



Operations Management in Advanced Lean Systems

Syllabus, Schedule, and Textbooks

Something New?



- Erasmus+ Project “IE3”
- The Body of Knowledge for Higher Education in Industrial Engineering and Management
- Common Courses across EU
POLIBA, UPM, POZNAN UT, LINKOPING Univ.
- Involvement of Industrial Partners
BOSCH, Exprivia

<https://ie3.eu>



Detailed Syllabus and Schedule

	ECTS	Topic	hour	date	Ed. tool	Reference
Operations, Performance, and Continuous Improvement <i>On-site visits of manufacturing facilities [POSTPONED]</i>	1.00	Operations, trade-offs and Performance measures. Losses in production. The Overall Equipment Effectiveness (OEE).	2.5	12/04/2022	Lecture	Jacobs, Chase
		Process Analysis and Process Design. Cycle time. Throughput. WIP. Flow Time. Utilization. Little's Law	2.5		Lecture	Jacobs, Chase
		Industry 4.0: Standards and Data integration for PMS	2.5		Lecture	IEC and ISO Standards
		Industry 4.0 and Continuous Improvement	2.5		Seminar by Industry professor. BOSCH	Lecture notes
Lean Systems	1.00	Lean Systems and Continuous Improvement	2.5		Lecture	Jacobs, Chase
		Value Stream Concepts, Mapping and Design	2.5		Lecture	Jacobs, Chase BOSCH BPS
		Cycle Time Analysis	2.5		Serious game on the shopfloor. [virtual]	BOSCH BPS
		System Re-design & Continuous Improvement	2.5		Serious game on the shopfloor. [virtual]	BOSCH BPS

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Production Planning and Control	1.75	Stages and time horizons of operations management. Strategic Planning	2.5		Lecture	Jacobs, Chase
		Aggregate Planning. Strategies and Trade-off	2.5		Lecture	Jacobs, Chase
		Case studies. Problem solving. Excel solver for linear program	2.5		Classroom Exercise	
		Bill of Materials. Master Production Schedule	2.5		Lecture	Jacobs, Chase
		Short-term Planning. Loading	2.5		Lecture	Jacobs, Chase
		Short-term Planning. Scheduling	2.5		Flipped classroom for selected topics	Jacobs, Chase
		Case studies. Problem solving	2.5		Classroom Exercise	
Inventory Management	1.25	Inventory, KPIs and Costs. Replenishment models	2.5		Lecture	Jacobs, Chase
		EOQ. POQ. Safety Stocks. ABC Classification	2.5		Lecture	Jacobs, Chase
		Case studies. Problem solving	2.5		Classroom Exercise	
		Material Requirement Planning (MRP). EPQ.	2.5		Lecture	Jacobs, Chase
		ERP: Production Planning module and shop floor integration in SAP	2.5		Seminar by ERP Provider. Exprivia (Gold Partner SAP)	Lecture notes

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	ECTS	Topic	hour	date	Ed. tool	Reference
Advanced Lean Systems	1.0	Pull & Levelling Tools: JIT, Pacemakers, Supermarkets, Kanban Circuits.	2.5		Lecture	Jacobs, Chase, BOSCH BPS
		Advanced Lean Systems design	5		Serious game on the shopfloor. Team Evaluation. [on-line]	BOSCH BPS
		Transparency, continuous improvement, roles and responsibilities, leadership	2.5		Seminar by Industry professor. BOSCH	Lecture notes
Final Class EXE		Case studies. Problem solving [Scheduling+Exam simulation]	2.5		Classroom Exercise	

- New Topic Industrial Partner
- Less is more



Evaluation criteria

- In Class Activity (10% Bonus)
(exercises, serious games, seminars)
- Written exam (80%)
GPI Part A & part B
- Oral exam (20%)
GPI Part A & part B

Main references

- JACOBS, CHASE, GRANDO, SIANESI. *OPERATIONS MANAGEMENT nella produzione e nei servizi*, IV Edizione. McGraw-Hill Education, 2020
- JACOBS, CHASE. *OPERATIONS AND SUPPLY CHAIN MANAGEMENT*, FIFTEENTH EDITION. McGraw-Hill Education, 2018
- BOSCH. BPS Training Material