

## COURSE PROFILE

<b>Course Number:</b> IE413	<b>Course Title:</b> Supply Chain Management
<b>Required / Elective:</b> Elective	<b>Pre-requisite:</b> IE 301 or IE 306 or IE senior standing
<p><b>Catalog Description:</b></p> <p>Fundamentals of supply chain management and enterprise resources planning (ERP); aggregate production planning: static, dynamic, nonlinear and lot sizing models; operations scheduling: flow shops and job shops; materials management and materials requirement planning (MRP); capacity resources planning (CRP); distribution system management; implementation of manufacturing management strategies.</p>	<p><b>Textbook / Required Material:</b></p> <p>Designing and Managing the Supply Chain (3rd edition); Simchi-Levi, Kaminsky, and Simchi-Levi; McGraw Hill, 2007</p>
<b>Course Structure / Schedule :</b> (3+0+0) 3 / 6 ECTS	
<p><b>Extended Description:</b></p> <p>Supply Chain Management deals with the integration of all the activities to move product and information to, from, and between members of a supply chain. It provides for businesses and their partners the framework within which they cooperate to bring goods, services and information efficiently to their customers. Contemporary approaches and strategies, models, algorithms and tools for the integration of a supply chain in ways that reduce system-wide costs, and improve system-wide performance are explored. Insights into the conceptual foundations of SCM, and modern approaches are illustrated through case studies and examples from industries. Topics covered include: Inventory Policies, Lead Times, Risk Pooling, Logistics Network Configuration, Value of Information, The Bullwhip Effect, Push-Pull Systems and Demand Driven Strategies, Third-Party Logistics, Design for Logistics, and Mass Customization.</p>	
<p><b>Design content:</b> A term project involving data collection, modeling, performance evaluation, and optimization is undertaken as a team.</p>	<p><b>Computer usage:</b> Relevant supply chain applications are reviewed. Computer based learning games are used in class. Spreadsheet software and optimization programs are used in homeworks and term project.</p>
<p><b>Course Outcomes:</b> [relevant program outcomes in brackets]</p> <ol style="list-style-type: none"> <li>1. Understand the motivations of and the relationship between suppliers and distributors to ensure supplies of raw materials and markets for finished goods [4, 5, 6]</li> <li>2. Understand implications of SCM on manufacturers and service providers and the strategic impact of integrated SCM on the competitive power of leading corporations [4, 5, 6]</li> <li>3. Understand the necessity to build strategic partnerships and trust within the supply chain [4, 5, 6]</li> <li>4. Recognize the major challenges in implementing an integrated SCM structure [4, 5, 6]</li> <li>5. Learn some of the state of the art technologies and approaches that reduce production, inventory and transportation costs, and improve service levels and profitability [1, 2, 4, 5, 6, 7, 8, 9]</li> <li>6. Understand the concept of risk in the supply chain, and how it can be distributed upstream and downstream [1, 2, 4, 5, 6, 7, 8, 9]</li> <li>7. Develop methods to measure supply chain performance, design an efficient supply chain, identify how to improve its operations, pick one of the known strategies and tailor it to the specifics of the situation at hand to uncover full potential of the supply chain [1, 2, 4, 5, 6, 7, 8, 9, 10]</li> </ol>	

<b>Recommended reading:</b> Supply Chain Management: Strategy, Planning and Operations (4th edition); Chopra and Meindl, Pearson Prentice Hall, 2009	
<b>Teaching Methods:</b> Lectures, readings, learning games, homeworks, case studies, group project	
<b>Assessment Methods:</b> [Related to course outcomes]	
Homeworks [1, 2, 3, 6, 7]	15%
Case Studies [1, 2, 3, 4, 5, 6]	15%
Midterm Exams [5, 6, 7]	25%
Project [1, 2, 3, 4, 5, 6, 7]	15%
Final [5, 6, 7]	30%
<b>Student Workload:</b>	
Lectures	42 hours
Homeworks	16 hours
Case Studies	20 hours
Learning Games	12 hours
Project	23 hours
Preparation for Exams	30 hours
Exams	7 hours
<b>TOTAL</b>	<b>150 hours = 25 × 6 ECTS</b>
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