

EIN 4343 INVENTORY & SUPPLY CHAIN SYSTEMS
Fall 2007

Instructor. Alex Grasas, Office: Weil 413, Email: agrasas@ufl.edu
Office Hours: T 5 (11:45 – 12:35) - W 4 (10:40–11:30)

Class Meetings. CHE 0237, T 4, R 3–4.

Teaching Assistant. Gonca Yildirim, Office: Weil 413, Email: gonca@ufl.edu
Office Hours: M 5 (11:45 – 12:35) - W 9 (4:05–4:55)

Course website. <http://www.ise.ufl.edu/ein4343>

Course Catalogue Description. Demand forecasting. Deterministic and stochastic inventory models for single and multiple item systems. Analysis and design of logistics systems. Supply chain management and coordination.

Program Objectives Supported by This Course. This course develops student’s analytic abilities to formulate and solve inventory, and logistics problems faced by today’s firms. Students learn to take comprehensive view of complex inventory and supply chain systems. Additionally, students develop abilities to model, optimize, and design such systems.

Prerequisites and Co-requisites. ESI 4312 Operations Research I and STA 4321 Mathematical Statistics I *are* prerequisites. ESI 4313 Operations Research II is a co-requisite that may be waived upon instructor’s approval.

Required Text. S. Nahmias, *Production and Operations Analysis* (5th Ed.), McGraw-Hill, Irwin, 2004.

Students with Disabilities. Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

Counseling Services. Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:

- University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
- SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
- Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
- Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling.

Software Use. All faculty, staff and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Academic Dishonesty. All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a University of Florida student and to be honest in all work submitted and exams taken in this course and all others.

If you conduct any dishonest act (including cheating on an exam, bringing in extra material that you are not allowed to use during the exams, copying someone else's homework, and using the solutions from previous years), you will get a credit of 0 on that particular assignment or exam.

Assignments, Exams, and Class Procedures.

1. Students will be assigned 7 homework assignments. Lowest homework grade will not be included in determining your final homework grade. All homework assignments are due at the beginning of class. Only hard copies will be accepted. *No* late homework assignments will be accepted and you will get a credit of 0 in case you do not submit the homework on time. Homework policy is non-negotiable.
2. Discussion of homework assignments among students aids learning and is encouraged. However, each student is expected to submit his/her individual work. Should some submitted home work assignments be identical or suspected to be identical, all involved parties will get a grade of 0 on the particular homework assignment.
3. There will be three written exams:

Midterm Exam 1 on October 11, 2007 from 9:35am until 11:30am

Midterm Exam 2 on November 15, 2007 from 9:35am until 11:30am

Final Exam on December 13, 2007 from 3:00pm until 5:00pm

The exams are scheduled in advance, please plan accordingly. Make-up tests will be given for unanticipated absences *ONLY* (e.g., illness with a doctor's report, death in family). You will not be allowed to use programmable/graphical calculators during the exams. You will be allowed to use formula sheets provided with the exam, which will be made available to you in advance. Exam policy is non-negotiable.

4. You are responsible for all announcements made in class.
5. You are responsible for printing the assignments, reading material, and lecture notes from the class web page located at <http://www.ise.ufl.edu/ein4343/>. After the first week of classes, paper copies of the assignments, the reading material, and the lecture notes will *not be distributed* in class.

6. Requests for regrading of assignments and exams will be considered only within a *one-week period* from the time graded work is returned in class. Grades will be posted on the web. Throughout the semester, you have to ensure that they are entered correctly. Corrections will be considered only within a *one-week period* after the grades have been posted on the web.
7. Please remember to turn off cell phones and pagers before you come to class. Also, you are not allowed to turn on your laptop computer.

Grading. Your final grade for the class will be calculated as follows: Homework Assignments %20, Midterm Exam I 25%, Midterm Exam II 25%, and Final Exam 30%. Final grade averages will be rounded off to the nearest one-tenth point, and assigned on the following scale: 90.0 and above A; 85.0 to 89.9 B+; 80.0 to 84.9 B; 75.0 to 79.9 C+; 70.0 to 74.9 C; 65.0 to 69.9 D+; 60.0 to 64.9 D; and Below 60.0 E.

Detailed Course Outline. This is a tentative outline and the instructor reserves the right to make changes as he sees necessary.

Session	Topic	Reading	HW
Aug 23	Course Introduction Inventory and Supply Chain Systems		
Aug 28	Forecasting: Introduction	2.1–2.6	
Aug 30	Forecasting Stationary Series: Moving Average and Exponential Smoothing	2.7	
Sep 4	Forecasting Trend Series: Double Exponential Smoothing and Regression Analysis	2.8	
Sep 6	Forecasting Seasonal Series: Moving Average and Winter’s Method	2.9	HW#1
Sep 11	Inventory Management: Role of Inventory and Related Decisions	4.1–4.4	
Sep 13	Inventory Management: Inventory Classification: ABC Analysis Constant Deterministic Demand: EOQ Model	5.7 4.5	HW#1 due
Sep 18	Inventory Management: EOQ with Positive Lead Time, Backorders	4.5	
Sep 20	Inventory Management: EOQ with Quantity Discounts and Finite Production Rate	4.6–4.7	HW#2
Sep 25	Inventory Management: EOQ with Constraints	4.8 App. 4–A	
Sep 27	Inventory Management: Dynamic Deterministic Demand and Heuristics	App. 7–A 7.2–7.3	HW#3 HW#2 due
Oct 2	Inventory Management: Stochastic Demand: Single-Period Newsvendor Model	5.1–5.3 App. 5–A	
Oct 4	Inventory Management: Stochastic Demand: Single-period Newsvendor Model	5.1–5.3 App. 5–A	HW#3 due
Oct 9	Inventory Management: Multi-Period Model with Lost Sales, and Backorders	App. 5–B	

Session	Topic	Reading	HW
Oct 11	Midterm #1	MT#1	HW#4
Oct 16	Inventory Management: Continuous Review Models	5.4 App. 5-C	
Oct 18	Inventory Management: Continuous Review Models	5.4 App. 5-C	HW#4 due
Oct 23	Inventory Management: Service Levels and Lead-time Variability	5.5	HW#5
Oct 25	Logistics Management: Definition, Modes, Costs and Rates		
Oct 30	Logistics Management: Transportation Service Selection		HW#5 due
Nov 1	Logistics Management: Consolidation		HW#6
Nov 6	Logistics Management: Vehicle Routing and Scheduling		
Nov 8	Logistics Management: Single Vehicle Models		HW#6 due
Nov 13	Logistics Management: Network Configuration		
Nov 15	Midterm #2	MT#2	
Nov 20	Supply Chain Management: Definition and Issues		HW#7
Nov 22	No class meeting (Thanksgiving)		
Nov 27	Supply Chain Management: Bullwhip Effect		
Nov 29	Supply Chain Management: Coordination		
Dec 4	Supply Chain Management: Applications		HW#7 due
Dec 13	Final Exam (13D) 3:00pm-5:00pm		