COURSE SYLLABUS

How AI Is Transforming Global Supply Chain Management Course (Self-Paced)

This advanced course equips senior supply chain, operations, and strategy professionals with the strategic frameworks needed to lead artificial intelligence adoption across global networks. Participants learn to apply AI to planning, logistics, risk management, and sustainability while addressing the governance, infrastructure, and workforce considerations essential to responsible, enterprise-wide transformation.

> Group classes (Live Online) and onsite training are available for this course. For more information, email onsite@graduateschool.edu or visit: https://www.graduateschool.edu/courses/how-ai-is-transforming-global-supply-chain-management-course-self-paced



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Course Outline

Module 1: Understanding AI's Role in Supply Chains

- Explain the core concepts of artificial intelligence and how they apply to modern supply chain functions.
- Analyze how AI transforms planning, sourcing, manufacturing, logistics, and distribution across global networks.
- Evaluate how AI leverages data to strengthen forecasting, demand planning, and operational decision-making.
- Assess the strategic value of AI in improving efficiency, visibility, agility, and competitive advantage.

Module 2: Applying AI-Driven Decision-Making Models

- Explain how AI-enabled decision frameworks differ from traditional supply chain decision-making approaches.
- Apply predictive and prescriptive analytics to improve forecasting, scenario planning, and operational decisions.
- Evaluate how AI supports real-time data processing and dynamic decision-making in fast-moving environments.
- Select and apply AI-driven models to optimize outcomes such as cost, service level, and efficiency.

Module 3: Improving Supply Chain Visibility and Risk Management

- Identify AI-enabled technologies—including machine learning, IoT, and digital twins—that support end-to-end visibility.
- Apply AI-driven data integration and analytics to consolidate information and improve supply chain transparency.
- Use AI models to detect anomalies, predict disruptions, and monitor risk factors across global networks.
- Develop AI-supported strategies to proactively mitigate risk and automate response decision-making.

Module 4: Optimizing Logistics and Network Performance

- Apply AI algorithms to optimize transportation routes, reduce transit times, and improve cost efficiency.
- Use AI-powered systems to enhance warehouse layout, automate picking, and optimize inventory flow.
- Redesign supply chain networks with AI to improve distribution efficiency and responsiveness to demand shifts.

- Leverage AI-enabled tracking and analytics to monitor logistics performance and drive continuous improvement.

Module 5: Integrating AI into Strategic Supply Chain Planning

- Align AI initiatives with organizational objectives such as cost leadership, service excellence, resilience, and growth.
- Integrate AI into strategic, tactical, and operational planning across forecasting, procurement, production, and distribution.
- Design an AI adoption roadmap, including technology selection, investment prioritization, and phased implementation.
- Evaluate KPIs and use AI-driven insights to continuously refine supply chain planning and execution.

Module 6: Evaluating Data, Technology, and Infrastructure Requirements

- Assess data quality, availability, and governance structures required to support effective AI implementation.
- Compare AI tools, platforms, and architectures (e.g., cloud, machine learning frameworks, IoT) to identify best-fit solutions.
- Examine computing, storage, and network requirements needed to support scalable, real-time AI processing.
- Develop approaches to ensure integration and interoperability between AI solutions and existing enterprise systems.

Module 7: Addressing Ethical, Workforce, and Change Management Considerations

- Evaluate ethical considerations in AI deployment, including bias, transparency, accountability, and regulatory compliance.
- Analyze the workforce impact of AI adoption and identify reskilling and upskilling strategies for affected roles.
- Develop change management plans that include stakeholder engagement, communication, and resistance mitigation.
- Design approaches that foster a responsible, human-centric AI culture balanced with innovation and oversight.

Module 8: Enhancing Sustainability and ESG Performance with AI

- Evaluate how AI can reduce waste, optimize resource use, and improve energy efficiency across supply chain operations.
- Apply AI tools to collect, analyze, and report ESG metrics in line with global sustainability standards.
- Analyze how AI supports ethical sourcing, supplier sustainability assessments, and circular economy practices.
- Use AI-driven predictive models to identify environmental risk and reduce carbon impact across the network.

Module 9: Building AI-Enabled Competitive Advantage

- Identify opportunities to use AI for strategic differentiation and enhanced customer value propositions.
- Design AI-driven innovation strategies that advance product development, service delivery, and operations.
- Evaluate approaches for scaling AI across global networks, including governance and cross-functional alignment.
- Measure the competitive impact and return on investment of AI initiatives using appropriate KPIs and financial metrics.