COURSE DESCRIPTION:

Supply Chain Management (SCM) is the design and management of seamless value-added processes across organizational boundaries to meet the real needs of the end customers, better, faster and cheaper than competitors. Supply chain management is about management of material, products, funds, and information flows within a network of suppliers, manufacturers, transporters, warehouses, wholesalers, retailers, and the end customers. Information technology is known as enablers of supply chain management; playing a major role in enhancing the two overall performance dimensions of Supply Chain (SC), responsiveness and efficiency. Driven by fierce global competition and enabled by information technology, companies around the world have been adopting supply chain initiatives to improve their efficiencies and responsiveness to rapid evolution of marketplace. The objective of the course is two folded: (a) providing students with an overview of the principle of supply chain design and management; and (b) applying the principle of supply chain management to the BioMedical industry. The course emphasis will be on: (1) the strategic role of supply chain; (2) the key strategic drivers of supply chain performance; and (3) analytic methodologies for supply chain analysis and assessment.

PREREQUISITE: ISDS 2711 & 3711(or 7020), ISDS 3510 (or ISDS 7080) or equivalent.

PEDOGOGICAL APPROACH:

We apply a combination of learning approaches, including lectures, invited BioMed industry speakers, class discussions, in-class exercises, case studies, semester projects, and exams.
Required Textbook, Reading Material, Case studies, and Semester Projects:

We suggest a required SCM textbook. Also, an ordered list of required papers to read is included in the last section of this syllabus. A list of recommended SCM books for additional consultation is presented in the last section of this syllabus. In addition, case studies and semester projects are discussed below.

Textbook:


Required Papers:

• To support our discussion during the class sessions, a list of required papers is included in the final section of this syllabus. For each class session, a subset of these papers is assigned. Students are required to read these papers prior to the class session and be prepared to discuss the contents of these papers during the class sessions.

Cases:

• Each major topic is supported by a case study prepared and presented by students during the class sessions. Each student prepares a PowerPoint presentation and a short report for each assigned case study. After case study presentations during the assigned class session, both documents should be submitted for grading.

Semester Projects:

• Two semester projects are assigned to individual students. We discuss the nature of the projects below.
  
  o Semester Project I: The purpose of Project I is for individual student to assess the state-of-the-art status of supply chain management within BioMed industry. This assessment would includes identifying strength, weaknesses, issues and problems in key BioMed supply chain processes, including: New product development, sourcing, manufacturing, logistics and distribution, life-cycle services, legal issues, global concerns, and etc. Each student is expected to prepare and conduct a presentation about his/her findings and also prepare and submit a comprehensive report with all references.

  o Semester Project II: The purpose of Project II is for individual student to: (1) map the supply chain processes within the affiliated BioMed company; (2) assess supply chain processes; (3) identify and list potential problems; (4) focus on one of the key problems/issues and provide a comprehensive analyses; and (5) provide a supply chain
solution to the identified problems/issue. Findings from Project I might provide important insight and input into this project. Each student is expected to prepare and conduct a presentation about his/her findings and also prepare and submit a comprehensive report with all references.

Participation and Attendance:

- Class attendance and participation are expected. Active participation of students in all class discussions, case study discussions, and semester projects discussions are encouraged by the course grading method. Topics may be presented that are not within the textbook. A substantial portion of this class is intended to foster learning through discussion.

IMPORTANT WEBSITES:

- The U of M eCourseware website is dedicated to include the course material.
- Supplementary course material from Prentice Hall may be found at:
  - http://www.prenhall.com/chopra
- Also visit the following sites:
  - The Council of Supply Chain Management Professionals (CSCMP)
    - http://www.cscmp.org
  - Institute for Supply Chain Management:
    - http://www.ism.ws
  - Center for Advanced Purchasing Studies (CAPS)
    - http://www.capsresearch.org/
  - International Federation of Purchasing and Materials Management (IFPMM):
    - http://www.iimm.org/ifpsm/ifpsm.htm
  - European Supply Chain Forum:
    - http://www.tm.tue.nl/efgscm/
  - Hong Kong Logistics and Supply Chain Forum:
    - http://www.logistics.ust.hk/forum/
  - Harvard Business School Cases and Reviews)
    - http://textbookcasematch.hbsp.harvard.edu
COURSE SCHEDULE:

A tentative course schedule includes: (a) topics of class sessions, (b) textbook chapters to read; (c) required papers to read; (d) case studies to be prepared, presented and discussed, and (e) required presentations and reports for submission. We have the following headings in the course schedule below:

- **Session**: Class session number
- **Date**: Class session date.
- **Topic**: Topics of discussion
- **Readings**: Reading assignments required for the course. Must be completed before the class session.
- **Prepare**: Student are expected to read the material listed under this heading (case/readings) and come prepared to class for discussion. If it is a case, then they must read the case and prepare the questions for discussions. If it is a reading papers/book chapters, etc., then material in them will be used for class discussion. Furthermore, students may be asked to post their thoughts on specific questions on the group discussion board via the course website.
- **Discuss & Present**: Student teams are expected to prepare the material for discussion and presentation.
- **Submit**: Documents, presentations and reports, to be submitted at the beginning of the class session.
- **Download**: Download the required decision aid to prepare for class session/submissions.
- **Additional Glossary for Decoding the Course Schedule**:
  - **CM**: Stands for the textbook by Choppra and Meindl
  - **Q_P_**: The list of required papers for each module (included at the end of this syllabus).
  - **R_B_**: The list of recommended books (included at the end of this syllabus).
  - **TBA**: To be announced later.
  - **Student Research Projects**: Explained in bullet points above.
  - **Case Studies**: You may find the case studies at the end of chapters in the textbook.

**Important Note**: The tentative schedule is subject to change as required by instructor.
# COURSE EVALUATION:

## Contribution of the Course Activities to the Final Grade:

<table>
<thead>
<tr>
<th>Main Activity</th>
<th>Sub Activity</th>
<th>Sub Activity Percentage Contribution</th>
<th>Main Activity Percentage Contribution</th>
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<tbody>
<tr>
<td>Class Participation:</td>
<td>10%</td>
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<tr>
<td>Case Studies:</td>
<td>Case Presentations</td>
<td>5%</td>
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<td></td>
<td>Case Reports</td>
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<td>15%</td>
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<td>Semester Project I:</td>
<td>Project I Presentation</td>
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<td></td>
<td>Project I Report</td>
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<td>15%</td>
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<tr>
<td>Semester Project II:</td>
<td>Project II Presentation</td>
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<td></td>
<td>Project II Report</td>
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<tr>
<td>Exam I:</td>
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<td>Exam II:</td>
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## Final Grade Assignment:

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<th>Grade</th>
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<td>95-100% =</td>
<td>A</td>
<td>77-79.99% =</td>
<td>C+</td>
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<td>90-94.99% =</td>
<td>A-</td>
<td>74-76.99% =</td>
<td>C</td>
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<td>87-89.99% =</td>
<td>B+</td>
<td>70-73.99% =</td>
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<td>84-86.99% =</td>
<td>B</td>
<td>60-69.99% =</td>
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<td>80-83.99% =</td>
<td>B-</td>
<td>&lt;60%</td>
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# Tentative Semester Schedule

<table>
<thead>
<tr>
<th>Session</th>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Prepare</th>
<th>Discuss and Present</th>
<th>Submit</th>
<th>Download</th>
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<tr>
<td><strong>PART I: Building a Strategic Framework to Analyze Supply Chains</strong></td>
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<tr>
<td>1</td>
<td>01/14</td>
<td>Understanding the Supply Chain &amp; Supply Chain Performance</td>
<td>CM: CHs 1&amp;2 Required Session 1 Papers</td>
<td>Case Study: Seven Eleven-Japan</td>
<td>Student Research Projects I &amp; II Required Session 1 Papers</td>
<td>Student Background Survey</td>
<td>TBA</td>
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<tr>
<td>2</td>
<td>01/21</td>
<td>Supply Chain Performance &amp; Drivers and Metrics</td>
<td>CM: CHs 2&amp;3 Required Session 2 Papers</td>
<td>Case Study: Seven Eleven-Japan</td>
<td>Case Study: Seven Eleven-Japan</td>
<td>Case Study Presentation and Report: Seven Eleven-Japan</td>
<td>TBA</td>
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<tr>
<td><strong>PART II: Designing the Supply Chain Network</strong></td>
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<td>3</td>
<td>09/17</td>
<td>Designing Distribution Networks &amp; Network Design in Supply Chain</td>
<td>CM: CHs 4&amp; 5 Required Session 3 Papers</td>
<td>Case Study: Blue Nile and Diamond Retailing</td>
<td>Case Study: Blue Nile and Diamond Retailing</td>
<td>Case Study Presentation and Report: Blue Nile and Diamond Retailing</td>
<td>TBA</td>
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<td>4</td>
<td>01/28</td>
<td>Network Design in Supply Chain &amp; Designing Global Supply Chain Networks</td>
<td>CM: CHs 5&amp;6 Required Session 4 Papers</td>
<td>Case Study: BioPharma, Inc.</td>
<td>Case Study: BioPharma, Inc.</td>
<td>Case Study Presentation and Report: BioPharma, Inc.</td>
<td>TBA</td>
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<td>5</td>
<td>02/04</td>
<td><strong>Project I Deadline: BioMed Industry Supply Chain Assessment</strong></td>
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<td><strong>Submit: Presentation &amp; Report</strong></td>
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<tr>
<td><strong>PART III: Planning Demand and Supply in a Supply Chain</strong></td>
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<td>6</td>
<td>02/11</td>
<td>Demand Forecasting in a Supply Chain &amp; Aggregate Planning in a Supply Chain</td>
<td>CM: CHs 7&amp;8 Required Session 6 Papers</td>
<td>Case Study: Nintendo Game Girl</td>
<td>Student Research Project II Required Session 6 Papers</td>
<td>TBA</td>
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<td>Week</td>
<td>Date</td>
<td>Topic</td>
<td>CM</td>
<td>Case Study</td>
<td>Notes</td>
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<td>7</td>
<td>02/18</td>
<td>Aggregate Planning in a Supply Chain &amp; Planning Supply and Demand in a Supply Chain</td>
<td>CHs 8&amp;9</td>
<td>Mintendo Game Girl</td>
<td>Case Study: Mintendo Game Girl</td>
<td>Exam I</td>
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<td>02/25</td>
<td><strong>EXAM I: CHs 1 - 9</strong></td>
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<td>PART IV &amp; V: Designing and Planning Transportation Networks &amp; Planning and Managing Inventories in a Supply Chain</td>
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<td>9</td>
<td>03/04</td>
<td>Managing Economies of Scale in a Supply Chain &amp; Managing Uncertain in a Supply Chain</td>
<td>CHs 10&amp;11</td>
<td>Case Study: Managing Inventories</td>
<td>Student Research Project II</td>
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<td>10</td>
<td>03/18</td>
<td>Project II: Selected BioMed Company Supply Chain Assessment: Project Night</td>
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<td>PART VI: Managing Cross-Functional Drivers in a Supply Chain</td>
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<td>11</td>
<td>03/25</td>
<td>Determining Optimal Level of Product Availability &amp; Transportation in a Supply Chain</td>
<td>CHs 11,12&amp;13</td>
<td>Case Study: Managing Inventories</td>
<td>Student Research Project II</td>
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<td>12</td>
<td>04/01</td>
<td>Sourcing Decisions in a Supply Chain &amp; Pricing and Revenue Management in a Supply Chain</td>
<td>CHs 14&amp;15</td>
<td>Case Study: Managing Inventories</td>
<td>Student Research Project II</td>
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<td>13</td>
<td>04/08</td>
<td>Information Technology in a Supply Chain &amp; Coordination in a Supply Chain</td>
<td>CHs 16&amp;17</td>
<td>Case Study: Managing Inventories</td>
<td>Student Research Project II</td>
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<td>14</td>
<td>04/15</td>
<td><strong>Project II Deadline: Selected BioMed Company Supply Chain Assessment</strong></td>
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<td>15</td>
<td>04/22</td>
<td><strong>EXAM II: CHs 1 – 12 &amp; 14 -17</strong></td>
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<td>FINAL GRADE REVIEW: May 4th, 7:00 – 9:00 PM</td>
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</table>

**SPRING BREAK 03/08 – 03/14**
Required Papers:

- **Part I: Building a Strategic Framework to Analyze Supply Chains**
  - **Session 1:**
  - **Session 2:**
- **Part II: Designing the Supply Chain Network**
  - **Session 3:**


**Session 4:**


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**PART III: Planning Demand and Supply in a Supply Chain**

**Session 6:**


• Session 7:


• PAT IV & V: Designing and Planning Transportation Networks & Planning and Managing Inventories in a Supply Chain

• Session 9:


• Session 11:


• PART VI: Managing Cross-Functional Drivers in a Supply Chain

• Session 12:


**Session 13:**


### Recommended SCM Books:


Short Bio

Dr. Amini is Professor of SCM in the Fogelman College of Business and Economics (FCBE). Also, he is an Affiliate Professor at the Luleå University of Technology, Sweden. He serves as Associate Director of FedEx Centre for Supply Chain Management and Director of the Enterprise Simulation and Optimization Lab (eSOL) at the FedEx Institute of Technology, The University of Memphis. He was Director of the FCBE Master Programs from 1994 to 1996.

His current research interests include design and implementation of model-assisted managerial decision making methods and technologies with specific applications in the area of supply chain management. His publications include articles in Management Science, Journal of Production and Operations Management, INFORMS Journal on Computing, International Journal of Heuristics, European Journal of Operational Research, Operational Research Society Journal, International Journal of Operations and Production Management, International Journal of Production Economics, Annals of Operations Research, and Journal of Information and Management. Also, he has published over hundred conference proceedings and research abstracts. In addition, he has contributed to books in the areas of application of artificial intelligence in model-assisted managerial decision making and supply chain management. Dr. Amini has received a number of research grants from institutions within the private and public sectors to support different research projects and a number of university awards for his teaching, research, and service performance. He has been teaching in the undergraduate, MBA, Executive MBA, BioMed MBA, and Ph.D. programs in United States and countries in Europe, Africa, and Middle East. Dr. Amini has been involved in corporate research, consulting, and executive educational programs in the past twenty years.

Dr. Amini holds a BA in Business Administration from The University of Tehran. He received an MBA in Production Operations Management from The University of North Texas, and an MS and a Ph.D. in Operations Research from Southern Methodist University.