Miami Dade College

Course Description

SCM1114 |Applied Advanced Technologies & AI in Supply Chain Management | 3.00 credits

This course provides an in-depth exploration of Industry 4.0 and Artificial Intelligence (AI) applications within the supply chain industry, focusing on strategic support, optimization, data-driven decision-making, and organizational readiness. Students will discover how AI technologies enhance operational efficiency, reduce costs, and improve overall supply chain performance while ensuring responsible and ethical implementation. Through case studies and practical exercises, learners will gain the skills needed to leverage AI for innovative solutions and competitive advantage in supply chain management.

Course Competencies:

Competency 1: The student will demonstrate understanding of Industry 4.0 and AI in supply chain management by:

1. Analyzing the core principles of Industry 4.0
2. Identifying key AI technologies used in supply chains
3. Explaining the role of data analytics in supply chain optimization
4. Evaluating the impact of AI on strategic decision-making
5. Comparing traditional supply chain models with AI-enhanced systems
6. Assessing the potential risks and challenges of AI implementation
7. Discussing the ethical considerations of AI in supply chain operations

Competency 2: The student will develop skills in AI-driven supply chain optimization by:

1. Applying machine learning algorithms to supply chain problems
2. Designing predictive models for demand forecasting
3. Implementing AI-based inventory management systems
4. Optimizing logistics networks using AI tools
5. Creating automated decision support systems
6. Developing AI-powered quality control processes
7. Integrating IoT devices for real-time supply chain monitoring

Competency 3: The student will enhance organizational readiness for AI adoption by:

1. Assessing current supply chain processes for AI potential
2. Identifying key performance indicators for AI implementation
3. Developing change management strategies for AI integration
4. Creating data governance frameworks for AI systems
5. Evaluating infrastructure requirements for AI deployment
6. Designing training programs for AI-enhanced operations
7. Formulating policies for responsible AI use in supply chains

Competency 4: The student will apply AI concepts to real-world supply chain challenges by:

1. Analyzing case studies of successful AI implementations
2. Conducting cost-benefit analyses of AI solutions
3. Proposing AI-driven improvements for existing supply chains
4. Simulating AI-enhanced supply chain scenarios
5. Developing AI-based risk mitigation strategies
6. Creating performance measurement systems for AI initiatives
7. Presenting innovative AI applications for supply chain management

Learning Outcomes

- Solve problems using critical and creative thinking and scientific reasoning
- Formulate strategies to locate, evaluate, and apply information