MMPL-003

Master of Business Administration Logistics and Supply Chain Management (MBALS)

ASSIGNMENT
For
January 2026 and July 2026 Semesters

MMPL-03: DATA ANALYTICS AND SUPPLY CHAIN MANAGEMENT

(Last date of submission for January 2026 Semester is 30th April, 2026 and July 2026 Semester is 31st October 2026)

SCHOOL OF ENGINEERING & TECHNOLOGY
INDIRA GANDHI NATIONAL OPEN UNIVERSITY
MAIDAN GARHI, NEW DELHI – 110 068

ASSIGNMENT

Course Code	**:**	**MMPL-03**
Course Title	**:**	**Data Analytics and Supply Chain Management**
Assignment Code	**:**	**MMPL-03/TMA/JANUARY 2026/JULY/2026**
Coverage	**:**	**All Blocks**

Note: Attempt all the questions and submit this assignment to the Coordinator of your study centre. Last date of submission for January 2026 Semester is 30th April, 2026 and July 2026 Semester is 31st October 2026.

1. (a) 'Data analytics transforms supply chain management from reactive operations to proactive, data-driven decision-making.' Does every supply chain application necessarily require advanced analytics, or can basic techniques suffice? Explain with examples from the course.

(b) How do you collect and manage data in supply chains? What precautions must a manager take while handling supply chain data? Provide suitable examples.

2. '(a) Descriptive and diagnostic analytics are the foundation, but predictive and prescriptive analytics drive true competitive advantage in supply chains.' Do you agree or disagree with this statement? Please explain.

(b) Explain data visualization tools such as Tableau and Power BI. What are the various issues involved in interpreting and visualizing supply chain data?

3. (a) Describe the role of data analytics in supply chain network design. How can forecasting models optimize inventory and capacity? Provide examples.

(b) What is transportation planning in supply chains? Discuss how GIS analytics and scenario modeling contribute to risk assessment and resilient supply chains.

4. (a) Explain warehouse efficiency techniques like slotting algorithms and route optimization with heuristics. How do these impact order fulfillment KPIs such as OTIF rates?

(b) 'Production analytics enable real-time quality control and lean operations in supply chains.' Do you agree or disagree? Illustrate with examples from supply chain execution.

5. (a) Discuss predictive forecasting using time-series models and linear/mixed-integer optimization for supply chain planning. What challenges arise in implementing these?

(b) Distinguish between:

i. Descriptive and diagnostic analytics;
ii. Predictive and prescriptive analytics
iii. Data-driven supply chain design vs execution analytics
iv. Optimization models vs machine learning techniques
v. AI/ML for anomaly detection vs autonomous supply chains