



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Computer integrated manufacturing

### Course

Field of study

Year/Semester

Logistics

1/1

Area of study (specialization)

Profile of study

Corporate Logistic

general academic

Level of study

Course offered in

Second-cycle studies

Polish

Form of study

Requirements

part-time

elective

### Number of hours

Lecture

Laboratory classes

Other (e.g. online)

16

Tutorials

Projects/seminars

16

### Number of credit points

5

### Lecturers

Responsible for the course/lecturer:

Responsible for the course/lecturer:

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### 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



- is able to collect, based on the literature on the subject and other sources and present in an orderly manner information on problems related to the design and implementation of computer integrated manufacturing systems. [ P7S\_UW\_01]
- is able to communicate using appropriately selected means in a professional environment and in other environments as part of issues related to the design and implementation of computer integrated manufacturing systems. [ P7S\_UW\_01]
- knows detailed methods, tools and techniques specific to issues related to the design and implementation of computer integrated manufacturing systems. [P7S\_WK\_01]
- knows issues in the field of production engineering and its connections related to the design and implementation of computer integrated manufacturing systems. [ P7S\_WG\_02]

#### Skills

- is able to collect, based on the literature on the subject and other sources and present in an orderly manner information regarding a problem falling within the framework of issues related to the design and implementation of computer integrated manufacturing systems. [P7S\_UW\_01]
- is able to communicate using appropriately selected means in a professional environment and in other environments as part of issues related to the design and implementation of computer integrated manufacturing systems. [P7S\_UW\_02]
- is able to assess the usefulness and possibility of using new achievements (techniques and technologies) in the design and implementation of computer integrated manufacturing systems. [P7S\_UW\_06]
- is able to formulate and solve tasks through interdisciplinary integration of knowledge from fields and disciplines used to design and implement computer integrated manufacturing systems. [P7S\_UO\_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 intelligent 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	32	1,5
Student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation) <sup>1</sup>	93	3,5

<sup>1</sup> delete or add other activities as appropriate