

Syllabus Fall 2026

ECON 2090 Decision Analytics – Section 03

Course Information

Course Description:

Quantitative and qualitative aspects of problem solving and decision-making. Includes structuring and basics of decision-making, application of probability, functional relationships, marginal analysis, linear programming, and project management.

Course Prerequisites:

STAT 1772 or equivalent; MGMT 2080 (can be taken as a corequisite) or PHYSICS 1701.

Learning Objectives

University Level Outcomes

- **Critical Thinking:** Students will demonstrate critical thinking through the ability to evaluate, analyze, and integrate information from a variety of sources in order to develop reasoned positions and solutions to problems.
- **Communication:** Students will display competence in oral, written, and visual communication, as appropriate for their discipline.
- **Program Content Knowledge:** Students will demonstrate discipline-specific knowledge and skills in their major fields of study.

Program Level Objectives

- **PO 1:** Students are expected to have acquired cutting-edge business knowledge.
 - Competency 1: Students will demonstrate disciplinary content knowledge.
 - Competency 2: Students will use quantitative skills to aid in business decision making.
- **PO 2:** Students will display exceptional professional skills.
 - Competency 3: Students will have strong communication skills.
 - Competency 4: Students will be able to apply critical thinking skills.

Disclaimer: All details provided in this syllabus are subject to change at my discretion. All changes will be announced in class or via email. If you have missed a lecture, please email me for any announcements.

- **PO 3:** Students will be able to identify and be ready to exhibit strong work values in contemporary organizations.
 - Competency 5: Students will be able to identify ethical components in business situations and be able to frame ethical decisions utilizing an accepted moral philosophy.
 - Competency 6: Students will display other work values such as professional demeanor, quality of effort, dependability, attitude, and initiative.

Course Level Objectives

Students will be able to:

- **CO 1:** compute probabilities of events under different criteria and information states.
- **CO 2:** solve situations where a decision maker has a limited number of discrete choices and outcomes.
- **CO 3:** derive and use basic economic functions that relate to rates of change.
- **CO 4:** solve basic economics problems using derivatives.
- **CO 5:** formulate and solve linear programming problems.
- **CO 6:** apply the basic techniques for project scheduling and management.
- **CO 7:** use Excel to solve decision problems.

Course Topics

The course contains three sections with two modules each, for a total of six modules.

1. Probability & Decision Theory
 - a. Module 1 - Probability
 - b. Module 2 - Decision Theory
2. Marginal Analysis
 - a. Module 3 - Marginal Analysis - Fundamentals
 - b. Module 4 - Marginal Analysis - Applications
3. Linear Programming & Project Management
 - a. Module 5 - Linear Programming
 - b. Module 6 - Project Management

Required Texts/Readings/Other Content

- **Course Packet:** The required course packet for this course is available from the UNI Bookstore.

Instructional Methods

This course includes the following activities and assessments to help you achieve the course objectives. In each module, you will complete various activities, including attending lectures, taking/reading notes, completing practice problems, homework, and taking a combination of quizzes and exams.

Homework

There will be three homework assignments that relate to Excel-based material. Grading rubrics will be posted on eLearning with each homework assignment.

Quizzes

There will be six module quizzes. Module quizzes 1 - 5 will consist of five multiple choice questions worth 2 points each. Quiz 6 will be an Excel-based quiz that will require you to submit a completed Excel spreadsheet along with answers to related multiple-choice questions.

Exams

There will be three section exams and a comprehensive final. All exams will consist of multiple-choice questions worth 2 points each. Section exams will have 20 questions, and the cumulative final exam will have 35 questions.

Evaluation Methods

There will be three homework assignments, six module quizzes, three section exams, and one comprehensive final exam.

Item	Points per unit	Total Points	Approx. Percent
Homework	10	30	11%
Quizzes (best 5 out of 6)	10	50	18.5%
Section Exams (3 total)	40	120	44.5%
Comprehensive Final Exam	70	70	26%
Total		270	100%