

EIN4343 INVENTORY & SUPPLY CHAIN SYSTEMS
Fall 2016

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

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

Relation to Program Educational Objectives (PEOs): This course contributes to the following PEOs:

1. Can become successful professionals in industrial and systems engineering or other disciplines
2. Can acquire advanced knowledge through continuing education or advanced degree programs

Relation to ABET Student Outcomes: This course contributes to the following ABET Student Outcomes:

- a. Apply knowledge of mathematics, science, and engineering
- b. Design and conduct experiments, as well as analyze and interpret data
- c. Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- e. Identify, formulate and solve engineering problems
- h. Understand the impact of engineering solutions in a global, economic, environmental and societal context
- i. Recognize the need for, and have an ability to engage in life-long learning
- j. Know contemporary issues
- k. Use the techniques, skills, and modern engineering tools necessary for engineering practice

Instructor. Prof. Elif Akçali. Office: Weil Hall 302. Email: akcali@ufl.edu. Office Hours: TBD.

Teaching Assistant. TBA.

Classroom Meetings. T 2 (FLG 280) and T 2-3 (FLG 260).

Class Policies. Throughout the semester, following policies will be followed:

- **Flipped Class.** Students will be asked to study the derivations of the analytical tools on their own using lecture notes prior to coming to a classroom meeting. Classroom meetings will be used to (i) assess student self-study skills; (ii) highlight distinguishing features of the tools; (iii) work through example problems to enhance student learning; and (iv) discuss issues related to the use of these tools for analysis in practice.
- **Exam Policy.** To assess student learning, students will be given three Term Exams (around Weeks 5, 9 and 14 of the semester) and a comprehensive Final Exam (on December 15, 2016). *Due to the size of the class, evening exams will be given. Evening exam times have been requested and the information will be relayed to students as soon as they become available.* Formula sheets that can be used during the exams will be provided by the instructor. These formula sheets will be posted on the course web-site in advance. Prior to each exam a study guide will also be provided by the instructor that lists the topics that will be covered in the exam. The exams are scheduled in advance, please plan accordingly. Make-up tests will be given for unanticipated absences ONLY (e.g., illness/death in family with appropriate documentation, but NOT for job interviews). Exam Policy is non-negotiable.
- **Regrade Requests.** Requests for regrading of exams will be considered only with a written explanation and only within a one-week period from the time graded work is returned in class. Specifically, you need to prepare a typed up or legibly written memo explaining why you believe your work needs to be regraded, attach make it the cover sheet of the exam booklet, and return it to the instructor or the TA. Grades will be posted on the course page on Canvas. Throughout the semester, you have to ensure that your grades are entered correctly. Corrections will be considered only within a one-week period after the grades have been posted on Canvas.

- **Announcements and Course Materials.** You are responsible for all announcements made in class as well as some additional material that might be covered. You are responsible for printing the lecture notes posted on Canvas. Paper copies of the lecture notes will not be distributed in class. You will not be allowed to use tablets to take notes.
- **One-on-One Meetings.** You will be required to schedule a one-on-one meetings with Dr. Akcali. All of these meetings need to be completed by October 31st, 2016. If you schedule a meeting and miss it, you will get a credit of zero toward a 1-point bonus on your final grade average.
- **Creative Writing Component.** To allow students to connect seemingly two disparate areas, creative writing and engineering in this semester, the students will be given a number of creative writing assignments throughout the semester.
 1. *Individual Assignment.* Write an “I am” poem about yourself due on August 30, 2016 (Week 2 of the semester).
 2. *Group Assignment.* Write an “I am” poem in groups of two on a topic related to the class due on November 29, 2016 (Week 15 of the semester). For this assignment, you may change the verbs also as you see fit.
 - I am (two special characteristics)
 - I wonder (something you are actually curious about)
 - I hear (an imaginary sound)
 - I see (an imaginary sight)
 - I want (an actual desire)
 - I am (the first line of the poem restated)
 - I pretend (something you pretend to do)
 - I feel (a feeling about something imaginary)
 - I touch (an imaginary touch)
 - I worry (something that really bothers you)
 - I cry (something that makes you very sad)
 - I am (the first line of the poem repeated)
 - I understand (something you know is true)
 - I say (something you believe in)
 - I dream (something you actually dream about)
 - I try (something you make an effort to do)
 - I hope (something you actually hope for)
 - I am (the first line of the poem repeated)
- **Professional Conduct.** Please remember to turn off cellular telephones before you come to class. You will not be allowed to check e-mail, send text messages, and/or play game. You will not be allowed to use computers or tablets in this class to take notes. Please come to class in time. Late arrivals as well as walking out and in during the lectures disrupt the flow of the class.

Grading. Your final grade for the class will be calculated as follows: Term Exam 1 21%, Term Exam 2 21%, Term Exam 3 21%, Final Exam 34%, Creative Writing 3% (1% Poem 1 and 2% Poem 2) and One-on-One Meetings 1%. Final grade averages will be rounded off to the nearest integer, and assigned on the standard scale as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
100-93	92-90	89-87	86-83	82-80	79-77	76-73	72-70	69-67	66-63	62-60	59-0

Course Outline. This is a tentative outline. The instructor reserves the right to make changes as she sees necessary.

Week	Date	Topic	Activity
1	8/23	Introduction: Syllabus and Motivation	
	8/25	Inventory Management: ABC Analysis	Poem 1

2	8/30	Inventory Management: Deterministic Models Economic Order Quantity (EOQ) Model	
	9/1	Inventory Management: Deterministic Models EOQ Extensions I	
3	9/6	Inventory Management: Deterministic Models EOQ Extensions II	
	9/8	Inventory Management: Deterministic Models EOQ Extensions III	
4	9/13	Inventory Management: Deterministic Models Wagner-Whitin Model and Heuristics	
	9/15	Inventory Management: Stochastic Models Periodic Review: Single-period model	
5	9/20	Inventory Management: Stochastic Models Periodic Review: Multi-period with Backlogging	
	9/22	Inventory Management: Stochastic Models Periodic Review: Multi-period with Lost Sales	
6	9/27	CRC Showcase <i>No Class</i>	
	9/29	Inventory Management: Stochastic Models Continuous Review: Multi-period with Backlogging	
7	10/4	Inventory Management: Stochastic Models Continuous Review: Multi-period with Lost Sales	
	10/6	Inventory Management: Stochastic Models Continuous Review: Service Levels	
8	10/11	Logistics Management Preliminaries	
	10/13	Logistics Management Shipment Size Selection	
9	10/18	Logistics Management Shipment Mode Selection	
	10/20	Logistics Management Consolidation I	
10	10/25	Logistics Management Consolidation II	
	10/27	Supply Chain Management Definition and Fundamental Issues	
11	11/1	Supply Chain Management The Bullwhip Effect	
	11/3	Supply Chain Management Contemporary Issues: Disruptions, Omnichannels, etc.	
12	11/8	Supply Chain Management Retailer-Supplier Coordination	
	11/10	Supply Chain Management Contracting: Buy back	
13	11/15	Supply Chain Management Contracting: Revenue sharing	
	11/17	Supply Chain Management Contracting: Buy back	
14	11/22	Demand Forecasting Preliminaries and Methods for Stationary Series	
	11/24	Thanksgiving Holiday <i>No Class Meeting</i>	

15	11/29	Demand Forecasting Methods for Linear Trend Series	Poem 2
	12/1	Demand Forecasting Methods for Seasonal Series	
16	12/6	Demand Forecasting Practical Considerations	
	12/8	Reading Days <i>No Class Meeting</i>	
	12/15	Final Exam 15E: 7:30 – 9:30pm	

Honor Code. 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 during an exam (e.g., cheating or using any extra material that you are not allowed to use), you will get a credit of 0 on that particular exam and your final grade for the class will be reduced by a full letter grade. If you have access to any old exam/homework/quiz material that the instructor has not made explicitly available to the entire class, it is your responsibility to disclose the material to the instructor. You will get a credit of 0 on the particular exam for which you have not disclosed the material to the instructor and your final grade for the class will be reduced by a full letter grade. Your conduct will also be reported to the Dean of Students and appropriate action will be taken as dictated by the rules of the university.

Accommodation for 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.

UF 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.