



**PARVATHANENI BRAHMAYYA  
SIDDHARTHA COLLEGE OF ARTS & SCIENCE**  
*Autonomous*  
Siddhartha Nagar, Vijayawada-520010  
*Re-accredited at 'A+' by the NAAC*

### 22ANDSL201: Supply Chain Analytics

<b>Course Code</b>	<b>22ANDSL201</b>	<b>Course Delivery Method</b>	Classroom / Blended Mode
<b>Credits</b>	4	<b>CIA Marks</b>	30
<b>No. of Lecture Hours / Week</b>	5	<b>Semester End Exam Marks</b>	70
<b>Total Number of Lecture Hours</b>	75	<b>Total Marks</b>	100
<b>Year of Introduction: 2023-24</b>	Year of offering:2024	<b>Year of Revision: NIL</b>	Percentage of Revision: NIL
<b>Course Focus</b>	<b>Employability</b>	Entrepreneurship	<b>Skill Development.</b>

**Course Outcomes:**

**By the end of the course, student able to**

- CO-1 Understanding key components and functions of a supply chain.
- CO-2 Implement strategies to enhance overall supply chain performance.
- CO-3 Apply optimization techniques to streamline supply chain processes.
- CO-4 Apply analytics to optimize safety stock levels and reduce holding costs.
- CO-5 Evaluate the accuracy and reliability of demand forecasts.

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (H-High, M-Medium, L-Low)								
		PO1	PO2	PO3	PO4	PO5	PO6	PO7
	CO1	3						2
	CO2		3	2				
	CO3		3					2
	CO4	2	3					
	CO5		3					2

## **Course Content**

### **UNIT I : Introduction to Supply Chain Analytics**

Introduction to supply chain analytics, Value chain, Evolution of Supply chain analytics, Supply chain planning, Different Views of supply chain, Analytics in Supply chain. **(15 Hours)**

### **UNIT II Supply Chain Strategies**

Supply Chain Strategy, Supply chain Drivers, Developing a supply chain Strategy, Strategic Fit in Supply Chain, Demand forecasting in Supply chain. **(15Hours)**

### **Unit III Inventory and Network Analysis**

Inventory management in Supply chain, Echelon Model of Inventory management–Network design in Supply chain, PERT and CPM, Northwest corner, Least Call Cell Method, Network design of Global, Alternative channels of distribution. **(15Hours)**

### **Unit IV Analytics in Supply Chain**

Optimum level of Product Availability, Time value of money in supply chain Analytics, Predictive modelling in forecasting Supply chain analytics, Representation of uncertainty in Supply chain, Trends Challenges and Future of Supply chain. **(15Hours)**

### **Unit V Supply Chain Techniques**

Bull-Whip Effect and time series Analysis, forecasting methods- Exponential smoothing method, Tracking signal and seasonality model. **(15 Hours)**

### **Suggested Readings:**

1. Mohanty R P, S G Deshmuki (2005) “Supply Chain Management- theories & practices” Biztantra publishers.
2. Rabindranath Bhattacharya & Anindita maitra Bhattacharya (2022) “Supply Chain Analytics” strategies, Models and solutions, (1<sup>st</sup> edition) Sage Publications.
3. Sunil chopra, Dharam Vir Kalra (2018) Supply Chain Management, (7<sup>th</sup> edition) Pearson Education, India.
4. T.A.S Vijayaraghavan (2021) "Supply Chain Analytics" – Wiley publication .
5. Sanders, N. R. (n.d.). Supply Chain Management: A Global Perspective. United Kingdom: John Wiley & Sons, Limited.
6. Watson, M., Lewis, S., Cacioppi, P., Jayaraman, J. (2012). Supply Chain Network Design: Applying Optimization and Analytics to the Global Supply Chain. United States: Pearson Education.