aided manufacturing), PPC (production planning and control), CAQ (computer-aided quality management). Variants of individual modules and possible configurations are presented. The implementation process of the CIM system is presented The difficulties associated with this process are discussed in selected cases.

During project classes, students develop design assumptions for the implementation of the CIM system in a selected enterprise.

Teaching methods

1. Lecture: multimedia presentation, illustrated with examples on the board. 2. Projects: multimedia presentation illustrated with examples given on the board and performance of tasks given by the teacher.

Bibliography

Basic

1. Knosala M., (red.) Komputerowo zintegrowane zarządzanie, WNT, Warszawa, 2007.

2. Fertsch M., Grzybowska K., Stachowiak A., (2007), Standard CALS/OASIS – geneza, podstawy teoretyczne i stan obecny, [w:] Fertsch M., Grzybowska K., Stachowiak (red.), „Logistyka i zarządzanie produkcją – nowe wyzwania, odległe granice", monografia wydana przez Instytut Inżynierii Zarządzania, Politechnika Poznańska 2007.

3. Fertsch M., Grzybowska K., Stachowiak A., (2008), Modele systemów produkcyjnych i logistycznych – próba klasyfikacji, [w:] Fertsch M., Grzybowska K., Stachowiak (red.), Logistyka i zarządzanie produkcją: narzędzia, techniki, metody, modele, systemy, monografia wydana przez Instytut Inżynierii Zarządzania, Politechnika Poznańska 2008

4. Golinska P., Fertsch M., Gomez J.M., Oleskow J., (2007), The Concept of Closed –loop Supply Chain Integration Through Agent – based System., [in:] Gomez J.M., Sonnenschein M., Muller M., Welch H., Rautenschrauch C., (eds.), Information Technologies in Environmental Engineering, Springer Verlag, Berlin Heidelberg, 2007, ISBN 13-3 – 540 – 71334 -4,

Additional

1. Brzeziński M., Organizacja i sterowanie produkcją. Projektowanie systemów produkcyjnych i procesów sterowania produkcją, Agencja Wydawnicza Placet, Warszawa 2002.

2. Dagli C.H.(ed.), Artificial neural network for inteligent manufacturing , Chapman & Hall, London, 1994

Breakdown of average student's workload

	Hours	ECTS
Total workload	125	5,0
Classes requiring direct contact with the teacher	60	2,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) [1]	65	2,5

[1] delete or add other activities as appropriate