

**ISyE 6203**  
**Transportation and Supply Chain Systems**  
**Spring 2013**  
**Administrative Info**

**Instructor:** Anton J. Kleywegt  
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**Class Room:** IC105  
**Class Times:** Tuesday and Thursday 1:35pm–2:55pm

**Description:**

Logistics systems, with emphasis on supply chain and transportation systems, including

- the information systems that support transportation and supply chain systems;
- the interactions and trade-offs between these activities;
- models and techniques for the analysis of logistics systems and the development of decision support systems;
- the activities of transportation and supply chain systems, such as transportation network design, scheduling, routing, contracting, and pricing.

**Objectives:**

- to develop a familiarity with logistics concepts, especially transportation and supply chain concepts;
- to understand the important issues in logistics system design and operation;

- to develop the ability to formulate models of systems and to analyze results obtained with such models;
- to develop skills in applying a variety of techniques to solve logistics problems.

**Prerequisites:**

Optimization at the level of ISyE6669. Probability models at the level of ISyE6650. You must know how to use some basic software, including a spreadsheet, a database, and an optimization solver.

**Textbook:**

- Ghiani, G., Laporte, G., and Musmanno, R., *Introduction to Logistics Systems Planning and Control*, Wiley, 2004.
- Goetschalckx, M., *Supply Chain Engineering*, 2011.

**References:**

- Ballou, Ronald H., *Business Logistics Management*, 4th edition, Prentice Hall, Englewood Cliffs, NJ, 1998.
- Ballou, Ronald H., *Basic Business Logistics*, 2nd edition, Prentice Hall, Englewood Cliffs, NJ, 1987.
- Blanchard, Benjamin S., *Logistics Engineering and Management*, 4th edition, Prentice Hall, 1992.
- Bramel, J. and Simchi-Levi, D., *The Logic of Logistics*, Springer, New York, NY, 1997.
- Coyle, John J., Bardi, Edward J., and Langley, C. John, *The Management of Business Logistics*, 5th edition, West Publishing Company, St. Paul, MN, 1992.
- Daganzo, C. F., *Logistics Systems Analysis*, Springer-Verlag, Heidelberg, Germany, 1999.
- Graves, Stephen C., Rinnooy Kan, Alexander H.G., and Zipkin, Paul H., *Logistics of Production and Inventory*, North-Holland, 1993.
- Magee, John F., Copacino, William C., and Rosenfield, Donald B., *Modern Logistics Management*, Wiley, New York, NY, 1985.
- Narasimhan, Seetharama L., McLeavey, Dennis W., and Billington, Peter J., *Production Planning and Inventory Control*, 2nd. edition, Prentice Hall, 1995.
- Robeson, James F., Copacino, William C., and Howe, R. Edwin, *The Logistics Handbook*, Maxwell MacMillan, 1994.
- Tersine, Richard J., *Principles of Inventory and Materials Management*, 3rd edition, North-Holland, 1988.

- Vollmann, Thomas E., Berry, William L., and Whybark, D. Clay, *Integrated Production and Inventory Management*, Business One Irwin, 1993.

**Topics Covered:**

- Supply chain dynamics
- Estimation and Forecasting
- Transportation Modes
- Transportation Operations, Planning, and Scheduling
- Logistics System Design
- Pricing and Revenue Management

**Grading:**

Grades will be assigned as follows:

- Homework: 20%
- Case Study Preparation and Class Participation: 20%
- Midterm exam: 30%
- Final exam: 30%

**Homework:**

Homework will be assigned approximately once every two weeks. You should start working on each homework early, that way you will have time to ask (and understand) questions in class before the homework is due. Late homework will be accepted only in case of unavoidable occurrences, such as illness or death in the family. You are encouraged to discuss homework and learn from each other, but each person must submit his/her own work, unless the homework specifically indicates that you should work in groups. Any queries on homework grades must be submitted in writing to the instructor, together with the homework in question.

**Case Studies:**

Preparation is necessary for the case study discussions. Distance learning students must submit their case study preparation work before the case study discussions. On-campus students must attend class for the case study discussions, and grades will be assigned for participation in class. The instructor will attempt to give each person in class approximately the same opportunity to participate. At the end of the semester the participation grade for each student will be the average of the student's participation grades, thus a smaller number of such grades does not penalize the student. However, absence from class leads to a grade of 0 for the case study. Only unavoidable emergencies such as hospitalization of the student

or death in the family qualify as an excuse to miss a case study discussion. No excuses are given for absence from case study discussions and no opportunities are given for make-up work for job interviews, project meetings, athletics, or similar activities.

**Exams:**

Exams will cover material discussed in class, in the textbook, as well as reading assignments, and homework. The exams will be comprehensive and closed book. It is your responsibility to take the exams at the designated times. The midterm exam is scheduled for Thursday March 14, 2013, in class. Make-up exams will be scheduled only in case of unavoidable emergencies. Personal business, such as interviews and travel arrangements are not sufficient reason to warrant a make-up exam or an incomplete grade. All unexcused absences will result in an exam grade of zero. If you have a good reason (unavoidable emergency) for missing an exam, then bring the instructor a letter from the dean of students stating that the reason for missing the exam is legitimate and has been verified, and a make-up exam will be scheduled. If your documentation is fraudulent in any way, or if you falsify in any way your reasons for missing an exam, you will receive a grade of F in the course. Any queries on exam grades must be submitted in writing to the instructor, together with the exam in question. The final examination will be cumulative.

**Quiz and Exam Rules:**

- All exams and quizzes are closed-book and closed-notes.
- Unless you are explicitly told that a calculator is allowed on a quiz or exam, there should not be any calculator within your reach during a quiz or exam. If you are explicitly told that a calculator is allowed on a quiz or exam, then you may use a calculator that can only function as a calculator, and nothing else. No communication device, such as a mobile phone or device that facilitates access to the internet, may be within your reach during a quiz or an exam, not even if you use it as a calculator. In most quizzes and exams no calculator will be allowed.
- You may bring a wristwatch that can function as a watch and nothing else. You may not use any other electronic equipment (unless you are explicitly told that a calculator is allowed). In particular, no electronic equipment that allows you to communicate with others, either inside or outside the exam room, or make web queries, or store notes, may be within your reach during a quiz or an exam, not even if you use it to check the time.
- You will not be permitted to go to the restroom during a quiz or exam. No exceptions, so be sure to go before class. If you have a medical reason why this rule is a problem for you, then you have to arrange in advance with the dean of students to take the exam proctored by their personnel.
- Cheating on quizzes and exams will not be tolerated in this course. You may not:
  - Attempt to look at someone else's exam (even for a second).

- Copy from someone else's exam,
- Let someone else copy from your exam. (Cover your exam!)
- Bring or look at any information during the exam (e.g. on your person).
- Wear caps or headphones/earbuds of any kind.
- Use unacceptable electronic equipment.
- Undertake any other activity that can be construed as giving/receiving or attempting to give/receive help during the exam.

If you cheat, then you will receive an F in the course.

**Classroom Rules:**

- No mobile phone use in the class. That means no talking, texting, checking email, surfing the internet, or any other mobile phone use in the class.
- No newspaper reading in the class.
- You may bring your laptops to class. However, no checking email or surfing the internet during class unless you are explicitly allowed to do so.

**Academic Honor Code:**

All course participants (myself, teaching assistant, and students) are expected and required to abide by the Georgia Tech Honor Code. Please familiarize yourself with the code, and use it to guide your conduct. Specifically, you must do your own work in all homework (unless the homework is specifically designated as a group homework), quizzes and exams. Any form of academic dishonesty, such as plagiarism, can result in a serious deduction from your final grade or even a grade of F in the course.