Course Description: ApEc 3002 focuses on the application of microeconomic theory to managerial problems. Lectures, readings, problem sets, lab sessions, case studies and discussions integrate theory and applications. Topics include: an introduction to regression analysis, demand analysis and demand function estimation, cost function estimation, resource allocation decisions, linear and nonlinear programming, market structure, pricing policy, risk analysis and capital budgeting. 4 Credits.

Prerequisites: ApEc 3001 or Econ 3101, OMS 2550 or Stat 3011.

Objectives:
Develop a thorough understanding of microeconomic theory and its application to managerial problems.
Develop skills in the use of quantitative methods for the analysis of managerial decisions.
Develop skills in communicating results and recommendations from economic analysis.

Meeting Times and Places:
Lecture, Section 01: 10:15-11:30, Tuesdays and Thursdays, 143 Ruttan Hall.
Lab, Section 02: 10:40-12:35, Wednesdays, 50 Coffey Hall.
Lab, Section 03: 12:50-2:45, Wednesdays, 50 Coffey Hall.

Instructor:
Jeffrey Apland, 332c Ruttan Hall
Office Hours: 11:30-12:30 Tuesdays and Thursdays; 12:00-1:00 Wednesdays; and by Appointment
Phone: 625-1353; Email: japland@umn.edu

Teaching Assistant:
Huichun Sun; Waite Library and Learning Commons, 232 Ruttan Hall; and 213 Ruttan Hall
Office Hours: 9:00-10:00 Tuesdays and Thursdays; and by Appointment
Email: sunxx825@umn.edu

Office Hours and Appointments: If you need to meet with the instructor or TA and cannot meet during office hours, please send an email or call to arrange an appointment. Emailed questions may be directed to either the instructor or TA, but you are encouraged to send them to both of us, so we can respond promptly.

References: The required text is Managerial Economics: Applications, Strategy and Tactics, twelfth edition, written by McGuigan, Moyer and Harris and published by South-Western, Mason, Ohio. Additional assigned and supplementary readings may be announced during the semester.

Computer Labs and Small Group Exercises: Work on labs and assignments will involve using Excel for basic quantitative analyses, charting, regression analysis, linear programming and financial analyses; and Word for document preparation. Each student will be assigned to a small group to work on in-class problems to be completed throughout the semester.
Grading: Final grades will be determined by the scale in the table below based on the weighted average of scores on assignments, in-class group problems and examinations. The weight will be applied to the score as a percentage of possible points on each item. The total weight for assignments will be 32% and the weight for in-class group exercises will be 8%. The weights for each of two midterm examinations and the final exam will be 20%.

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<td>80.0-82.9</td>
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<td>67.0-69.9</td>
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<td>90.0-92.9</td>
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<td>77.0-79.9</td>
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<td>87.0-89.9</td>
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<td>73.0-76.9</td>
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<td>83.0-86.9</td>
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Unless otherwise noted, assignments must be turned in at the beginning of class on the due date. Except in cases of a valid health or family-related excuse, credit for late assignments will be reduced by one half. Late assignments will not be accepted after the assignment has been graded and returned or the answers have been discussed in class. In-class small group exercises will be collected the same day and absences will be excused only after documented proof of illness or emergency is provided. Make-up examinations will be given only after documented proof of illness or emergency is submitted.

Under the S/N grade base, an S is equivalent to a C- or better. For answers to frequently asked questions about grades and grade policies, go to Student One Stop.

Final Examination Time and Date: 1:30-3:30, Wednesday, December 17th.

Disability Services: The University of Minnesota is committed to providing all students equal access to learning opportunities. Disability Services (DS) is the campus office that works with students who have disabilities to provide and/or arrange reasonable accommodations.

Students who have or think they may have a disability (e.g. mental health, attentional, learning, vision, hearing, physical or systemic), are invited to contact DS to arrange a confidential discussion at 612-626-1333 (V/TTY) or ds@umn.edu.

Students registered with DS, who have a letter requesting accommodations, are encouraged to contact the instructor early in the semester to discuss accommodations outlined in their letter.

Additional information is available at the DS website http://diversity.umn.edu/disability.

Student Mental Health: As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce your ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via http://www.mentalhealth.umn.edu
Course Outline:

I. Introduction, Overview of the Course, and Review
   Reference for Section I: Introduction and Chapter 1; McGuigan, Moyer and Harris.

II. An Overview of Optimization in Managerial Economics
   A. Marginal Analysis
   B. Components of an Optimization Problem
   C. Explicit and Implicit Constraints on Decisions
   D. Constrained Optimization
   Reference for Section II: Chapter 2 and Appendix C; McGuigan, Moyer and Harris.

III. Demand Analysis
   A. Demand Concepts
      1. Utility Maximization
      2. Elasticities
   B. Estimation of Demand
      1. Steps to Demand Estimation
      2. Regression Analysis
      3. Functional Forms
      4. Assumptions of Regression Analysis
   Reference for Section III: Chapters 3, 4 and 4A; McGuigan, Moyer and Harris.

IV. Business and Economic Forecasting
   A. Overview of Forecasting
   B. Qualitative Techniques
   C. Trend Analysis
   D. Business Cycles
   E. Exponential Smoothing
   F. Econometric Analysis
   G. Evaluating Forecasts
   Reference for Section IV: Chapter 5; McGuigan, Moyer and Harris.

V. Production Functions and Efficient Resource Allocation
   A. Technology and the Production Function
   B. Production with One Variable Input
      1. Total, Average and Marginal Products
      2. The Law of Diminishing Returns
      3. Profit Maximization with One Variable Input
   C. Production with Two or More Variable Inputs
      1. Isoquants and the Marginal Rate of Technical Substitution
      2. Types of Factor-Factor Relationships
E. Profit Maximization and Allocation of Several Inputs
   1. Isocost Lines and Cost Minimization
   2. The Expansion Path
   3. The Profit Maximizing Input Combination
   4. Returns to Scale
F. Estimation of Production Functions
Reference for Section V: Chapter 7 and Appendix 7A; McGuigan, Moyer and Harris.

VI. Cost Analysis and Applications
A. Cost Concepts and Cost Measurement
B. Short Run Cost Functions
   1. Total, Marginal and Average Cost Curves
   2. The Profit Maximizing Level of Output
C. Long Run Cost Functions
   1. Long Run and Short Run Cost Curves
   2. The Expansion Path and the Cost Function
D. Economies of Size and Economies of Scale
E. Cost Function Estimation
F. Breakeven Analysis and Operating Leverage
G. Learning and Cost
Reference for Section VI: Chapters 8, 8A and 9; McGuigan, Moyer and Harris.

VII. Linear Programming Applications to Management Problems of the Firm
A. Parts of a Linear Program
B. Graphical Solution to a Linear Program
C. Applications
   1. Blending Problems
   2. Product Mix Problems
   3. Resource Acquisition
   4. Transportation Problems
D. The LP Isoquant
   1. Cost Minimization
   2. Output Maximization
   3. Revenue and Net Revenue Maximization
Reference for Section VII: Web Chapter C; McGuigan, Moyer and Harris.

VIII. Perfect and Imperfect Competition, Pricing and Output Decisions
A. Pure and Monopolistic Competition
B. Profit Maximization for a Monopoly
C. Price Discrimination
D. Pricing Techniques and Analysis
Reference for Section VIII: Chapters 10, 11 and 14; McGuigan, Moyer and Harris.
IX. Investment Analysis and Capital Budgeting
   A. Compounding and Discounting
   B. Budgeting
   C. Investment Criteria
   D. Investment and Capital Budgeting With Linear Programming

Reference for Section IX: Chapter 17; McGuigan, Moyer and Harris.

X. Risk Analysis
   A. Characterizing a Risky Prospect
   B. Expected Utility and Risk Preferences
   C. Probabilistic Budgeting
   D. Strategies of Risk Management

Reference for Section X: Web Chapter F; McGuigan, Moyer and Harris.