Review Sheet for OMGT3223 Assessment Exam

Understand Which Model to Use for What Type of Problem – Solution Methodology

- Decision Analysis→problems w/ multiple decision alternatives that need to be compared (e.g., payoffs tables, decision trees, expected value calculations, etc.)

- Optimization→problems that state an objective like maximizing profit or minimizing cost and state some underlying constraints on that objective

- Simulation→problems that contain many stochastic variables, specifically those variables that have associated distributions

- Linear Regression→problems trying to predict the value of a variable using other variables

Optimization Modeling

Know the 3 parts of a Linear Program
- Objective Function
- Constraints
- Non-Negativity Assumptions

Know what a shadow price is, how to interpret it, and how it is related to a constraint

Simulation Modeling and Analysis

- Simulation is used to provide easy sensitivity analysis, as a training device, and as of late because handy commercial software packages are now available

- Monte Carlo simulation refers to a group of methods in which physical or mathematical problems are simulated using randomly generated number. Words that characterize Monte Carlo are: Chance, Sampling, and Random.

Decision Making Under Uncertainty

- Know and be able to use the formula for Expected Value = $\sum x * p(x)$

- Be able to compute and compare expected values for two decision alternatives

- Be able to use and interpret the following Decision Criteria: Maximax, Maximin, Minimax Regret

Linear Regression Model

- Understand how to read the output from the Excel Data Analysis Regression package

- Know what R^2, the F statistic, and the t statistic are and how to interpret them

- Know how to construct a linear regression equation from the Excel Data Analysis output and be able to use that equation to calculate a predicted value of y-hat