# RUTGERS - THE STATE UNIVERSITY OF NEW JERSEY
## Rutgers Business School
### Supply Chain Management and Marketing Sciences Department
### 22:799:607:30
## Supply Chain Management Strategies

## Professor Yao Zhao

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**Lectures**
Tuesdays, 1:00 – 3:50 PM, 1 WP, Room 503, Newark

**Office Hours**
Myself: Thursday 2-4pm. For appointment, please e-mail
TA (Ju Myung Song, jumyung.song@rutgers.edu, 1WP cubicle 907A): Tuesdays 10:30am-12:30pm.

**Course Outline**
A supply chain includes all processes and activities that are necessary to generate products and services, and to bring them to market, such as procurement to acquire raw material; manufacturing to convert raw materials into components and final products; and distribution to meet market demand. This course identifies the current challenges in the supply chain (either domestic or global), and introduces models, tools and best practices to handle such challenges and gain competitive advantages. This course combines recent practical innovations and cutting edge academic research to present two modules: (1) supply chain optimization and design, (2) supply chain gaming and integration. We draw examples and case studies from diverse industries, such as retail, wholesaling and distribution, pharmaceutical, electronics and consumer packaged goods.

**Textbooks**
*Course-pack* (required), to be announced

**Reference book** (recommended but not required): ***Designing and managing the Supply Chain***, D. Simchi-Levi, P. Kaminsky, E. Simchi-Levi, McGraw-Hill/Irwin, 2008 (third edition), ISBN 978-0-07-298239-8. Abbreviated as ***SKS***.

**Teaching Method**
The course is taught by a combination of computer presentation, case study and in-class breakout sessions. All Class-related material (lecture notes, readings, links to videos, etc.) will be posted on **Blackboard**. Additional visual material and demos may be shown in some classes. Students should be enrolled in **Blackboard** to access the posted materials. The URL is: **http://blackboard.rutgers.edu**.

**Grading**
The final grade in this course will be based on.

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| Class summary | 5% |
| Class participation | 15% |
| Homework | 20% |
| Term project (group) | 30% |
| Final | 30% |
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| **TOTAL**: | 100% |
| Bonus points: | 1% each successful volunteering |

**The grades for group works are also based on your team members' evaluation of your contribution.**

## Homework Assignments

Homework assignments should be submitted in typed form using a word processor. Be sure to put your name and contact information (email and optional phone) on all homework submitted. Team work is allowed for *some* assignments (specified in class), but team members must specify on the homework the percentage of work done by each of its members.

Assignments are due on the next class, unless otherwise stated. Penalty for late submission (within one week) is 40% off the points allocated to the assignment. **Late submission will not be accepted if it is more than one week late**.

## Class Summary

At the second last class, students are required to hand-in a class summary which includes
- o   What did you learn in this class.
- o   Which topic/example/case study you find more interesting and relevant.
- o   List two applications in your work/life that you can apply the models/tools to.
- o   Topics and subjects you like to cover but not covered in class.

## Term Project

A term project on an operations-related topic is part of the course. Each project can be a team effort of 3-4 people. Please select your team members as early as possible. Each project team will present a brief proposal for 5 minutes and a thorough presentation for about 10-15 minutes (see weekly schedule for dates). Every team member must present. The project will be graded as a team effort, but each team member's grade also depends on his/her contribution.

Select one of the two formats below (a SCM-case or a SCM-technology), and follow carefully the reporting instructions. If you want to do a project that does not obviously fall within the suggested categories, please get permission from the instructor. In that case, please select a topic that is likely to benefit the class. You may be as original and creative about the topic as you can be, but please keep your fellow class members in mind.

## I.  An SCM-Case

Describe an SCM–related problem, present data, apply the methods/tools of this class and show how it can be solved. You can draw on your own work experience (that would likely be most interesting to the class) or study such a case, appearing in the literature or press. Avoid the very popular press or a shallow source. Rather, look for a serious professional article, such as a financial magazine, economics magazine, or a trade magazine (Supply Chain Management Review, Inbound Logistics, etc).

## II.  SCM-Technology

First, select a novel SCM-technology, and describes its contribution (or projected contribution if really new) to the current state of the SCM art. It would be most useful if you have been exposed to that technology on your job, and can report on first hand. Examples of technologies of interest are supply chain operational strategies, distribution strategies, supply chain information systems, electronic commerce, or anything else that is of interest to you and would likely interest class members, but within the domain of the SCM industry. If in doubt, ask the instructor.

Second, **research the current state of the chosen technology** and summarize it in your report. Find out the current or emerging commercial "players", and look at their future technological directions. Based on at least three sources (ordinary articles or Web pages, to be referenced in your report), address briefly at least the following points:

- What are the key technical and economical aspects of the technology which benefit the marketplace (consumers of this technology, both individual and corporate)?
- Who are the current "movers and shakers" in this area? Compare and contrast their technological and business approaches, products, etc.
- What are the current impediments to their approaches for acceptance in the marketplace? Examples are ease of use, price, technological longevity, etc.

Third, based on the current state of the technology, **express your personal opinion and conclusions on the future** of the chosen technology and its applications. Make sure your arguments are logical and backed by your research; you are encouraged, however, voice opinions gleaned from your personal "crystal ball" (convictions and intuition), but be reasonable (and brief…). You may attach to your report supporting material, such as graphs and charts. Remember, anybody can collate material from the Web, but it is harder to analyze such material and reach conclusions, so this part is the most important in your report and will be most heavily weighted.

**Note**: You should *not* cut-and-paste verbatim material from Web pages or copy verbatim material from any other sources, unless you use that material as exact quotes. In that case be sure to enclose any pasted text material in double quotes and to provide an exact reference for it! All pasted graphs and charts should also be properly referenced!

### III. Deliverables

The project is due at the second last week. Before project presentation, each team should submit three documents: (1) A PowerPoint file for the presentation (2) A Word document that includes all the data, assumptions, the model, the solution, the interpretation and citations (3) An Excel file that includes all the calculations.

# COURSE OUTLINE AND ASSIGNMENTS

| Session | Topics Covered | Assignments |
|---|---|---|
| **1 [1/21]** | **Introduction**<br>Course policy and overview | Readings, to be posted on Bb |
| **2 [1/28]** | **Forecasting & Inventory Mgmt – Single Location I**<br>Periodic vs. continuous inventory systems<br>Base-stock vs. reorder-point batch-order models | • Assign HW 1<br>• Read Case: New Jersey Provision |
| **3 [2/4]** | **Forecasting & Inventory Mgmt – Single Location II**<br>Case study: New Jersey Provision | • HW 1 due.<br>• Assign HW 2 |
| **4 [2/11]** | **Multi-Echelon Inventory Management**<br>Manage inventory in distribution networks | • HW 2 due<br>• Assign HW 3 |
| **5 [2/18]** | **Inventory Management in Practice**<br>ASTA fulfillment – Local vs. global inventory strategies<br>Common mistakes made in practice | • HW 3 due<br>• Read case: From Farm To Cup: The Coffee Supply Chain in Kenya |
| **6 [2/25]** | **Supply Chain Risk Management**<br>Case study: From Farm To Cup: The Coffee Supply Chain in Kenya<br>Risk management, operations hedging, risk sharing | • Assign HW 4<br>• Read case: Merloni Elettrodomestici SpA |
| **7 [3/4]** | **Distribution Strategies**<br>Case study: Merloni Elettrodomestici SpA: The Transit Point Experiment (HBS 9-690-003)<br>Cross-Docking, 3rd Party Logistics, E-business logistics | • HW 4 due<br>• Reading on Beer Game, to be posted on Bb |
| **8 [3/11]** | **Beer Game (Class Simulation)**<br>"The Computerized Beer Game", The Bullwhip Effect | • Assign HW 5<br>• Read Case: Barilla SpA (HBS 9-694-046) |
| **9 [3/25]** | **Strategic Alliances**<br>Case study: Barilla SpA (HBS 9-694-046)<br>Alliances and partnerships – VMI & CPFR | • HW 5 due, assign HW 6<br>• Read case: Valentine's Roses – Supply Chain Strategies |
| **10 [4/1]** | **Supply Chain Coordination I**<br>Case study: Valentine's Roses<br>Supply chain gaming and coordination | • HW 6 due, assign HW 7<br>• Read case: Influenza Pandemic |
| **11 [4/8]** | **Supply Chain Coordination II**<br>Case study: Influenza Pandemic<br>Supply chain gaming and coordination | • HW 7 due<br>• Read case: Yaka Pharmaceuticals |

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| **12 (4/15)** | **Managing Pharmaceutical Supply Chains – Resell versus Direct Models**<br><br>Case: Yaka Pharmaceuticals<br><br>Fee-for-service versus direct-to-pharmacy contracts.<br><br>**Project Proposal Presentation** | • Project proposal is due |
| **13 [4/22]** | **Students Project Presentation** | • Project is due |
| **14 [4/29]** | **Final** | |