



Course Number and Title: LOM 270 Logistics and Operations Process Design

Campus Location:

Georgetown, Wilmington

Effective Date:

2018-51

Prerequisite:

LOM 210, LOM 230, LOM 241

Co-Requisites:

None

Course Credits and Hours:

4.00 credits

3.00 lecture hours/week

2.00 lab hours/week

Course Description:

This course emphasizes the application of tools for characterizing, analyzing and optimizing business processes in logistics and operations as a means to improve productivity, profitability, and customer fulfillment. Students learn how effective business process design can provide a competitive advantage to a business and its supply chain partners. The course culminates in a business process improvement capstone project where students apply the tools learned in the lab to a real business problem or opportunity.

Required Text(s):

Obtain current textbook information by viewing the [campus bookstore - https://www.dtcc.edu/bookstores](https://www.dtcc.edu/bookstores) online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:

None

Schedule Type:

Classroom Course

Disclaimer:

None

Core Course Performance Objectives (CCPOs):

1. Examine the impact efficient business process design has on logistics and operations. (CCC 1, 2; PGC 1, 6)
2. Apply business process design techniques for various theoretical settings. (CCC 1, 2, 3, 4, 6; PGC 1, 2, 4, 6)
3. Apply work flow and control techniques appropriate to theoretical process design requirements. (CCC 1, 2, 3, 4, 6; PGC 1, 2, 4, 6)
4. Apply queuing theory appropriate to process design requirements. (CCC 1, 2, 3, 4; PGC 1, 3, 4, 6)
5. Apply business process flowcharting and discrete event simulation techniques appropriate to theoretical process design requirements. (CCC 1, 2, 3, 4, 6; PGC 1, 2, 4, 6)
6. Define an existing business process, and develop a proposed process improvement for a logistics, manufacturing, or service business client using industry-based standard tools such as flowcharting, workplace layout, and simulation. (CCC 1, 2, 3, 6; PGC 1, 3, 5)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):

Upon completion of this course, the student will:

1. Examine the impact efficient business process design has on logistics and operations.
 1. Define the elements of a business process.
 2. Differentiate among value-adding, business-value adding, and non-value-adding activities in a business process.
 3. Explain the role of organizational structure in the creation of business processes.
 4. Differentiate between business process improvement and business process re-engineering.
 5. Identify inefficient business processes, and explain how they are created.
2. Apply business process design techniques for various theoretical settings.
 1. Write a case for action and a vision statement for an organization considering process redesign or re-engineering.
 2. Create a flowchart for a manufacturing or service process.
 3. Create a service system map (SSM) for service process, and identify customer interaction points in the map.
 4. Apply Six Sigma to process improvement scenarios.
3. Apply work flow and control techniques appropriate to theoretical process design requirements.
 1. Differentiate between divergent and convergent process flows.
 2. Describe the basic elements of cycle time analysis.
 3. Differentiate among rework, multiple path, and parallel activities.
 4. Perform cycle time analysis for a business process.
 5. Assign and balance resources to a business process.
 6. Identify and resolve bottlenecks in a business process.
 7. Describe the basic elements in theory of constraints (TOC).
4. Apply queuing theory appropriate to process design requirements.
 1. Describe Markovian (birth-death) processes, and define the elements of a queuing system.
 2. Explain the economic tradeoff curve between service capacity and waiting times (cost of service versus cost of waiting).
 3. Discuss strategies businesses use to mitigate the effects of long queues.
 4. Use Excel OM3 to calculate average queue lengths, wait times, and server utilization for single and multi-server queues.
5. Apply business process flowcharting and discrete event simulation techniques appropriate to theoretical process design requirements.
 1. Create a flowchart from a narrative description of a discrete event business process.
 2. Use Extend software to create and run a simulation model of a discrete event business process.
 3. Investigate the impact of queue length, wait times, and utilization by adding graphic and tabular data blocks to the simulation.
 4. Propose an improvement to the simulated business process, and validate the proposed improvement by modifying and running the original model simulation to obtain data verifying the improvement.
6. Define an existing business process, and develop a proposed process improvement for a logistics, manufacturing, or service business client using industry-based standard tools such as flowcharting, workplace layout, and simulation.
 1. Identify a local business to improve the business process.
 2. Write a Six Sigma charter for the project.
 3. Flowchart the existing business process.
 4. Apply one or more of the tools or techniques learned in the LOM curriculum to define, measure, and analyze the process.
 5. Formulate improvements to the process studied, and test them with simulation or other data tools as appropriate
 6. Prepare and present a comprehensive project report with project recommendations and a path forward for delivery to the client.

Evaluation Criteria/Policies:

Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	-	100	=	A
83	-	91	=	B
75	-	82	=	C
0	-	74	=	F

Students should refer to the [Student Handbook - https://www.dtcc.edu/handbook](https://www.dtcc.edu/handbook) for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):

1. Analyze logistics, supply chain, and operations processes in order to provide assistance in the development of quality, customer service, and cost improvement alternatives.
2. Utilize various statistical quality control techniques to aid in the development and utilization of global quality logistics, supply chain, manufacturing, and service applications.
3. Apply integrated technology-driven information necessary for logistics, supply chain and operations.
4. Perform cost analysis on proposed logistics, supply chain and operations projects and make data-driven investment recommendations to management.
5. Develop and optimize logistics and operations business processes, including job design and workplace layout.
6. Apply management functions, statistical quality and process applications, planning and scheduling techniques, and related software applications necessary for successful business decision making.
7. Apply managerial accounting, economics, human resources, and marketing principals when making workplace decisions.

Disabilities Support Statement:

The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the [disabilities services - https://www.dtcc.edu/disabilitysupport](https://www.dtcc.edu/disabilitysupport) web page or visit the campus Advising Center.