



Course Outline

Management, Information and Supply Chain
School of Business & Economics

MNGT 4710 - **3.00** - Academic

Decision Analysis

Rationale

Update Curricunet to reflect standard course outlines established by the School.

Calendar Description

Students focus on the development, implementation, and utilization of business models for making informed managerial decisions. Models and management cases from diverse industries, and functional areas are used extensively to illustrate important decision tools, their assumptions and limitations, and how to communicate decisions to management. Topics include critical thinking, avoiding bias in decision making, data analysis, decision analysis, forecasting, resource allocation, and risk analysis.

Credits/Hours

Course Has Variable Hours: No

Credits: 3.00

Lecture Hours: 3.00

Seminar Hours: 0

Lab Hours: 0

Other Hours: 0

Clarify:

Total Hours: 3.00

Delivery Methods: (Face to Face)

Impact on Courses/Programs/Departments: No change

Repeat Types: A - Once for credit (default)

Grading Methods: (S - Academic, Career Tech, UPrep)

Educational Objectives/Outcomes

1. Describe the range of cognitive, psychological and social pitfalls, which decision makers should avoid.
2. Discuss the different approaches, support tools, and analytical methods used for decision making, evaluate decisionsof others and recommend ways they could have improved their decision making.
3. Identifying appropriate settings in which models can be used and how to apply the best decision-making andproblem-solving method for the given type of problem or situation.

4. Demonstrate how to translate decision problems into formal models, and investigate those models in an organized and systematic fashion.
5. Use online data sources and Internet resources to access necessary information for model development.
6. Demonstrate how analytical techniques and statistical models can help enhance decision making by converting data to information and insights for decision-making, including introducing the students to a process for team decision making.
7. Illustrate best practice modeling techniques such as the FAST modelling standard, strategies for reducing errors, and other methods to ensure consistent and easy to understand models.

Prerequisites

ACCT 2250-Management Accounting
ECON 2330-Economics and Business Statistics 2 or
equivalent
MNGT 3730-Leadership

Co-Requisites

Recommended Requisites

Exclusion Requisites

MNGT 4711-Decision Analysis
BBUS 3621

Texts/Materials

Textbooks

1. **Required** Tillman, Frank and Deandra T. Cassone. *A Professional's Guide to Decision Science and Problem Solving: An Integrated Approach for Assessing Issues, Finding Solutions, and Reaching Corporate Objectives* FT Press, 2012

Student Evaluation

The Course grade is based on the following course evaluations.

Case studies/research projects/assignments 30-40% (0.00%) Tests/quizzes 30-40% (0.00%) Final exam 30-40% (0.00%)

Students must pass exam to pass the course.

Course Topics

1. Introduction
 - Introduction to decisions and why decisions go bad
 - Making choices: bias, logic and their implications
 - Tools: Decision Making Models and Tools: Ladder of Inference and Kepner-Tregoe Matrix
2. Overview of Decision Analysis and Critical Thinking

- What is decision analysis, situation and stakeholder analysis?
- Objectives hierarchy, uncertainty assessment and the determining the value of information
- Tools: Mind Maps, Influence Diagrams and Tornado Charts

3. Data Analysis

- Data sources and reliability
- Data classification and visualization and managing “Big Data”
- Spreadsheet engineering, spreadsheet errors and the FAST modelling standard
- Tools: Dashboards, Power View, Power Pivot

4. Decision Analysis

- Information gathering and sensitivity analysis
- Multistage decision problem analysis
- Tools: Decision Trees, Analytical Hierarchy Process (AHP) and Data Envelopment Analysis (DEA)

4. Forecasting

- Forecast process, data considerations, and model selection
- Probability distributions, their impact and estimation
- Tools: Short-term Forecasting Models and Regression Analysis

5. Resource Allocation

- Allocation of resources, data considerations, conflicts and model selection
- Decision engineering and sensitivity analysis
- Tools: Linear, Non Linear and Goal Programming Models

6. Risk Analysis

- Assessing uncertainty
- Decision making under uncertainty models
- Tools: Monte Carlo Simulation

Methods for Prior Learning Assessment and Recognition

As per TRU Policy

Last Action Taken

Implement by Submission Preview Subcommittee Chair Peggy McKimmon

Current Date: 30-Oct-20