

Operations  
Sem III

**Course Content:**

Semester	III Core
Subject	Manufacturing Resource Planning and control
Course Code	MMSOC304 (RGCMS)
Credits	4
Duration	40

**Learning Objectives**

1	To understand importance of manufacturing resources planning and control to achieve continuous improvement in the better performance.
2	To give knowledge of quantitative methods as well as various tools of resources planning like MRP1,MRP2 & ERP for decision making in operations.

**Prerequisites if any**

Operations management

**Connections with Subjects in the current or Future courses**

Materials Management , SCM

**Module**

Sr. No.	Content	Activity
1.	Overview of operations planning & control recent business environment, Challenges in competitive edge by PPCVarious Manufacturing resources importance their planning and control. Functions of operation planning andcontrol Hierarchy of production planoverview,	Case Study/ Role-play/ Drama/ Group Discussion
2.	Various models optimization linebalancing models. Demand management capacity planning models lay out models.Quantitative problems, MRP as systems. Numbering Problems.	Case Study/ Role-play/ Drama/ Group Discussion
3.	Capacity Management: Introductionto capacity, capacity management, need capacity planning level visa visa, production planning. Capacity expansion strategies Rough out capacity planning RCCP CRP- Capacity requirement PlanningScheduling strategies Production smoothly policies Finite & Infinite loads.	Case Study/ Role-play/ Drama/ Group Discussion
4.	Mater production scheduling module (I) Need objectives functions flow of	Case Study/ Role-play/ Drama/ Group Discussion

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	<p>materials in different manufacturing scenarios case studies MPS module (II) Broader heading, planning horizon time periods, order management, safety and hedges, effect of changing MPS Materials requirement planning MRP1 Broader topics: Introduction roles &amp; functions. Independent &amp; dependent demand, Types of Bills of materials, Manufacturing Resource planning MRP II ( Module I) : Introduction to MRP II, Roles functions frame work of information flow in MRP II, Relation of MRP II with demand management and capacity management manufacturing MRP II module II: Transition of MRP I to MRP II closed loop MRP, comparison between MRP1 &amp; MRP II benefits. ERP - Need, function &amp; utility to business ERP-SAP-PPC modules. Reports, Interpretation variance.</p>	
5.	<p>linkages to achieve business plans Case studies &amp; presentation on all above topics. Analysis - use in decision making. Case studies &amp; presentation on all above topics.</p>	Case Study/ Role-play/ Drama/ Group Discussion

Course Outcomes

Code	Course Outcome	Cognition
MMSOC304.1	Understand the operations planning & control, manufacturing resource and planning concepts	Understand
MMSOC304.2	Understand the production plans overview, linkages to achieve business plans and models optimization line balancing models	Understand
MMSOC304.3	Analyze the material production scheduling module (I), flow of material, MPS module (II) Broader heading and effect of changing MPS	Analyze
MMSOC304.4	Analyze materials requirement planning MRP1- : Introduction roles & functions, types of bills and capacity management	Analyze
MMSOC304.5	Analyze the Manufacturing Resource planning MRP II ( Module I), MRP II module II and ERP	Analyze

**Text Books**

1	Production/ Operations Management	Ashwathappa & Shridhar Bhat
2	Operations Management ( Theory & Practice)	B. Mahadevan Person publication 2 <sup>nd</sup> edition.
3	Production/ Operations Planning and Control	Stephen Chapman

**Reference books**

1	Elements of production planning & control	Samuel Eilon
2	Operations Planning & Control	S.K Mukhopadhaya
3	Manufacturing Planning and Control	Volmann, Berry, Whybark