

Course Competency

MAN 4732 Business Intelligence for Supply Chain

Course Description

This course will enable students to synthesize their learning from program coursework. The global context within which firms operate will provide the foundation for understanding global supply chain strategy, from market entry through to the integration of demand management and supply management processes to meet corporate objectives. The course will utilize exercises and a simulation to allow students to analyze and synthesize program coursework. The course will help students understand how to best use program knowledge to maximize value creation for employers and in their own career.

Course Competency	Learning Outcomes
Competency 1: Perform break even analysis to make supply chain management decisions	1. Communication
1. Defining the term management science. Describing the nature of management science. Explaining what a mathematical model is.	
Competency 2: Build a linear programming based mathematical model to capture the real-life decision-making process.	1. Communication 2. Numbers / Data 3. Critical thinking
1. Utilizing a mathematical model to perform break-even analysis. Utilizing a spreadsheet model to perform break-even analysis. Describing the relationship between analytics and management science.	
Competency 3: Solve linear programming model using graph method and using the Excel spreadsheets.	1. Communication 2. Numbers / Data
1. Explaining what linear programming is.	

<p>Identifying the three key questions to be addressed in formulating any spreadsheet model. Formulating a basic linear programming model in a spreadsheet from a description of the problem. Utilizing Excel to solve a linear programming spreadsheet model.</p>	
<p>Competency 4: Perform sensitivity analysis to know the supply chain managerial interpretation of linear programming model.</p>	<ol style="list-style-type: none"> 1. Critical thinking 2. Information Literacy 3. Cultural / Global Perspective
<ol style="list-style-type: none"> 1. Explaining what is meant by what-if analysis. Summarizing the benefits of what-if analysis. Predicting how the value in the objective cell would change if a small change were to be made in the right-hand side of one or more of the functional constraints. Describing the goal of robust optimization and how it is implemented with independent parameters. Utilizing chance constraints to deal with constraints that actually can be violated a little bit. 	
<p>Competency 5: Model a wide variety of medium to large linear programming (LP) problem applied in the various functional area of supply chain management such as inventory, production, finance, transportation, operations, etc.</p>	<ol style="list-style-type: none"> 1. Communication 2. Numbers / Data
<ol style="list-style-type: none"> 1. Identifying the kind of decision-making environment for which decision analysis is needed. Describing the logical way in which decision analysis organizes a problem. Describing and evaluating several alternative criteria for making a decision. Applying Bayes' decision rule to solve a decision analysis problem. Utilizing Analytic Solver to construct and solve a decision tree. Describing some common features in the practical application of decision analysis. 	

<p>Competency 6: Perform network analysis, decision analysis for uncertain situation and waiting line analysis to make managerial decisions in supply chain.</p>	<ol style="list-style-type: none"> 1. Critical thinking 2. Information Literacy 3. Cultural / Global Perspective 4. Social Responsibility 5. Ethical Issues 6. Computer / Technology Usage 7. Aesthetic / Creative Activities 8. Environmental Responsibility
<ol style="list-style-type: none"> 1. Describing some important types of forecasting applications. Identifying two common measures of the accuracy of forecasting methods. Adjusting forecasting data to consider seasonal patterns. Describing several forecasting methods that use the pattern of historical data to forecast a future value. Applying these methods either by hand or with the software provided. Comparing these methods to identify the conditions when each is particularly suitable. Describing and apply an approach to forecasting that relates the quantity of interest to one or more other quantities. Describing several forecasting methods that use expert judgment. 	

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