



# OPERATIONS AND SUPPLY CHAIN MANAGEMENT



**PROF. G. SRINIVASAN**  
Department of Management  
IIT Madras

**TYPE OF COURSE** : Rerun | Elective | UG/ PG

**COURSE DURATION** : 12 weeks (28 Jan'19 - 19 Apr'19)

**INTENDED AUDIENCE** : B.E, M.E, M.S, B.Sc,  
M.Sc, Ph.D, M.A.

**EXAM DATE** : 27 Apr 2019

## COURSE OUTLINE :

This course introduces the viewer to the basics of Operations and Supply Chain Management. The concepts in Operations Management are restricted to the planning and operational decisions within an organization while the supply chain concepts are for a network of organizations. The main emphasis of the course is on the basic concepts and on quantitative modeling of the various decision problems.

## ABOUT INSTRUCTOR :

G Srinivasan is a Professor in the Department of Management Studies at IIT Madras. He has more than 25 years of teaching and research experience. His areas of Interest include Operations Research, Supply Chain Management, O.R. Applications. His videos in Operations Research available under NPTEL are popular.

## COURSE PLAN :

- Week 01** : Forecasting : Need for forecasting | Quantitative methods.
- Week 02** : Facility layout and location : Qualitative aspects | Quantitative models for layout decisions | Product, process fixed position, group layout | Location decisions-quantitative models.
- Week 03** : Capacity and aggregate planning | Capacity measurement, Long-term and short term strategies | Aggregate planning.
- Week 04** : Inventory management : Various costs in inventory management and need | Deterministic models and discounts | Probabilistic inventory management.
- Week 05** : Scheduling models and applications | Scheduling in MRP system | Sequencing rules and applications | Batch production sequencing and scheduling.
- Week 06** : Introduction to supply chain : Definition, complexity, key issues | Centralized vs. decentralized systems.
- Week 07** : Value of information and supply chain integration : Bullwhip effect | Push-based, pull based systems.
- Week 08** : Outsourcing : Make or buy decisions.
- Week 09** : Transportation decision : Drivers of the decision | Network design decisions | Cross-docking, transshipment.
- Week 10** : Distribution and logistics in supply chains : Direct shipment/intermediate storage policies | Vehicle routing models | Third-party logistics.
- Week 11** : Information technology in supply chain | Enabling supply chain through IT | ERP vendor platforms | Service oriented architecture (SOA) | RFID.
- Week 12** : Summary