



SECOND SEMESTER 2014-2015
Course Handout (Part II)

Date: 06/01/2016

In addition to part-I (General Handout for all courses appended to the time table) this portion gives further specific details regarding the course.

Course No : MSE G512
Course Title : Manufacturing Planning & Control
Instructor-in-charge : SRINIVAS KOTA

1. Course Description

Operations and manufacturing strategy for competitive advantage, product design and planning, forecasting product demand, facilities location, process selection and design, capacity planning, layout of facilities, job design and work measurement, aggregate planning, master manufacturing schedules, material requirement planning for dependent demand, short term schedules and shop floor control, independent demand inventory systems, logistics and supply chain management, just-in-time systems, maintenance and reliability, quality management, managing projects, strategies for manufacturing excellence.

2. Scope

The scope of this course is to

- Provide a good foundation in manufacturing planning & Control
- Explain the concept and importance of decision making in manufacturing planning
- Produce capability in handling of decision making in design, planning and control of manufacturing systems.
- Develop skills in decision making of manufacturing planning and control.
- Make proficient the student in manufacturing planning and control.

3. Objectives

At the end of this course, the student will be in a position to

- understand the decision process in design, planning and control of manufacturing systems.
- apply the analytical skills for decision making in manufacturing planning and control.

4. Text Book

T. Chase R.B, Shankar R., and Jacobs F.R., "Operations and Supply Chain Management", 14th Edition, McGraw-Hill Edition, 2014.

5. Reference Books

R1. Krajewski L. J. and Ritzman L. P., "Operations Management", 8th Edition, Pearson Education, 2008.

R2. Russell and Taylor, "Operations Management", 7th Edition, Wiley India Pvt. Ltd., 2011.





6. Course Plan

Lecture No.	Topics to be covered	Learning Objectives	Reference Chapter (Book)
1-3	Introduction	Historical development, operations and productivity	1, 2 (T)
4-7	Design of Products and Services	Product life cycle, New product development	3 (T)
8-11	Forecasting	Forecasting in OM, casual and projective forecasting, measures of forecast accuracy	18 (T)
12-14	Process selection and design	Process planning, process design, process technologies, processes in the service sector	7, 9, 14 (T)
15-17	Facilities Location	Scoring models, geometric models, locating multiple facilities, location of facilities on networks	15 (T)
18-19	Capacity Management	Process capacity, productivity, capacity planning, changing capacity over time	5 (T)
20-21	Facility Layout	Layout for types of process, design of layouts :process, product, hybrid, fixed-position and specialized layouts	8 (T)
22-25	Job design and work measurement	Job design decisions, work methods, work measurements and standards	8, Supple 8 (R2)
26-28	Aggregate planning	Hierarchy of planning decisions, aggregate planning, master schedule, short-term schedules	19 (T)
29-30	MRP	MRP, discrete variable demand, extensions to MRP	21 (T)
31-33	Inventory management	Inventory control for production systems, probabilistic demand, periodic review systems	20 (T)
34-35	Scheduling	Work center scheduling, Priority rules	22 (T)
36-37	Supply chain management	Supply chain design strategy, outsourcing, value density, global sourcing, mass customization	16, 17 (T)
38-40	Project management	Structuring projects, work breakdown structure, project control charts, network planning models	4 (T)

7. Evaluation Scheme

EC No.	Evaluation Component	Duration	Weightage	Marks	Date & Time	Remarks
1	Mid-Sem	90 Min	20%	20	18/3 4:00-5:30 PM	CB
2	Quiz		20%	20		CB
3	Project		20%	20		Take Home
4	Comprehensive Examination	3 Hrs	40%	40	13/5 AN	CB + OB

8. **Chamber Consultation hour:** Wednesday 10th Hour, Chamber: 2243 R.

9. **Notices:** All notices regarding the course will be displayed on the **Department of Mechanical Engineering Notice Board**.

10. **Makeup policy:** Only students with genuine reason will be given consideration.

Instructor-in-charge
MSE G512

