

Modelling and simulation of production processes - course description

General information	
Course name	Modelling and simulation of production processes
Course ID	06.9-WM-ZiIP-ZPU-ANG-D-21_17
Faculty	Faculty of Mechanical Engineering
Field of study	Management and Production Engineering
Education profile	academic
Level of studies	Second-cycle studies leading to MSc degree
Beginning semester	winter term 2018/2019

Course information	
Semester	2
ECTS credits to win	5
Course type	obligatory
Teaching language	english
Author of syllabus	prof. dr hab. Taras Nahirnyy

Classes forms					
The class form	Hours per semester (full-time)	Hours per week (full-time)	Hours per semester (part-time)	Hours per week (part-time)	Form of assignment
Lecture	15	1	-	-	Exam
Laboratory	30	2	-	-	Credit with grade

Aim of the course

Prerequisites

Scope

Teaching methods

Lecture: a conventional lecture.

Laboratory: Laboratory with the use of available computer programs.

Learning outcomes and methods of theirs verification

Outcome description	Outcome symbols	Methods of verification	The class form
The student is able to both choose -and use- appropriate computer applications for calculating, simulating, designing and also verifying solutions in Management and Production Engineering.	K_U11	- an observation and evaluation of the student's practical skills - carrying out laboratory reports	Laboratory
Student knows the basic methods, techniques and tools used in modelling and simulation of production processes.	K_W18	- an exam - oral, descriptive, test and other - an observation and evaluation of the student's practical skills - carrying out laboratory reports	- Lecture - Laboratory
The student is able to use analytical and simulational methods for solving the production processes problems.	K_U13	- an observation and evaluation of the student's practical skills - carrying out laboratory reports	- Lecture - Laboratory
The student has orderly and specific theoretical knowledge of branch of modeling and simulation of production processes, with the use of linear and integer programming methods and Petri's network.	K_W01 K_W15	- an exam - oral, descriptive, test and other - carrying out laboratory reports	- Lecture - Laboratory
The student is able to think and act both creatively and entrepreneurially.	K_K06	- an exam - oral, descriptive, test and other - an observation and evaluation of the student's practical skills	- Lecture - Laboratory

Assignment conditions

Lecture: graded credit. The rating is issued based on a written exam covering the verification of the knowledge of the issues from the curriculum.

Laboratory: graded credit. The rating is determined based on the evaluation of skills related to the performance of laboratory tasks.

Final rating: the arithmetical mean of grades from individual types of classes.

Recommended reading

1. Banaszak Z., Jampolski L.S., Komputerowe wspomaganie modelowania elastycznych systemów produkcyjnych WNT, Warszawa 1991
2. Starke,P,H., Sieci Petri. Podstawy, zastosowania, teoria. Warszawa, PWN, 1987.
3. Tikhonenko O., Elementy teorii obsługi masowej, Częstochowa: Wyd. Wyższej Szkoły Pedagogicznej, 2003
4. Pomocy elektroniczne programów

Further reading

1. Barczyk J., Automatyzacja systemów dyskretnych, Oficyna Politechniki Warszawskiej, Warszawa 2003
2. Sawik T. Optymalizacja dyskretna w elastycznych systemach produkcyjnych WNT Warszawa, 1992
3. Morrison F., Sztuka modelowania układów dynamicznych: deterministycznych, chaotycznych, stochastycznych, WNT, Warszawa 1996.
4. Hillier F.S., Lieberman G.J., Introduction to Operations Research, McGrawHill.

Notes

Modified by dr inż. Tomasz Belica (last modification: 16-09-2018 13:06)

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