

Operations Management

 <p>Lecturer Serhiy Gvozdiiov gvozdiiov@kse.org.ua</p> <p>Areas of Expertise:</p> <ul style="list-style-type: none"> • Strategic Management • Business Project Management • Project Management • Expert in Application of Theory of Constraints (TOC), Lean and Kaizen • Training and Consulting 	 <p>Lecturer Luca Fumagalli luca1.fumagalli@polimi.it</p> <p>Areas of Expertise:</p> <ul style="list-style-type: none"> • Operations Management, • Industry 4.0 • Asset Management, Maintenance Management 	 <p>Lecturer Nataliia Roskladka nataliia.roskladka@polimi.it</p> <p>Areas of Expertise:</p> <ul style="list-style-type: none"> • Business Process Management • Demand Planning and Forecasting • Industry 4.0
<p>Education:</p> <ul style="list-style-type: none"> • Master in Applied Mathematics at Lviv State University • PhD in Management at Lviv Polytechnic University • MBA at Lviv Institute of Management and Wayne State University in Detroit • Project Management at Goldratt Schools TOC • Professional Development Program at IESE, Barcelona • Pre-MBA course, Institute of Business Technologies, Minsk, Belarus • Toyota Production System Training at Kabayasi School, Sapporo, Japan 	<p>Education:</p> <ul style="list-style-type: none"> • Bachelor in Mechanical Engineering, Politecnico di Milano • Master in Management Engineering, Politecnico di Milano • PhD in Management Engineering, Politecnico di Milano 	<p>Education:</p> <ul style="list-style-type: none"> • Bachelor in Economic Cybernetics, National Technical University of Ukraine "Kyiv Polytechnic Institute" • Master in Management Engineering, Politecnico di Milano • PhD in Management Engineering, Politecnico di Milano

<p>Professional Experience:</p> <ul style="list-style-type: none"> • Founder of “Necessary and Sufficient” consulting company 	<p>Professional Experience:</p> <ul style="list-style-type: none"> • Assistant Professor at Politecnico di Milano • Visiting Professor at Warsaw University of Technology, Universidad de Los Andes, Universidad Catolica de Valparaiso • Research and Consultancy projects on Simulation, Design of production systems, Maintenance Managment 	<p>Professional Experience:</p> <ul style="list-style-type: none"> • Research and Consultancy projects on Business Process Management and Digital Transformation • Teaching at Politecnico di Milano
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Course description:

The modern business environment is changing rapidly: Customers are changing their preferences, new technologies are emerging, governments are changing rules of business, suppliers are making new demands, competitors are increasing pressure. At the same time, organizations and employees are forced to change at an even faster pace to compete. This course will explain why project and operations management are key tools for achieving the company's strategic goals in an environment of constant change.

Course structure:

The course duration is 50 academic hours. The course consists of full-time lectures and homework assignments. Assignments include both self-study of materials and outside lecture practical exercises. Face-to-face lectures consist of short blocks of theory, group practical exercises, games and business cases.

Course prerequisites:

None

Learning outcomes:

At the end of this course, the student should be able to:

- Understand the link between General Strategy and Operations Strategy
- Breakdown company's Strategic goals into concrete actions and initiatives
- Prioritize initiatives in the company's project portfolio
- Perform operations analysis and planning
- Evaluate which of the modern approaches to building operating systems will be the most appropriate for your case - Lean, TOC, or 6 Sigma
- Apply main tools of Lean, TOC, and 6 Sigma
- Perform location planning and analysis
- Apply appropriate systems of inventory management
- Lead the changes in their businesses
- Understand the technologies of Industry 4.0
- Understand basic principles of applying digital technologies to the operational context
- Analyse the benefits of digitalization and digital transformation
- Evaluate the impact of Industry 4.0 applications on the performances of Operations
- Understand the structure of the presentation for the capstone project defense
- Create a comprehensive project plan
- Develop operations management part of the capstone project

Course recommended literature:

The materials include:

- Operations Management, 13th Edition by William J Stevenson
- "Factory Physics", Wallace J. Hopp, Mark L. Spearman, Waveland Press, 2011
- "Project Management – Best Practices" by Harold R. Kerzner
- "Critical Chain" by Eliyahu M. Goldratt
- "Reengineering the Corporation: A Manifesto for Business Revolution" by Michael Hammer
- "The Goal " by Eliyahu M. Goldratt
- "The Toyota way" by Jeffrey Liker
- "BPM CBOK Version 3.0: Guide to the Business Process Management Common Body Of Knowledge" – 2nd chapter
- Optional additional materials will also be offered during the course

Grading:

Your grade for the course will be based on your work in the course, weighted as follows:

Activity	%	Deadline
Homework assignments	30	After one week from the assignment. Homework assignments will be delivered through Microsoft Forms.
Case study presentation (Based on Fozzy, Nova, Poshta and/or other possible cases)	40	Defined during the course
Final project defense	30	At the end of the course

Comments: The Final project defense will be based on materials, studied during the course and recommended literature. Only students, who visited 70% of the classes, receive access to the Final written exam and project defense.

Course outline:

Module	Subject	Material and Literature	
1	Luca <ul style="list-style-type: none"> Introduction to the course. Final project launch Links between General Strategy and Operations Strategy. Little's Law 	Article E. Goldratt. "Standing on the Shoulders of Giants – Production concepts versus production applications The Hitachi Tool Engineering example"	July 5th
2	Luca <ul style="list-style-type: none"> Little's Law and Factory Physics 	Book: Factory Physics, Wallace Hopp and Mark Spearman	July 7th
3	Luca <ul style="list-style-type: none"> Production Management and Scheduling (Production Planning & Control) Process Management, based on Toyota Production System. 	Article "How TPS changed the rules of automobile industry" Recommended : <ol style="list-style-type: none"> Jeff Liker: The Toyota Way and Toyota Kata https://www.youtube.com/watch?v=qmnd9XfLjwg E. Goldratt. "The Goal" Article: "Decoding the DNA of the Toyota Production System" in Harvard Business Review	July 12th
4-5	Serhiy <ul style="list-style-type: none"> Lean: Thinking, Production, Solutions Operations in Service Management 	Article "What is it – Lean Thinking" Recommended: <ol style="list-style-type: none"> James Womack "Lean Solutions" https://uk.kaizen.com/products/webinar-key-capabilities-supply-chain-lean-transformation-video?submissionGUID=dee9530b-92d3-467d-9290-484796b0a62f Live case "Fozzi Group. Transformation of Supply Chain Management"	July 14th – July 19th
6	Serhiy Value Stream Mapping	M.Rother, J. Shock "Value Stream Mapping" Live case "New mail service". Guest Speaker	July 21st
7	Nataliia Industry 4.0	Introduction to Industry 4.0 Italian and European vision on Industry 4.0 and Artificial Intelligence in Operations. <ul style="list-style-type: none"> Reports of Osservatori.net, Observatories of Politecnico di Milano 	July 23rd
8	Luca and Nataliia Industry 4.0	Industry 4.0 – Simulation – Digital Tools	July 26th
9	Luca and Nataliia	Industry 4.0 – Simulation – Digital	July 28 th

	Industry 4.0	Tools	
10	Serhiy Quality Management. Kaizen, Total Quality Management, 6 Sigma.	Article "Quality Management – choose what you need" Recommended: What is Lean Six Sigma? Guest Speaker	Aug 2nd
11	Serhiy Lean + TOC. Leverage company strategy	Article "Why it is so much important to manage systems by managing its constraints" Recommended: Set of video lessons of Dr. Goldratt	Aug 4th
12	Serhiy TOC Project Management – in time, within budget, without sacrifice in quality	Article "What is Project Management and how TOC solves its core conflict" Recommended: Eli Goldratt "Critical Chain"	Aug 9th
2 hours	FINAL TEST – PROJECT DEFENCE		Aug 11th

Academic Integrity

Academic integrity is submitting one's own work and properly acknowledging the contributions of others. Any violation of this principle constitutes academic dishonesty and is liable to result in a failing grade and disciplinary action.