



BUDT-758V Operations Analytics

Spring 2020, MS in Business Analytics

Robert H. Smith School of Business, University of Maryland

Instructor:	Professor Zhi-Long Chen	Class Dates:	Tue / Thur, 3/24 – 5/7
Office:	Rm 4321 Van Munching Hall	Class Time:	12:00 – 1:50pm
Phone:	301-213-0591 (cell)	Course Website:	http://elms.umd.edu
Email:	zchen@rhsmith.umd.edu	Office Hours:	To be announced in class

(NOTE: Please feel free to contact me at any time via email or telephone. I will make it a priority to return your email or phone call as soon as possible.)

Course Overview: Firms can create competitive advantage through the efficient management of their operations across the supply chain. To do so, they must find optimal or near-optimal solutions to the various operations and supply chain management decisions they face by applying analytical models and tools. This course offers various quantitative tools and techniques that firms can use for effectively and efficiently managing their operations, including supply chain network design, aggregate planning, inventory models, risk pooling, distribution planning, process flowcharting, analysis of process capacity and bottlenecks, and queuing analysis. These concepts and tools will be applied to both manufacturing and service operations problems.

Required Course Materials:

- **Course Pack:** There is a required course pack containing one case (National Cranberry), available at Harvard Business Publishing. Please purchase it at the following HBS access link: <https://hbsp.harvard.edu/import/707524>
- **Littlefield Simulation Game:** There is a required simulation game to be played in class. Each student needs to purchase an individual access code by April 17 at: <http://mgr.responsive.net/Manager/ShowClient>
Institution name is "University of Maryland". The product is titled "Littlefield Code for BUDT-758V". It costs \$18, payable by a credit card.
- **Lecture Notes:** Lecture notes will be posted on the course website. Check the course website periodically. Hard copies of the lecture notes **will not** be distributed in class. Some other course materials may be distributed in class whenever necessary.

Recommended (Not Required) Textbooks:

- Cachon, G. and C. Terwiesch. *Matching Supply with Demand: an Introduction to Operations Management*, 4th Edition, McGraw-Hill Irwin, 2019. MHID# 0078096650; ISBN# 9780078096655.
- Simchi-Levi, D., P. Kaminsky and E. Simchi-Levi. *Designing and Managing the Supply Chain*, 3rd Edition, McGraw-Hill Irwin, 2008. ISBN # 007298239X.

Expectations for Each Class Meeting: You *are not required* to read the lecture slides before the class, although you are certainly welcome to, particularly if you need more time to absorb the material. However, when a case discussion is scheduled for a class, you *are required* to read the case and be fully prepared for class discussion before the class. You should review the lecture slides and other course material after each class, as it will improve your understanding of the material and help you do the associated homework.

Most class sessions are fast paced, so it is expected that you are *fully focused* during each class session. You are not allowed to use your laptop, iPad or other electronic devices unless (i) you use them to take notes, or (ii) the instructor allows you to use them to do certain things in some class sessions. *Your phones and other wireless devices should always be turned off in class.*

Required Work and Grading Policy:

- **Five Homework Assignments** — Four individual and one group. Due dates are listed on “planned course schedule” on the last page of this document.
 - **4 Individual Hwk (28%)**
 - (8%) Individual Hwk #1 Solving supply chain network design and aggregate planning problems.
 - (8%) Hwk #2 Solving inventory problems.
 - (8%) Hwk #3 Solving process analysis problems and answering some questions about NCC case.
 - (4%) Hwk #4 Solving queuing problems.
 - **1 Group Hwk (16%)** – Play the Littlefield simulation game in class.
 - **No Late Work Will Be Accepted.** However, necessary extensions will be given to students who have *legitimate* excuses (see university policies to know what circumstances are regarded as legitimate excuses). In such a case, the instructor needs to be informed soon after the homework is assigned & at least one week before the due date.
- **Midterm Exam (25%), April 14** -- closed book, closed notes, allows a cheat sheet / covers Topics 1, 2, 3, 4, 5, 6.
- **Final Exam (25%), May 14** — closed-book, closed notes, allows a cheat sheet / covers Topics 7, 8, 9, the NCC case and the Littlefield simulation game.
- **Class Attendance and Participation (6%)**
 - *This course is quantitative and fast paced. It is crucial to attend every class and participate as much as you can during class discussions.*
 - 3% for attendance – It is *expected* that each student attend each class session, and be on time. Any disruptions caused by late arrival, early departure, cell phone, etc., will be penalized through the participation grade. The penalty for class absence is not applied linearly. **If a student misses 4 or more classes for reasons that cannot be categorized as legitimate excuses by university policy, the student will receive a fail grade** regardless of how the student performs in homework assignments and exams. If a student misses 1, 2, or 3 classes due to circumstances that are not legitimate excuses, the student will receive 80%, 50% and 0% of the attendance grade.
 - 3% for class participation - answering questions, participating in discussions, sharing personal experience, etc. will all be counted as class participation.

- **Grading Policy** — For final letter grade, the top 60% or so of the class will receive A+/A/A-. Most remaining students will receive B+/B/B-. Grades lower than B- will only be assigned on a case-by-case basis.

Academic Integrity:

The Robert H. Smith School of Business recognizes honesty and integrity as necessary cornerstones to the pursuit of excellence in academic and professional activities. The University's *Code of Academic Integrity* is designed to ensure that the principles of academic honesty and integrity are upheld. All students are expected to adhere to this Code. The Smith School does not tolerate academic dishonesty. All acts of academic dishonesty will be dealt with in accordance with the provisions of this code. Please visit the following website for more information on the University's Code of Academic Integrity:

<http://www.president.umd.edu/sites/president.umd.edu/files/documents/policies/III-100A.pdf>

Smith School also has a website: <http://www.rhsmith.umd.edu/about-us/academic-integrity> which provides detailed information about academic integrity.

Special Needs:

Any student with special needs should bring this to the attention of the instructor as soon as possible, but not later than the second week of class.



Planned Course Schedule

Class	Date	Topics	Hwk Assigned	Hwk Due
1	Mar. 24	<ul style="list-style-type: none"> • <i>Course overview</i> • Topic 1: Introduction 	Ind. hwk #1 assigned	
2	Mar. 26	<ul style="list-style-type: none"> • Topic 2: Supply Chain Network Design 		
3	Mar. 31	<ul style="list-style-type: none"> • Topic 3: Aggregate Planning 		
4	Apr. 2	<ul style="list-style-type: none"> • Topic 4: EOQ Inventory Model 	Ind. hwk #2 assigned	Ind. hwk #1 due
5	Apr. 7	<ul style="list-style-type: none"> • Topic 5: (Q, R) Inventory Model 		
6	Apr. 9	<ul style="list-style-type: none"> • Topic 6: Distribution Planning 		Ind. hwk #2 due
7	<u>Apr. 14</u>	<ul style="list-style-type: none"> • Midterm Exam - covering Topics 1, 2, 3, 4, 5, 6 		
8	Apr. 16	<ul style="list-style-type: none"> • Topic 7: Process and Bottleneck Analysis 	Ind. hwk #3 assigned	
9	Apr. 21			
10	Apr. 23	<ul style="list-style-type: none"> • Topic 8: Batching Analysis 	Group hwk assigned	
11	Apr. 28	<ul style="list-style-type: none"> • Case Discussion: National Cranberry 		Ind. hwk #3 due
12	Apr. 30	<ul style="list-style-type: none"> • Topic 9: Queuing Analysis 	Ind. hwk #4 assigned	
13	May 5	<ul style="list-style-type: none"> • Q&A Littlefield simulation game • Review for final exam 		Ind. hwk #4 due
14	May 7	<ul style="list-style-type: none"> • Play Littlefield simulation game in class 		
Final Exam	<u>May 14</u>	<ul style="list-style-type: none"> • Final Exam – covering Topics 7, 8, 9 10:30am – 12:30pm, VMH 1511 		