

Gautam Buddha University, Greater Noida

School of Engineering (Mechanical Engineering)

Degree	Course Name	Course Code	Marks:100
M. Tech.	Production & Operations Management	MEI 503	SM+MT+ET 25+25+50
Semester	Credits	L-T-P	Exam.
I	4	3-1-0	3 Hours

Unit - I

Introduction: Necessity of planning and control; Functions of production control dept; Factors determining control procedure; Types of controls.

(05 Hours)

Unit - II

Demand Forecasting: Importance of forecasting; Fields for forecasting: techniques for forecasting sales; Conventional and statistical techniques; Regression or Co-relation analysis; Short term and long term trends in business; Forecasting demand for spare parts; Stock forecast.

(10 Hours)

Unit - III

Operational Planning: Adjustments in forecasting; Planning for making and buying; Types of plans; Mathematical planning techniques; Quantity standards; Frequency standards; Financial aspects of planning; Analysis of machine capacity; Planning for labor.

(10 Hours)

Unit - IV

Scheduling and Material Requirement Planning: Routing; Definition; Routing procedures including bill of materials; Route file; Routing for two or more items; Standard route charts; Recent techniques of routing; Progress reporting and expediting methods; Master schedule; Departmental and shop schedule charts for scheduling; Gantt Charts- loading and scheduling; Sched-U-graph; Boards for scheduling; Application of computers in production planning and control activities; Material requirement planning (MRP); Manufacturing resource planning (MRP II). **(10 Hours)**

Unit – V

Just-in-time and Lean Production: Basic elements of JIT; Cellular layouts; The pull system; Kanban production control system; Total productive maintenance. **(05 Hours)**

Unit – VI

Human Resources in Operations Management: Human resources in strategic planning; Limitations of scientific management; Behavioral influences on job design; Contemporary trends in human resources; Responsibility and empowerment. **(05 Hours)**

Recommended Books:

1. Production Planning Control and Industrial Management; K. C. Jain & N. L. Aggarwal; Khanna Publishers
2. Operations Management; Russel and Taylor; PHI.
3. Modern Production/Operations Management; E. S. Buffa and R. K. Sarin; John Wiley & Sons