



University of Tehran  
School of Industrial Engineering  
(Course Plan)

<b>Course Name:</b> Supply Chain Planning & Optimization (SCP&O)	<b>Course No.:</b>
<b>Course type:</b> Required <input type="checkbox"/> Elective <input checked="" type="checkbox"/>	Credits: 3
<b>Course Level:</b> Undergraduate <input type="checkbox"/> Graduate <input checked="" type="checkbox"/>	
<b>Instructor:</b> Seyed Ali Torabi <b>Date:</b> 30/08/1392	<b>Academic position:</b> Associate Professor
<b>Prerequisite(s):</b> Operations research 1,	
<b>Course objectives:</b> Extending modeling skills and providing new concepts and optimization based tools, applicable to the design and planning of supply chains	
<b>Required software:</b> GAMS,	
<b>Grading:</b> Assignments: 15% Final exam: 40% Seminar: 15% Term project: 30%	
<b>Course references:</b> <ol style="list-style-type: none"><li>1. S. Chopra and P. Meindl, <i>Supply Chain Management: Strategy, Planning and Operations</i>, 3rd Edition, Prentice Hall, 2006.</li><li>2. H. Stadtler and C. Kilger, <i>Supply Chain Management and Advanced Planning, Concepts, Models, Software, and Case Studies</i>, 4th Edition, Springer-Verlag Berlin Heidelberg, 2008.</li><li>3. A. G. de KoK and S. C. Graves, <i>Handbooks in Operation Research and Management Science: Supply Chain Management: Design, Coordination and Operation</i>, Elsevier, 2003.</li><li>4. D. Simchi-Levi, S. D. Wu and Z. M. Shen, <i>Handbook of Quantitative Supply Chain Analysis</i>, Kluwer Academics Publishers, 2004.</li><li>5. D. Simchi-Levi, P. Kaminsky and E. Simchi-Levi, <i>Designing and Managing the Supply Chain</i>, 2nd Edition, McGraw-Hill, New York, 2003.</li><li>6. Selected papers from recent literature in relevant areas.</li></ol>	

## Course Schedule

Week	Subject
1	Basics of supply chains: some preliminary concepts and definitions
2	Supply chain strategies
3	Supply chain operations: Process view vs. Pull/Push view
4	Origins of Supply chains: Bullwhip effect, Hierarchical Production Planning (HPP)
5	Supply Chain Planning Matrix: Hierarchical planning, Integral planning
6	Supply Chain Network Design (SCND)
7	Supply Chain Master Planning (SCMP)
8	Order promising-Advanced Available To Promise (AATP) models
9	Integrated production planning and scheduling
10	Purchasing and Material Requirements Planning
11	Distribution and transportation network design
12	Distribution and transportation planning
13	Supply Chain Coordination and Integration
14	Supply Chain contracts
15	Collaborative & decentralized Planning in supply chains