

GRADUATE CERTIFICATE IN DIGITAL SUPPLY CHAIN MANAGEMENT

OFFERED BY:

The M.S. in Information Science and Technology program in the Department of Business and Information Technology

INTENDED AUDIENCE:

Both on-campus and distance (online) students

PURPOSE:

Success in today's marketplace requires that organizations deliver products and services that provide easily identified value for their customers. This minor draws on strengths within three departments to integrate source (strategic procurement and supply management), production (manufacturing and service operations), and delivery processes (demand fulfillment), with a focus on the use of information technologies as the critical enabler of supply chain efficiencies and responsiveness.

The Digital Supply Chain Management Graduate Certificate is designed to give the student the tools and ideas that help shape and define the various components of value creation. Students can gain knowledge and skills in the full spectrum of supply chain activities: supplier relationships, purchasing management, operations and inventory management, logistics and transportation, quality management, and information technology.

The graduate certificate in digital supply chain management is a professional development program focused on building competency across the foundations of supply chain management. Students attain new skill sets to help them manage and enhance the value of today's complex supply chains.

ADMISSION:

The graduate certificate program is open to all individuals holding a BS, MS or PhD degree in areas such as business, social sciences, technology, engineering, or related disciplines. The certificate program consists of four courses. In order to receive a Graduate Certificate, the student must have an average graduate cumulative grade point of 3.0 or better on a 4.0 scale in the certificate courses taken. Students admitted only to the certificate program will have non-degree graduate status but will earn graduate credit for the courses they complete. The Department of Business and Information Technology will be responsible for offering the core courses at least once per year. The courses in the certificate program should be offered such that students can complete the program in a timely manner. If the four-course sequence approved by the graduate advisor is completed with a grade of B or better in each of the courses taken, the student will, upon application, be admitted to the Master of Business Administration or Master of Science in Information Science and Technology program. The certificate courses taken by students admitted to the program will count towards the MBA or MS degree. Once admitted to the program, a student will be given three years to complete the program as long as a 3.0 average is maintained in the courses taken.

CURRICULUM:

The Graduate Certificate in Digital Supply Chain Management consists of four 3-credit hour courses. Students will be responsible for prerequisite knowledge as determined by course instructors and listed in the Graduate Catalog.

The Graduate Certificate in Management and Leadership requires the following 12 hours of coursework:

One of the following:

- BUS 6425 - Operations and Project Management
- ME 5708 - Rapid Product Design and Optimization

This course:

- ERP 5310 - Supply Chain Management Systems in an ERP Environment

Two courses from the following:*

- ERP 5110 - Enterprise Resource Planning Systems Design and Implementation
- ERP 5410 - Use of Business Intelligence
- ERP 5610 - Advanced Customer Relationship Management
- ERP 6120 - Enterprise Resource Planning Systems Configuration and Integration
- ME 5757 - Integrated Product and Process Design
- ME 5656 - Design for Manufacture
- ME 5760 / AE 5760 - Probabilistic Engineering Design
- ME 5763 - Principles and Practice of Computer Aided Design

* Non Business & Information Technology students must select ERP 5110 as one of the two electives.

COURSE DESCRIPTIONS:

First Level Elective Courses:

BUS 6425 Supply Chain and Project Management

This course covers operations management and its critical role in developing and maintaining effective and efficient processes in the organization. The use of project management tools is covered for purposes of effectively managing organizational change. Prerequisite: Graduate Standing.

ME 5708 Rapid Product Design and Optimization

Product Life cycle design; Finding design solutions using optimization technique; Rapid product realization using rapid prototyping and virtual prototyping techniques. Prerequisite: ME 208.

Core Course:

ERP 5310 Supply Chain Management Systems in ERP Environment

The course studies the need for supply chain integration and the challenges of managing complex interfaces using the systems approach for the planning, analysis, design, development, and evaluation of supply chain. SAP's ERP ECC, SCM, BW, and Sybase Unwired Platform are used to deploy SCM applications. Prerequisite: ERP 2110 or ERP 5110 (ERP 5110 may be taken concurrently). Offered on-campus and via distance delivery.

Second Level Elective Courses:

ERP 5110 Enterprise Resource Planning Systems (ERP) Design and Implementation

This course provides a technical overview of Enterprise Resource Planning Systems and their impact on organizations. SAP's ERP system is introduced to illustrate the concepts, fundamentals, framework, general information technology context, the technological infrastructure, and integration of business enterprise-wide applications. Prerequisites: IST 1750 or graduate standing. Offered on-campus and distance delivery.

ERP 5410 Use of Business Intelligence

This course introduces data-oriented techniques for business intelligence. Topics include Business Intelligence Architecture, Business Analytics, and Enterprise Reporting. SAP Business Information Warehouse, Business Objects, or similar tools will be used to access and present data, generate reports, and perform analysis. Prerequisite: ERP 2110 or preceded or accompanied by ERP 5110.

ERP 5610 Advanced Customer Relationship Management in ERP Environment

Identification (targeting), acquisition, retention, and development (expansion) of (profitable) customers. Effective and efficient management of customers using IT. SAP CRM and SAS BI tools used to enhance student education with real world applications. Research paper and presentation required. Prerequisite: ERP 2110 or preceded or accompanied by ERP 5110.

ERP 6120 Enterprise Resource Planning: Systems Config and Integration

Implementation and design practices for business processes in Enterprise Resource Planning (ERP) systems. The course will examine and apply techniques used in SAP ERP system for system configuration and integration, with a focus on Financial Accounting, logistics, Controlling, and production. Prerequisite: ERP 5110.

ME 5757 Integrated Product and Process Design

Emphasize design policies of concurrent engineering and teamwork, and documenting of design process knowledge. Integration of various product realization activities covering important aspects of a product life cycle such as "customer" needs analysis, concept generation, concept selection, product modeling, process development, DFX strategies, and end-of-product life options. Prerequisite: ME 3653

ME 356 Design For Manufacture

Course covers the approach of concurrent product and process design. Topics includes: principle of DFM, New product design process, process capabilities and limitations, Taguchi method, tolerancing and system design, design for assembly and AI techniques for DFM. Prerequisites: ME 3708, ME 3653.

ME 5760 Probabilistic Engineering Design

The course deals with uncertainties in engineering analysis and design at three levels – uncertainty modeling, uncertainty analysis, and design under uncertainty. It covers physics-based reliability analysis and reliability-based design, robustness assessment and robust design, their integration with design simulations, and their engineering applications. Prerequisite: Mech Eng 3708 or Aero Eng 3361. (Co-listed with Aero Eng 5760)

ME 5763 Principles and Practice Of Computer Aided Design (LEC 2.0 and LAB 1.0)

Fundamentals of computer-aided design including geometric modeling, CAD data exchange, graphics concepts, and finite element analysis. Projects include basic graphics, matrix algebra, automated drafting, freeform curve and surface modeling, solid modeling, assembly modeling, and finite element modeling, using educational and commercial software packages including Unigraphics and Matlab. Prerequisites: Cmp Sc 1970, 1980, Mech Eng 3411, 3708.