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## SCMG 489: Supply Chain Analytics Spring Quarter 2019

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**Professor:** Maciek A. Nowak **Office Phone:** (312) 915-7654  
**Email:** [mnowak4@luc.edu](mailto:mnowak4@luc.edu)  
**Office:** 421 Schreiber Hall

*I am generally always available by email. Please use my office phone when possible, but you may also call my cell phone if you can't get me any other way or need to reach me quickly.*

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**Class Hours:** T 6:00PM – 9:00PM  
Schreiber Hall – Room 330

**Office Hours:** T 2:00PM – 5:00PM  
W 1:00PM – 4:00PM  
Or by appointment.

**Course Description:** A study of the design, development, and use of decision models for analysis of supply chain problems. This course provides an example-driven approach to learn about important supply chain models, problems, and solution methodologies.

**Course Overview:** Develop an understanding of the issues involved in the use of decision support tools for analysis of supply chain problems. Modeling techniques are applied to a wide range of topics including facility location and network design, aggregate planning and resource allocation decisions, the integration of supply chain and demand management (benefits and costs of delayed differentiation, mass customizations), estimation of product and customer costs to determine total landed cost, and transportation analysis. Cases from business and current issues are discussed.

**Course Objective:** The objectives of this course are to develop valuable modeling skills that students can appreciate and use effectively, as well as reinforce their understanding of supply chain theories, principles, and concepts studied previously in foundation courses.

**Course Materials:** Textbook (All Optional):  
Samuel H. Huang, *Supply Chain Management for Engineers*, CRC Press, 1<sup>st</sup> Edition.  
(Paperback - \$78)

Mike Watson, Sara Lewis, Peter Cacioppi, Jay Jayarman, *Supply Chain Network Design: Applying Optimization and Analytics to the Global Supply Chain*, FT Press, 1<sup>st</sup> Edition. (Paperback - \$35, Kindle - \$9)

Kelton, Smith and Sturrock, *Simio and Simulation: Modeling, Analysis, Applications*, e-book: <http://simio.contentshelf.com/product?product=1131124000023C4>, hard copy: <http://www.amazon.com/dp/149361620X>. (\$29)

**Web Page:**

The course will utilize the Sakai system, which can be accessed at <https://sakai.luc.edu/>

Email will be the primary means of my contacting you outside of class. Please make sure that Sakai contains your current email address and that you check your email periodically.

*Sakai will also be used as a repository for materials used in class and for posting homework assignments. Please be sure to check the Sakai web site regularly.*

**Attendance:**

Class attendance and participation are fundamental components of learning, so punctual attendance at all classes, for the full class meeting period, is expected of Quinlan students. Faculty may set participation policies unique to their courses and use class participation as a component of the final grade. The student is responsible for any assignments or requirements missed during an absence.

You are expected to come to class fully prepared and willing to participate in class discussions. Prepared means that you have read the assignments, familiarized yourself with the presented theory from the previous class, given thought to the problems presented in the readings, considered how these problems could be addressed using applications of the theory presented in this class, and completed any assigned write-ups or problems. Your willingness and ability to contribute to class discussion and ask meaningful questions will be included in your class participation grade.

Attendance will be taken and is part of your participation grade. Keep in mind that missing a class is equivalent to dropping your grade by more than 0.5%. One excused absence will be allowed in the quarter. Notify the professor of this absence in advance of the class. Leaving class early on a regular basis will be noted and accounted for in your participation grade.

**Course Method:**

This class will be a mix of lectures and in class coursework. Problem solving methods will be heavily emphasized and active discussion is expected.

Assignments

Assignments in this course generally include the opportunity, and expectation, for quantitative analysis and a problem solving methodology. Your assignment write-ups should be carefully thought out and your recommendations/conclusions should be supported by analysis. Additionally, you will be graded on the clarity of your work and overall presentation. All assignments will be completed individually unless otherwise indicated. There will be four assignments in this course and your grade will be based on the top three scores. One copy (preferably in Word, PDF, or file format corresponding to the software) of each assignment should be emailed to the professor at [mnowak4@luc.edu](mailto:mnowak4@luc.edu) and another submitted online via Sakai. The template available on Sakai may be used in preparing the assignment, but this is not required. These problems are open ended!

### Final Project

The final project will involve applying the various techniques developed in class on a real world analysis. This project will involve a full report and a presentation of your key results. The project is to be completed in groups of 4 students. You may either form this group on your own, or contact me and I will place you in a group. All groups must be determined by the second week of class (March 13).

The report should be a professional and formal document, including attachments containing important graphs and tables relating to your results. The decisions that your group has made, the actions that you recommend to be taken, adjustments to strategy, goals, etc. and projections for future performance with and without your recommended actions all should be discussed in the report.

The report should also contain the following discussions:

- Describe and analyze recommended strategies, tactics and performance,
- Analyze the decision making processes of your team,
- Identify the most successful parts of your supply chain management strategy and tactics,
- Identify the one thing you would change if you were going to participate in the project again and explain your reasoning,
- Describe any limitations of your learning experience as it related to the course (including information or software that would have been beneficial to your analysis).

<b>Grading Policy:</b>	Assignments	45%
	Final Project	45%
	Class Participation	10%

Unless otherwise announced, the following grading scale will apply to this course (rounding to the first decimal place):

A	93% and higher
A-	90-92%
B+	88-89%
B	83-87%
B-	80-82%
C+	78-79%
C	73-77%

**Academic Integrity:** All members of the Quinlan School shall refrain from academic dishonesty and misconduct in all forms, including plagiarism, cheating, misrepresentation, fabrication, and falsehood...Plagiarism or cheating on the part of the student in individual or group academic work or in examination behavior will result minimally in the instructor assigning the grade of "F" for the assignment or examination. In addition, all instances of academic dishonesty must be reported to the chairperson of the department involved.

**You should write out and sign (electronically or by hand) the following statement on each assignment: "I have neither given nor received aid on this assignment nor have I concealed any violation of the honor code."**

For further information about expectations for academic integrity and sanctions for violations, consult the complete Quinlan School of Business Honor Code and Statement of Academic Integrity on the Quinlan website:  
<http://www.luc.edu/media/lucedu/quinlanschoolofbusiness/pdfs/Honor-Code-Quinlan-July2012.pdf>

**Special Needs Policy:**

If you have any special needs related to your participation in this course, including identified visual impairment, hearing impairment, physical impairment, communication disorder, and/or specific learning disability that may influence your performance in this course, please be sure to contact the Office of Services for Students with Disabilities. I am happy to work with you to accommodate any of these needs.

**Cell Phones:**

Out of respect for your fellow classmates, I ask that you please turn off (or put on vibrate) all cell phones and pagers while you are in class.

**Computer Use:**

During the lecture portion of this course, the computers in the lab should not be used. This use is distracting to the instructor and fellow students, and will not be tolerated. You may write notes on the computer, but keep in mind that using a computer during class is equivalent to a raised hand.

## Tentative Schedule

<b>Class</b>	<b>Date</b>	<b>Topic</b>	<b>Textbook</b>	<b>Software</b>	<b>Assignment Due</b>
<b>1</b>	26-Feb	Syllabus, Analytics Intro - Total Landed Cost	SCME - Chapter 1	Microsoft Excel	
	5-Mar	Spring Break			
<b>2</b>	12-Mar	Project Introduction/Network Design Intro	SaS - Chapters 1,3,4	LogicNet	
<b>3</b>	19-Mar	Network Design	SaS - Chapters 5,6,7	LogicNet	Total Landed Cost Analysis
<b>4</b>	26-Mar	Network Design		LogicNet	
<b>5</b>	2-Apr	Information Visualization	SCME - Chapter 3	Tableau	
<b>6</b>	9-Apr	Simulation	SCME - Chapter 3	Simio	Network Design Assgn.
<b>7</b>	16-Apr	Simulation	SCME - Chapter 5, SCND - Chapters 1,2,3	Simio	Tableau Assignment
<b>8</b>	23-Apr	Simulation/Project Update Meetings	SCND - Chapters 4,5,6	Simio	
<b>9</b>	30-Apr	Simulation	SCND - Chapters 7,8,9	Simio	
<b>10</b>	7-May	Final Project Presentations			Simulation Assgn./Final Report