

University: University of Zilina	
Faculty: Faculty of Mechanical Engineering	
Subject code: 2Y028	Subject name: Operational Management (OM)
Profile subject: yes	
Type, scope and method of educational activities:	
Weekly number of teaching hours in the form of lectures, exercises, seminars, clinical practice.	3 - 0 - 2 (lectures-exercises-laboratory exercises) hours
The method by which the educational activity is carried out	Teaching is carried out on a full-time basis.
Methods of achieving educational results	<p>Lectures: systematic theoretical problem interpretation of the issue, problem-oriented teaching, interactive lecture with multimedia support, consultations in connection with feedback</p> <p>Exercises: model examples, motivational demonstration, explanation, problem-based teaching, continuous examination</p>
Number of credits: 6.0	
Student workload: <i>The total time intensity of the course is 182 hours per semester, of which 65 hours per semester is direct teaching and 104 hours per semester is independent study and independent creative activity of the student.</i>	
Recommended semester / trimester study: winter semester	
Degree of study: 2	
Prerequisites:	
Conditions for passing the subject:	
Exercises: semester exercises - total assessment = 0 - 60 points,	
Final rating:	
Exam: - max. 40 points.	
The resulting classification of the subject:	
Rating A: 93 - 100 points	
Rating B: 85 - 92 points	
Rating C: 77 - 84 points	
Rating D: 69 - 76 points	
Rating E: 61 - 68 points	
FX rating: less than 61 points.	

Learning Outcome Scoreboard:

Forms and methods of evaluation	Scale	Area of knowledge, skills, competences
Semester assignments in exercises	60%	Professional knowledge, presentation skills, teamwork, working with information, independent work, practical skills.
Exam	40%	Professional knowledge

Learning outcomes:

By completing the course, the student will acquire:

- can explain the forms and methods of operational management,
- can explain the specifics for the effective functioning of each system, which is influenced by the way its operations are managed,
- can apply in practice the areas covered by the MRP II system - forecasting of future needs, production planning and workshop scheduling algorithms within operational projects solved in a team,
- can present a case study.

Course contents:

Lectures

1. Production planning and control.
2. Future demand forecasting methods. Forecasting errors, tracking signal.
3. Agregate production planning, principle, methods, strategies, AGP costs, disaggregation.
4. Material requirements planning (MRP I) – MRP system and its principle, example of MRP.
5. Short term production planning. Shopfloor control. Push and pull principle in shopfloor control systems.
6. Shop floor scheduling – typical functions, techniques. Loading and sequencing problem. Order priority determination rule.
7. Modeling and simulation. Alternative methods for simulation.
8. 3D Laser scanning – main principle.
9. Digital factory – principle, benefits.
10. Rapid prototyping, Reverse engineering, Vacuum casting. New trends in operational management.

Exercises

Students solve case studies and samples.

Recommended reading:

CHASE,R.B. - AQUILANO,N.J.: Production and Operations Management. A Life Cycle Approach. Fifth Edition. - Boston : IRWIN, 1989.

SHAFER,S.M. - MEREDITH,J.R.: Operations Management. A Process Approach with Spreadsheets. - New York : John Wiley & Sons, 1998., 860 s., ISBN? 978-0471165453.

Dilworth, J.B.: Operations Management. McGraw-Hill, New York, 1992.

Gregor,M. at all.: Dynamical Planning and Production Management. EDIS Žilina, 2000.

A language whose knowledge is required to complete the course: english

Notes:

Course evaluation

Total number of evaluated students: 0

A	B	C	D	E	FX
0.00%	0.00%	0.00%	0.00%	0.00%	0.00%

Person securing the subject (subject guarantor):

Ing. Vladimíra Biňasová, PhD., DiS.

Teaching:

Name and surname of the teacher, titles	Organizational form provided by the university teacher (Lectures, exercises, laboratory work, field exercises)
Ing. Vladimíra Biňasová, PhD., DiS.	Lectures
Ing. Vladimíra Biňasová, PhD., DiS.	Exercises

Date of last change: 15.12.2022**Approved:** prof. Ing. Milan Gregor, PhD.