

Course Code	MB18OM10	Course Name	SUPPLY CHAIN ANALYTICS	Course Category			L	T	P	C
							3	0	2	4

Pre-requisite Courses	Successfully completed, a minimum test score achieved, or a specified condition satisfied before a student can enroll in the this course.	Co-requisite Courses		Progressive Courses	Certificate in Supply Chain Management and Supply Chain Analytics, etc.,
Course Offering Department	College of Management	Data Book / Codes/Standards			

**Course Learning Rationale (CLR):** The purpose of learning this course is to:

- CLR-1: Gain detailed knowledge on nature and concepts of Supply Chain Management
- CLR-2: Study the main areas of Supply Chain Models
- CLR-3: They will have insight of Resource planning models
- CLR-4: Sustainable supply chain strategic of quality planning and control
- CLR-5: Students will also be empowered to apply the analyze of supply chain

**Learning**

	1	2	3
Level of Thinking (Bloom)			
Expected Proficiency (%)			
Expected Attainment (%)			

**Program Learning Outcomes (PLO)**

1	2	3	4	5	6	7	8
Business Environment & Domain Knowledge (BEDK)	Critical Thinking, Business Analysis, Problem Solving and Innovative Solutions (CBPI)	Global Exposure and Cross-cultured understanding (GECCU)	Social Responsiveness and Ethics (SRE)	Effective Communication (EC)	Leadership and Team Work(LT)	PSO - 1	PSO - 2
M	H	M	H	H	M		

**Course Learning Outcomes (CLO):** At the end of this course, learners will be able to:

- CLO-1: Understand the process and information required for preparing the different types of supply chain metrics
- CLO-2: Understand the insights on supply chain Models
- CLO-3: Enhance the Resource planning models
- CLO-4: Understand the supply chain strategic of quality planning and control
- CLO-5: Analyze the supply chain tools and system optimization.

Duration (hour)	9	9	9	9	9	
S-1	SLO-1	Introduction – Nature and concepts	Location and Distribution Decisions in Supply Chain	Cycle Inventory Models	Overview on quality planning and control	Application of OR
	SLO-2					
S-2	SLO-1	Overview on Supply Chain	Modeling with Binary Variables	Continuous Demand Instantaneous Replenishment Model	application of SQC	Tools for resource optimization
	SLO-2					
S-3	SLO-1	Requirements of Manufacturing	Capital Budgeting, Fixed Charge, Set covering	Backordering	SPC	Application of OR Tools for Distribution
	SLO-2					
S-4	SLO-1	Supply Chain Management	Continuous Location Models–Single Facility	Inventory Model with Discount	TQM	System Optimization
	SLO-2					
S-5	SLO-1	Purchasing in Supply Chain	Gravity and Minimax methods	Multiple Item Inventory Models	TPM for quality	KPIs for analytics
	SLO-2					
S-6	SLO-1	E–Commerce	Production Planning Decisions–Graphical Approach	Production Consumption Model	TPM for planning and control	understanding the deviation analytics

	SLO-2		Linear Programming			
S-7	SLO-1	Types of Supply Chain	Transportation Problem	Lot Sizing for analytics	application of experimental design	Optimum along with root causes
	SLO-2					
S-8	SLO-1	Supply Chain Metrics	Dynamic Programming	Time Varying Demands for analytics	Analysis of experimental design	Designing Dashboards
	SLO-2	Relationship between Supply Chain Metrics and other metrics	Production Control Decisions–Sequencing and Scheduling			Numerical Examples of OR tools
S-9	SLO-1	Financial Metrics in SCM	JIT and Theory of Constraints	Numerical Examples of Inventory Models	Case Study	Case Study
	SLO-2					

<b>Learning Resources</b>	1.	A Ravi Ravindran, Donald P.Warshing, "Supply Chain Engineering, Models and Application", CRC Press, Taylor and Francis Group, New York,2013
	2.	G.Srinivasan, "Quantitate Models in Operations and Supply Chain Management", PHI Learning Pvt Limited, New Delhi, 2010
	3.	MuthuMathirajan, "Analytics in Operations/Supply Chain Management", I.K International Publishing House Private Ltd, New Delhi
	4.	Donald Bowersox, "Logistical Management, The Integrated Supply Chain Process", Tata McGraw Hill Education Private Limited, New Delhi, 2010
	5.	Benjamin S.Blanchard, "Logistics Engineering and Management", PHI Pvt Limited, New Delhi, 2005

		Learning Assessment											
Bloom's Level of Thinking		Continuous Learning Assessment (50% weightage)										Final Examination (50% weightage)	
		CLA -1 (5marks)		CLA -2 (5marks)		CLA-3 (10marks)		CLA -4 (15marks)		CLA -5(15marks)		Marks -100 which will be weighted at 50%	
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice			Theory	Practice
Level 1	Remember												
	Understand	50						35		35		35	
Level 2	Apply												
	Analyze	25						35		35			35
Level 3	Evaluate												
	Create	25						30		30		30	
	Total	100 %		100 %		100 %		100 %		100%		100 %	

# CLA – 1-5: can be from any combination of these: Class Participation, Surprise Test, Cycle test, Model Examination, Mini-Projects etc.,

<b>Course Designers</b>		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
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