



University of Tehran  
School of Industrial Engineering  
(Course Plan)

<b>Course Name:</b> Production Planning	<b>Course No.:</b> 810908101
<b>Course type:</b> Required <input checked="" type="checkbox"/> Elective <input type="checkbox"/>	Credits: 3
<b>Course Level:</b> Undergraduate <input checked="" type="checkbox"/> Graduate <input type="checkbox"/>	
<b>Instructor:</b> Seyed Ali Torabi	<b>Academic position:</b> Associate Professor
<b>Date:</b> 30/08/1392	
<b>Prerequisite(s):</b> Operations research 1, Inventory control 1	
<b>Course objectives:</b> Describing the preliminary concepts of production & inventory planning and control as well as the related optimization based techniques according to the MRPII framework (including the APP, MPS, MRP and Scheduling methods)	
<b>Required software:</b> GAMS,	
<b>Grading:</b> Assignments: 15% Final exam: 65% Term project: 20%	
<b>Course references:</b> <ol style="list-style-type: none"><li>1. Vollmann, Berry, Whybark and Jacobs, 2005, Manufacturing planning &amp; control for supply chain management, Fifth edition, McGraw Hill.</li><li>2. L.A. Johnson &amp; D.C. Montgomery, 1974, Operations research in production planning, scheduling and inventory control, John Wiley &amp; Sons.</li><li>3. A.C. Hax &amp; D.C. Candea, 1984, Production and Inventory Management, Prentice Hall.</li><li>4. K.R. Baker, 1974, Introduction to sequencing and scheduling, John Wiley &amp; Sons.</li></ol>	

## Course Schedule

Week	Subject
1	An introduction to production & inventory planning and control
2	Concepts and principles of the Aggregate Production Planning (APP)
3	Linear cost methods in APP
4	Application of transportation model in production planning
5	Fixed cost (Lot size) models in production planning
6	Application of dynamic programming in production planning
7	Master production scheduling (MPS): concepts & methods
8	Hierarchical Production Planning (HPP)
9	Material Requirement Planning (MRP): concepts & methods
10	Capacity Planning (RCCP, CRP)
11	An introduction to production scheduling
12	Single machine scheduling
13	Parallel machine scheduling
14	Flow shop scheduling
15	Job shop scheduling