



**FALL 2012 (08/25/2012-12/14/2012)**  
**Course Syllabus**

**LOCATOR INFORMATION:**

Course Name: Business Decision Modeling and Analysis – MGMT 3040  
 Credit Hours: 3  
 Contact Hours: Tuesdays & Thursdays: 11:20 a.m. – 12:45 p.m.  
 Class Room: Room 275, Avon Williams Campus

**INSTRUCTOR:**

Name: FAN Chunxing  
 Office: AWC Room K-445, College of Business  
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Office Hours: Tuesdays: 1:00 p.m. – 3:00 p.m.  
 Wednesdays & Thursdays: 1:00 – 5:00 p.m.

**CLASS WEBSITE:** <https://elearn.tnstate.edu>

Please check this site every day. This is extremely important for this course. Announcements, course materials and assignments will be posted on this site. Most functions (contents, drop-box, assessments, etc.) will be used in this course.

**COURSE DESCRIPTION**

Application of management science and decision analysis tools in business decision making, especially in supply chain collaboration environment. Topical application areas will be drawn from all areas of business, industry, and government, including: accounting, finance, information system, investment portfolio analysis, human resources management, production of goods and services in manufacturing and service operations, quality management, and supply chain management. **Course Prerequisite:** ECON 2040 Introduction to Statistical Analysis I.

**TEXTBOOK & MATERIALS****Required Textbook and software:**

- An Introduction to Management Science: Quantitative Approaches to Decision Making, by David R. Anderson, Dennis J. Sweeney, Thomas A. Williams, and Kipp Martin, 12<sup>th</sup> Edition, Thomson South-Western, **ISBN-10:** 0324399804; **ISBN-13:** 978-0324399806.
- **The Management Scientist software:** Install this software from your 12<sup>th</sup> edition Textbook CD or download from [http://dl.dropbox.com/u/1988918/mgtsci6\\_setup.exe](http://dl.dropbox.com/u/1988918/mgtsci6_setup.exe) or <http://dl.dropbox.com/u/1988918/Management%20Scientist.rar> to your personal computer. The software is also available on computer labs of Avon Williams Campus.

- **Excel Solver:** It is available on any computer with Microsoft Office Excel standard software. If “Solver” was not installed in your computer, please use key words “Excel solver installation” to search from <http://google.com> to make it available on your computer.

**Reference books:**

- Practice Management Science, Winston & Albright, 3<sup>rd</sup> Edition, Thomson South-Western, 2007.
- Supply Chain Management – Strategy, Planning, and Operation, by Sunil Chopra and Peter Meindl. Pearson Prentice Hall, 4<sup>th</sup> Edition.

**COURSE GOALS AND OBJECTIVE**

**Management Science** provides a body of knowledge that aids in decision making based on scientific methodology. Utilizing quantitative and qualitative approaches, Management Science methods are used to analyze problems in a vast variety of situations. Such situations include investment portfolio planning, production planning and control, work force planning, blending problems that occur in food and petroleum production, political redistricting, information network design and analysis, inventory control, purchasing and logistic planning, quality management, project planning, decision making under uncertainty, forecasting, and supply chain management. Most of these situations arise in manufacturing, service, and not-for-profit (e.g. government) organizations. The methodologies of Management Science are useful to most professions- accounting, finance and economics, engineering, information systems, biological and chemical sciences, and social sciences.

Goals of the course, specific to business and managerial decision making, are as follows:

- Ability to identify real-life business or industry problems.
- Ability to formulate models for the problems and choose the best solution technique for them.
- Capabilities to interpret the solutions obtained and combine other qualitative factors to make best decisions.
- Solid foundations to model more complex business situations in supply chain management environment.

**ACADEMIC INTEGRITY:**

Academic honesty and integrity lie at the heart of any educational enterprise. Students are expected to do their own work and neither to give nor to receive assistance during quizzes and examinations. Deliberate violations of academic integrity (plagiarism, cheating, misrepresentation, and fabrication of information) are not tolerated. Actions outlined in the Tennessee State University Student Handbook under Code of Student Conduct will be followed for incidents of academic misconduct.

**REASONABLE ACCOMMODATIONS:**

Any students requiring accommodations should contact Patricia Scudder, Director of Students with Disabilities-Disabled Student Services Office, at 963-7400, preferably before the fourth class meeting. The College of Business, in conjunction with the Office of Disabled Student Services, makes reasonable accommodations for qualified students with medically documented

disabilities. I need to be aware of your status if it will affect your class activities and assignments – before assignments are due.

### **CODE OF STUDENT CONDUCT:**

There will be no eating, drinking, sleeping or disruptive behavior in the classroom. Each student is encouraged to participate in classroom activities, ask questions, and work along with the class as recommendations/problem solutions to illustrations, examples, and cases are examined. Additionally, cell phones must be turned off upon entering the classroom and should remain so until class has ended. Action will be taken against those students who do not adhere to appropriate classroom behavior.

### **PROCEDURES AND REQUIREMENTS:**

1. **Participation Policy:** Regular and on time attendance is essential and will be monitored. Students are responsible for any materials covered during their absence. Two lateness or early departure will be equal to one absence. In cases where the student has an acceptable, approved absence, written documentation must be submitted upon returning to class, explaining the absence. The penalty or “F” will be awarded based on the level of absence.
2. **Assignments, quizzes, and exams:** Assignments will be given regularly. You are allowed to collaborate with other students on assignments, but you have to submit your own work on time to Drop-box. Late assignment will not be accepted. Quizzes will be given based on the course progress and necessity. There will be two exams (midterm and final). No collaboration of any kind is permitted on quizzes and exams. Make-up quizzes or exams will not be administered.
3. **Case study** will be assigned after 4 weeks. You have one month to solve the case and generate managerial report. Presentation will be arranged as well.
4. **Method of Instruction:** Instruction will be by lectures, analysis of real life projects and cases. The course will be delivered in a multimedia environment-PowerPoint, Microsoft Excel spreadsheet templates, Management Scientist Software in Windows environment.

### **EVALUATION POLICY & GRADING SCALE:**

Final Grade Distributions		Grading Scale	
Participation	10%	100%-90%	A
Assignments/Project	20%	89%-80%	B
Quizzes	20%	79%-70%	C
Midterm Exam	20%	69%-60%	D
Final Exam	30%	Less than 60%	F

**COURSE OUTLINE AND CLASS ASSIGNMENTS**  
**(This is a tentative schedule and is subject to change)**

<b>Module</b>	<b>Description</b>	<b>Est. Date</b>	<b>Remark</b>
1	Introduction to modeling (Ch-1)	08/28 – 09/11	Quiz-1
2	An Introduction to Linear Programming (Ch-2) <ul style="list-style-type: none"> <li>• <i>Problem formulation</i></li> <li>• <i>Graphical method</i></li> <li>• <i>Spreadsheet, Solver and other software solutions</i></li> <li>• <i>Introduction of LP Applications</i></li> </ul>		
3	Linear Programming <ul style="list-style-type: none"> <li>• <i>Sensitivity analysis and Interpretation of solution (Ch-3)</i></li> <li>• <i>Applications in marketing, finance, operations management, etc. (Ch-4)</i></li> <li>• <i>Advanced applications (Ch-5)</i></li> </ul>	09/13 - 09/25	Quiz-2
4	Distribution and Network Models (Ch-6) <ul style="list-style-type: none"> <li>• <i>Transportation and Transshipment Decisions</i></li> <li>• <i>Assignment models and solution approach</i></li> <li>• <i>Location selection (Handouts)</i></li> <li>• <i>Applications: Spreadsheet, Solver and other software solutions</i></li> </ul>	09/27 - 10/23	Fall Break: Oct. 15-16
5	Integer Linear Programming (Ch-7) <ul style="list-style-type: none"> <li>• <i>Introduction</i></li> <li>• <i>Applications in Business Decision Making</i></li> <li>• <i>Applications: Spreadsheet, Solver and other software solutions</i></li> </ul>		Mid-term: Oct. 22-28
<b>Midterm Exam</b>			<b>Oct. 25</b>
6	Aggregate Planning (Handouts) <ul style="list-style-type: none"> <li>• <i>Basic models</i></li> <li>• <i>Manufacturer – Retailer Promotions</i></li> </ul>	10/29 - 11/15	
7	Inventory planning (Ch-10 and Handouts) <ul style="list-style-type: none"> <li>• <i>Inventory models in stochastic environment</i> <ul style="list-style-type: none"> <li>○ <i>Uncertainty in demand</i></li> <li>○ <i>Uncertainty in lead time</i></li> </ul> </li> <li>• <i>Risk management in supply chain</i></li> <li>• <i>Inventory planning for multiple products</i></li> <li>• <i>Collaborative forecasting and Replenishment in Business</i></li> <li>• <i>Collaborations in multi-echelon inventory management</i></li> </ul>		
8	Lean Operations (Handouts) <ul style="list-style-type: none"> <li>• <i>Lean operations in services</i></li> <li>• <i>Lean operations in manufacturing</i></li> </ul>		
9	Managing Waiting Systems (Ch-11) <ul style="list-style-type: none"> <li>• <i>Managing customer arrival process</i></li> <li>• <i>Managing service process</i></li> <li>• <i>Managing queuing configurations</i></li> <li>• <i>Economics of queues</i></li> </ul>		11/27 – 12/6
10	Simulations of business processes (Ch-12 and Handouts) <ul style="list-style-type: none"> <li>• <i>Manufacturing processes</i></li> <li>• <i>Service operations</i></li> <li>• <i>International logistics</i></li> </ul>		
<b>Final Exam – To be determined</b>			

\*The contents to be covered may be adjusted by instructor according to the situation.