

Course description

1 General information

Course name	Production and Operations Management
Course code	
Level of study (B.Sc, M.Sc., Ph.D.)	M.Sc.
ECTS	5
Course manager	Ph.D. Eng. Jacek HABEL, Institute of Production Engineering M6
Course length	One (1) semester
Coordinator for international programs	erasmus@mech.pk.edu.pl

2 Prerequisites

- Medium level in MS Excel or relevant spreadsheet application

2 Program

Type	Lectures	Classes	Labs	Computer labs	Project	Seminar
Hours	30				30	

3 Contents

Lectures		
No.		Hours
1	The structure of manufacturing process.	2
2	The BOM structure of final product. The assembly process planning.	4
3	The machining process planning for selected methods. Worktime standard calculation.	4
4	The structure of APICS Operations Planning. Characteristic of 5-level planning.	2
5	The sale historical data analysis and sale forecast. Methods of safety stock calculations.	4
6	The master schedule planning and MPS calculations.	2
7	The material requirements planning and MRP calculations.	4
8	The inventory management.	4
9	The manufacturing system and facilities planning.	4

Project		
No.		Hours
1	The project of manufacturing process plan (including assembly and selected machining)	10
2	The project of operations planning, including: BOM, sale forecast, safety stock calculation, MPS and MRP plan.	10
3	The project of 2D layout of manufacturing system (based on previous projects).	10

3 Learning Outcomes (skills and knowledge):

- Student knows the structure of manufacturing processes, including assembly and machining
- Student knows the APICS structure of operations planning
- Student can design assembly process plan
- Student can design operational plan for selected machining methods
- Student can analyse the sale historical data and make sale forecast, calculate safety stocks
- Student can create MPS and MRP plan for product given by BOM structure

4 Assessment policy (examination):

- Projects

- Multiple choice test

5 Literature

1. P. Jonsson & S.A. Mattsson, *Manufacturing, Planning and Control*, New York: McGraw-Hill Education, 2009.
2. W. J. Stevenson, *Production/Operations Management*, V ed., USA: IRWIN, 1996.
3. D. Waters, *Logistics. An Introduction to Supply Chain Management*, New York: Palgrave MacMillan, 2003.
4. S.A. Kumar, *Operations Management*, New Age International Publishers, New Delhi, 2009.
5. S.A. Kumar & N. Suresh, *Production and Operations Management*, New Age International Publishers, New Delhi, 2008.