Syllabus Outline

1. GENERAL
1.1 COURSE TITLE: **Operations Management**
1.2 COURSE NUMBER: **MT5802**
1.3 CONTACT HRS: (30 Hours- Teaching 10 hours- Project) Credits: 08
1.4 SEMESTER -OFFERED:
1.5 PREREQUISITE: Operations Research, Statistics
1.6 SYLLABUS COMMITTEE MEMBER:
2. OBJECTIVE
- Understand the fundamental, practical science of Operations Management
- Explore the interface between operations and other business functions
- Examine how these principles operations management can be employed in both tactical and strategic decision making in firms
- Develop ability to analyze and address problem related to the design, planning, control, and improvements of manufacturing and service operations
- To provide a set of foundational skills useful for more advanced courses in Operations

3. COURSE CONTENT (Unit wise distribution of content and number of lectures)

Unit-I: Overview
Historical Evolution
Operations as a source of competitive Advantage
Operations Management Definition
Interface with other management functions
Link Between Operations and Finance
Productivity and Productivity Measures
(3 hours)

Unit-II: Strategy, Products, and Capacity
Operations Strategy
NPD
Strategic Capacity Management
Project Management
(6 hours)

Unit-III: Process Management
Process selection
Product-process matrix
Process mapping
Throughput Time, Cycle time
Little's Law
Waiting Lines, Queuing Theory
Process Simulation
(5 hours)

Unit-IV: Capacity Planning and Facilities Design
Capacity Analysis
Overall Equipment Effectiveness
Bottleneck analysis
Basic Layouts and their designing

(3 hours)
Unit-V: Process Improvement
Quality Management
Evolution of Quality Management and Contribution of
quality Gurus
Six Sigma, SQC, SPC
Systematic Problem Solving Methodology
Lean Operations
(5 hours)
Unit-VI: Inventory Management:
Single period, Multi-period models
Quantity Discounts
(3 hours)
Unit-VII: Planning & Scheduling
Sales & Operations Planning Process
Aggregate Planning
CRP, MRP, ERP
Scheduling, TOC
(5 hours)
4. READINGS
4.1 TEXT BOOKS:
1. Chase, R.B., Ravi Shankar & Jacobs, F.R. (2018), Operations & Supply Management. 15th Edition,
McGraw Hill
4.2 REFERENCE BOOKS:
1. Ravi Anupindi, Sunil Chopra et al (2013) Managing Business Process Flows: Principles of Operations Management, Pearson
2. Edward Pound, Jeffrey Bell, Mark Spearman(2014) Factory Physics for Managers_ How Leaders
Improve Performance in a Post-Lean Six Sigma World-McGraw-Hill Education
3. Russell & Taylor, Operations Management along Supply Chain, Wiley
4. Slack N, Chambers S, Johnston R(2010) Operations management 6th ed_ Prentice Hall
5. Krajewski, Lee J and Ritzman, Larry P., Operations Management: Processes and Value Chains, Pearson
6. Boyer et al. (2011) Operations Management: Strategy, Global Supply Chain and Service Operations 1st Edition, Cengage Learning
7. Gerard. C and Christian. T, (2018), Matching Supply with Demand: An Introduction to Operations Management, McGraw Hill
8. Goldratt and Cox(1992). The Goal, North River Press, USA
5. OUTCOME OF THE COURSE
- At the conclusion of the course, students will be able to appreciate Operations management processes and address the questions that an organization faces in its choice of products, manufacturing technology, utilization of capacity, management of quality, costing, sourcing etc.
- Develop intuitive understanding of various principles of Operation Management
- This course lays the foundation for a career in designing and managing business processes besides developing insights about strategic and tactical aspects of operations.

- Along the way, students will become familiar with spreadsheets, optimization solvers, and discrete event simulation tools.