



## COURSE DESCRIPTION CARD - SYLLABUS

Course name

Business Process Organization [N2Inf1-IWPB>PBIZ]

### Course

Field of study

Computing

Year/Semester

1/1

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 (e.g. online)

0

Tutorials

0

Projects/seminars

0

### Number of credit points

4,00

### Coordinators

dr inż. Arkadiusz Zimniak

arkadiusz.zimniak@put.poznan.pl

### Lecturers

dr inż. Arkadiusz Zimniak

arkadiusz.zimniak@put.poznan.pl

### Prerequisites

Learning outcomes of first-cycle studies as defined in the Resolution of the Senate of the PP A student starting this course should have the ability to obtain information from the indicated sources. He should also understand the need to expand his competences. Moreover, in terms of social competences, the student must present such attitudes as honesty, responsibility, perseverance, cognitive curiosity, creativity, personal culture, respect for other people.

### Course objective

1. Provision of basic knowledge on the organization of economic systems, business process concepts, integration and automation of these processes, integrated management information systems, production planning and accounting issues. 2. Shaping students' skills to use an integrated IT system of ERP class. Skills are developed by conducting a case study of the use of the Microsoft Dynamics ERP system

### Course-related learning outcomes

Knowledge:

has advanced detailed knowledge regarding selected IT issues (K2st\_W3)

has knowledge about development trends and the most important cutting edge achievements in

computer science and other selected and related scientific disciplines (K2st\_W4)  
has advanced and detailed knowledge of the processes occurring in the life cycle of hardware or software information systems (K2st\_W5)  
knows advanced methods, techniques and tools used to solve complex engineering tasks and conduct research in a selected area of computer science (K2st\_W6)  
knows the economic, legal and other determinants of the activities of IT companies (K2st\_W8)

#### Skills:

is able to obtain information from literature, databases and other sources (both in Polish and English), integrate them, interpret and critically evaluate them, draw conclusions and formulate and fully justify opinions (K2st\_U1)  
can - when formulating and solving engineering tasks - integrate knowledge from different areas of computer science (and if necessary also knowledge from other scientific disciplines) and apply a systemic approach, also taking into account non-technical aspects (K2st\_U5)  
is able to assess the suitability and the possibility of using new achievements (methods and tools) and new IT products (K2st\_U6)  
can carry out a critical analysis of existing technical solutions and propose their improvements (streamlines) (K2st\_U8)  
is able to assess the usefulness of methods and tools for solving an engineering task, consisting in the construction or evaluation of an IT system or its components, including the limitations of these methods and tools (K2st\_U9)  
is able - using among others conceptually new methods - to solve complex IT tasks, including atypical tasks and tasks containing a research component (K2st\_U10)  
is able - in accordance with a given specification, taking into account non-technical aspects - to design a complex device, IT system or process and implement this project - at least in part - using appropriate methods, techniques and tools, including adapting to this purpose existing tools or developing new ones (K2st\_U11)  
is able to interact in a team, taking various roles in it (K2st\_U15)

#### Social competences:

understands that in the field of IT the knowledge and skills quickly become obsolete (K2st\_K1)  
understands the importance of using the latest knowledge in the field of computer science in solving research and practical problems (K2st\_K2)

### Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:

Formative assessment:

a) in the field of lectures:

- on the basis of answers to questions about the material discussed in previous lectures and discussed during the current lecture

b) in the field of laboratories / exercises:

- based on the assessment of the current progress in the implementation of tasks,

Summative assessment:

a) in the field of lectures, verification of the assumed learning outcomes is carried out by:

- assessment of knowledge and skills demonstrated in the written exam in the form of a multiple-choice test, tasks and open questions. The exam consists of 30 questions and tasks. Sample tasks are provided to students in advance. You can get 120 points. 106.5 - 120 points: 5.0; 95.5 - 106 points: 4.5; 84.5 - 95 points: 4.0; 71.5 - 84 points: 3.5; 60.5 - 71 points: 3.0; 0-60 points: 2.0

b) in the field of laboratories, verification of the assumed learning outcomes is carried out by:

- assessment of the student's preparation for individual sessions of laboratory classes, through the assessment of homework, introducing the subject of laboratory classes  
- evaluation of the report prepared during the classes;

Obtaining additional points for activity during classes, especially for:

- discussion of additional aspects of the issue,  
- remarks related to the improvement of teaching materials,

### Programme content

The lecture program covers the following topics:

Information processes in management. Organizational unit control: planning, organizing, motivating and controlling. Supporting information processes in an enterprise: information and IT system, automation of information processes, IT systems in management. Basic functional areas of the company, their role and business functions: management, marketing, sales, research and development, planning, production, maintenance, logistics, quality assurance, procurement, warehouse management and transport, service, project management, finance, human resource management, IT. Business processes: definition, basic business processes in the company. The importance and platforms of process integration. Basic information about ERP systems. Logistic chain. Introduction to accounting: financial, management and tax accounting. Accounting: accounting entries, accounting vouchers. Overview of the model chart of accounts. Basic financial documents of the company: balance sheet, income statement, cash flow statement. Business plan, SWOT analysis. Financial analysis of investments: net present value method, payback period, profit threshold. The concept of the production system. Generalized model of the production system, Problems of the organization of connections in the production process. Productivity of the production system. Research and development process. The process of distribution and customer service. Manufacturing process. Classification of industrial manufacturing processes. The structure of the manufacturing process: in terms of the subject, in terms of group technology. Production cycle: cycle elements, times, cycle shortening. Manufacturing structure. Organization of production: types of production organization, forms of production organization, varieties of production organization, differences. Manufacturing automation (CNC). Automation of auxiliary processes (FMS). Automation of technical preparation of production (CAD / CAP). Automation of manufacturing processes (CAM). Integration of manufacturing and control processes (CIM), Internet of Things in production systems.

Laboratory classes are conducted in the form of four 4-hour exercises, taking place in the laboratory, preceded by students doing homework, introducing them to the subject of laboratory classes. Exercises are carried out independently with the use of an integrated ERP class management system: Microsoft Dynamics. The laboratory program covers the following topics: entering basic data and the implementation of the sales and purchasing process. Entering basic data and implementing processes in the area of finance.

## Teaching methods

1. lecture: multimedia presentation, demonstration.
2. laboratory exercises: a case study and practical exercises in the ERP Microsoft Dynamics class system.

## Bibliography

Basic

1. Inżynieria zarządzania, Durlik I., Agencja Wydawnicza Placet, Gdańsk, 1998

Additional

1. Funkcjonalność informatycznych systemów zarządzania, Arkadiusz Januszewski, PWN, Warszawa, 2008
2. Wdrożeniowe uwarunkowania zintegrowanych systemów informatycznych, Adamczewski P., Akademicka Oficyna Wydawnicza PLJ, Warszawa, 1998
3. Systemy informacyjne biznesu, Kisielnicki J., Sroka H., Agencja Wydawnicza Placet, Gdańsk, 1999

## 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