University of North Texas
G. Brint Ryan College of Business
Marketing, Logistics, and Operations Management
LSCM 5860
Advanced Supply Chain Management Problems

1 Welcome

Welcome to LSCM 5860, Advanced Supply Chain Management Problems. This graduate-level course is relatively challenging as it blends foundational logistics and supply chain management concepts with analytical problem-solving techniques.

As a way of an introduction, here is a "brief" biographical sketch of me.

> *Dr. David Nowicki is a Professor at the University of North Texas (UNT) and the Director of its G. Brint Ryan College of Business' Center for Logistics and Supply Chain. He holds a joint appointment in the G. Brint Ryan College of Business' Department of Marketing, Logistics, and Operations Management and the College of Engineering's Department of Mechanical Engineering. Dr. Nowicki received his Master's degree in Industrial and Systems Engineering from Virginia Tech and his bachelor's and a doctorate in Industrial and Systems Engineering from the University of Wisconsin – Madison.*
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> *Dr. Nowicki's research focuses on applying advanced analytical techniques to solve supply chain management problems in a systems engineering context. Professor Nowicki's research is concentrated on performance-based logistics modeling, supply chain management, resiliency and risk, econometrics, game theory, multi-resource optimization, reliability theory, and inventory optimization. Dr. Nowicki brings over 20 years of industry experience holding executive positions at i2 Technologies and the TFD Group, focusing on supply chain management, systems engineering, lifecycle affordability, operations research modeling, reliability, inventory optimizations, and software engineering.*

Please make sure that you do not fall behind. There is a great deal of content in this course and you will find it difficult to catch up once you fall behind.

Let us have a wonderful learning experience!

All the best,

Dr. David Nowicki

2 Instructor Contact

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3 Course Description

Decision-making tools and skills as they apply to logistics and supply chain management. The course stresses developing skills to analyze technical problems and their interrelationships within a company and across a supply chain.

4 Pre-requisites

LSCM 5830 Logistics
OPSM 5840 Strategic Supply Management
OPSM 5850 Operations Management

5 Overall Course Objectives*

By the end of this course, students will be able to:

- Understanding the techniques available for modeling logistics and supply chain systems;
- Analyzing logistics and supply chain systems by using several operations research techniques;
- Designing a supply chain network that achieves customer service or cost objectives;
- Forecasting and determining inventory requirements for dependent and independent inventory systems and across multiple echelons of supply; and
- Simulating and optimizing network processes commonly encountered in logistics and supply chain management.

***** *For each Module (Week) in Canvas, there is a Page that provides an overview, learning objectives, and summary of the learning objectives for each topic covered in that Module.*

6 Required Text

Chopra, Sunil and Peter Meindl (2016), *Supply Chain Management*, **6th Edition**, Upper Saddle River, NJ: Pearson Prentice Hall.
ISBN-13: 978-0-13-380020-3
ISBN-10: 0-13-380020-2

Note: make sure you have the **6th Edition**.

7 Course Material

7.1 Recommended Homework Assignments

Each module has several "recommended" homework problems (see Section 10, Calendar). Answers to the problems are available to you in Canvas. I strongly encourage you to perform the recommended homework assignments. The recommended homework assignments will not be turned in or graded. These assignments include discussion questions and quantitative Excel exercises, and you can expect similar problems to appear on the exams. You must work on these discussion questions and quantitative problems, as the exams will reflect these problems.

8 Course Requirements

Below is a list of all graded activities for the course, the points possible, and the percentage contribution to your final grade.

Graded Activity	Points Possible	Percentage of Final Grade
Exam 1	100 points	25%
Exam 2	100 points	25%
Exam 3	100 points	25%
Project Report	100 points	25%

Your final grade is determined based on your performance in Exam 1, Exam 2, Exam 3, and the Project Report. You can submit a Project Report by yourself or with a group no larger than three people. The topic and teams must be approved before the reports are submitted. I will work with you to scope the project and provide guidance on its structure and content.

9 Grading

The grading scale is guaranteed. You will receive no less than the grade listed within the appropriate interval. I reserve the right to adjust the grading scale in favor of the class if warranted. The points assigned to each grade comply with the points identified in the UNT Graduate Catalog.

Grade	Numeric Range	Grade Points
A	90 to 100	4.0
B	80 to 90	3.0
C	70 to 80	2.0
D	60 to 70	1.0
F	Below 60	0.0

Your **top three scores from the four graded activities** (the three exams and the project report) will be used to calculate your final grade. You can submit your Project Report after we agree upon its content, structure, and group members (if any), at any time during the semester, and I will grade it within a week of submission.

10 Calendar

Note: I may revise this schedule to accommodate class progress, more in-depth focus or discussion where warranted. We will attempt to stay as close to this schedule as possible.

DQ (Discussion Question); EE (Excel Exercise)

Date	Topic Covered	Assignments
Wk1	Course Introduction Ch. 1 - Understanding the Supply Chain Ch. 2 - Supply Chain Performance	DQ: 1.1, 1.2, 1.5 DQ: 2.1, 2.5, 2.6
Wk2	Ch. 3 – Supply Chain Drivers and Metrics Ch. 5 - Network Design in the Supply Chain	DQ: 3.1, 3.5, 3.10 DQ: 5.2, 5.7 EE: 5.1, 5.7
Wk3	Ch. 5 - Network Design in the Supply Chain (cont.) Ch. 4 - Designing Distribution Networks and Applications to e-Business	DQ: 5.2, 5.7 DQ: 4.1, 4.5, 4.11 EE: 5.1, 5.7
Wk4	**Review and EXAM 1**	
Wk5	Ch. 7 - Demand Forecasting in a Supply Chain Ch. 8 - Aggregate Planning in a Supply Chain	DQ: 7.3, 7.9 DQ: 8.1, 8.9 EE: 7.2, 7.3 EE: 8.1, 8.3
Wk6	**Review and EXAM 2**	
Wk7	Ch. 11 - Managing Economies of Scale in a Supply Chain: Cycle Inventory Ch. 12 – Managing Economies of Scale in a Supply Chain: Safety Inventory	DQ: 11.1, 11.6 DQ: 12.1, 12.6 EE: 11.1, 11.20, 11.22 EE: 12.6, 12.7
Wk8	**Review and EXAM 3** **Project Reports Due**	**Project Reports Due** (can be submitted at any time during the semester)