ECON 4810: Quantitative Decision Models

3 Credit Hours

Prerequisite: ECON 2105 and ECON 3300, 60 credit hours with a minimum GPA of 2.0, and Admission to the Coles College Undergraduate Professional Program or student in a Coles College Partner Program that includes this course.

This course focuses on both the theory and application of quantitative models to support decision-making under uncertainty. General topics include basic spreadsheet modeling, general probability distributions and decision making under uncertainty, and risk analysis. Specific topics to be covered include Monte Carlo Simulation, Decision Trees, and Real Options Analysis. A mixture of cases and in-class demonstrations will be used to develop your skill in applying management science approaches to decision making within a business environment.
This course may be cross-leveled with ECON 7730

ECON 4850: Decision Analysis and Simulation

3 Credit Hours

Prerequisite: ECON 2105 and (ECON 2300 or STAT 1401), 60 credit hours with a minimum GPA of 2.0, and (Admission to the Coles College Undergraduate Professional Program or student in a Coles College Partner Program that includes this course).

Simulation is the process of designing and creating computer models of existing or proposed real-world systems to conduct numerical experiments to better understand the behavior of that system for a given set of conditions. It enables the creation of models that can represent the variability that exists in many real business systems. A variety of topics in simulation including event-oriented simulation, continuous simulation, and advanced topics such as experimental design and optimization, object-oriented simulation, response surface methodology, will be covered, using a major commercial simulation package. Software such as ARENA will be used to model complex systems in the manufacturing, service, and transportation industries. Emphasis will be on the use of simulation as a tool to support business decision-making. Because this course requires the use of spreadsheet software such as MSExcel modules, some experience with spreadsheets is required.
This course may be cross-leveled with ECON 7750