COURSE DESCRIPTION

Demand planners play a key role in balancing demand and supply in supply chain planning. This course covers essential supply chain knowledge and quantitative skills for managing a demand planning process. Major course components include: demand forecasting and management, inventory management, e-fulfillment strategies, S&OP and CPFR. Quantitative skills are necessary for the success of being a demand planner. Using Excel (solver and analysis toolpak), we implement spreadsheet models in an operational environment and solve resource planning, inventory control and sales forecasting problems (e.g., exponential smoothing and winter’s method). Students will learn basic principles of spreadsheet engineering.

COURSE MATERIALS

- Lecture slides are available on blackboard before each class.

FINAL GRADE ASSIGNMENT

Team Project One (15%):

Students are required to form a team (with maximum 3 members). The task is to build a spreadsheet model and solve an inventory management problem using Excel Solver. I will release the problem on Feb 23 and the project report will be due on Mar 9. The project report should not be longer than 10 pages. Grade criteria – solve the problem correctly, build a clean excel spreadsheet model and write a concise report!

Team Project Two (15%):

Students are required to form a team (with maximum 3 members). The task is to use realworld sales data, build time series models and run forecasting. Each team will make a short presentation on Apr 27 or 29 (15 minutes) and the final project report will be due on May 4. The project report should not be longer than 12 pages. Grade criteria – propose/answer an interesting managerial question, build a clean excel spreadsheet model, conduct statistical analysis/forecasting correctly, and write an informative report!
In the project report, each team needs to report the effort contribution of its team members (e.g., 40%, 30% and 30%). A student who makes less than 25% contribution will receive point deduction.

Exam One (30%):

The in-class exam will be held on **Mar 11**. It focuses on resource planning and inventory control. Students are required to use Excel and build spreadsheet models. There are no conceptual questions on the exam. The exam is open-book and notes.

Exam Two (35%):

The in-class exam will be held on **Apr 22**. It focuses on forecasting techniques and students are required to use Excel, build spreadsheet models and solve a demand planning problem. There are no conceptual questions on the exam. The exam is open-book and notes.

Final Letter Grades:

25-30% of A; 50-60% of B+ and B; 10%-15% C and F.

No extra credits!

If you want to achieve a satisfactory grade, work **hard** on projects and exams. No excuses will be accepted after I release the letter grade.

**Average GPA will be curved around 3.2-3.3 (following the department grading policy).**

Attendance & Class Participation (5%):

Attendance will be informally monitored. Every student is expected to contribute to class discussions. Continuing, thoughtful, and thorough participation in all aspects of the class will enable students to maximize their benefit from this course. Some ground rules include:

- Attend with an open mind – seek to learn
- Engage in class discussions – focus on substance/quality
- Please inform me in advance if you will be absent, late, or have to leave early
- Email, web surf, text and use mobile phones before and after class – not during
- NOTE: If there are any issues with the course, the material, your performance, your attendance or the assignments, please speak to me as soon as possible.

Business articles that are on the syllabus (see below) are to be read prior or after the class. We will solve quantitative operational problems and implement the solution via Excel in class. Students are expected to solve similar problems after class and bring their answers back for in-class discussions (You do not need to hand it in). Discussions on business articles and take-home excel exercises will be held in class and everyone is expected to participate. If it is apparent that you are unprepared for the discussion, your class participation grade will reflect this.
Supply Chain Management (33:799:310)

COURSE SCHEDULE

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<th>Week</th>
<th>Date</th>
<th>Topics</th>
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<td>1, 2</td>
<td>Jan 21, 26 and 28</td>
<td>Roadmap</td>
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<td>3</td>
<td>Feb 2 and 4</td>
<td>Supply Chain Management</td>
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<td>4</td>
<td>Feb 9 and 11</td>
<td>Resource Planning - Excel Solver</td>
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<td>Feb 16 and 18</td>
<td>Inventory Concepts</td>
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<td>Feb 23 and 25</td>
<td>Cycle and Safety stocks (Handout Project 1)</td>
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<td>Mar 2 and 4</td>
<td>Demand Fulfillment</td>
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<td>8</td>
<td>9-Mar</td>
<td>Demand Fulfillment (Project 1 Report Due)</td>
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<td>8</td>
<td>11-Mar</td>
<td>Exam 1</td>
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<td>9</td>
<td>Mar 23 and 25</td>
<td>Forecasting Principles</td>
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<td>Mar 30, Apr 1</td>
<td>Time Series (Handout Project 2)</td>
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<td>11</td>
<td>Apr 6 and 8</td>
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<td>Apr 13 and 15</td>
<td>Demand Management and S&amp;OP</td>
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<td>Apr 27 and 29</td>
<td>Team Presentation - Project 2</td>
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<td>15</td>
<td>4-May</td>
<td>Wrap up the semester (Project 2 Report Due)</td>
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Business Articles – Reading List (posted on blackboard)

Roadmap


Supply Chain Management


Heimo Losbichler and Farzad Mahmoodi, Why working capital should matter to you. Supply Chain Management Review 2012.

**Resource Planning and Modeling Principles**


**Inventory Management and Demand Fulfillment**


**Demand Forecasting and management**


S&OP and CPFR


**Format and Structure for Team Projects**

1. Your project must be word-processed using a standard font (e.g., TimesNewRoman 12) and double-spaced.

2. All charts, data sheets and tables (if any) should be done on the computer. Graphs and charts should have a title and properly labeled axes.

3. All pages must be numbered.

4. Order of pages:
   - COVER SHEET—The first page of your project must be a cover sheet that includes your name(s), date, the title of your project and the percentage contribution of each team member’s effort.
   - EXECUTIVE SUMMARY—Briefly describe the problem, your solution and recommendation to managers.
   - TABLE OF CONTENTS
   - INTRODUCTION, PROBLEM, PURPOSE—This section should include the statements of the project problem and goal. For project 2 only, describe the data source (e.g., SEC 10-Q).
   - FINDINGS—Formulate the quantitative model and conduct quantitative analysis using Excel.
   - CONCLUSION—This is where you interpret your findings (what can you conclude or not conclude from your research) and recommend the solution to managers.
   - REFERENCE—citations and websites referred if any.
   - APPENDICES—attach anything technical or supplementary (e.g., spreadsheet models and explanations).
5. For project 2 only, make a project presentation (10-15 mins)

Hand in a hard copy of your project and send me the electronic version of your files, including excel spreadsheets, datasets (project 2 only), the project report and ppt presentation (project 2 only).