Optimization Methods in Management Science (DISC 322)

Credit Hours: 3

Course Pre-Requisites: Probability and Statistics (DISC 203) OR Probability (MATH 230) & Mathematics (MATH 231) OR Statistics and Data Analysis (ECON 230) & Introduction to Management Science (DISC 212) & DISC 230 (Introduction to Business Process Modelling)

Instructor/s: Muhammad Tayyab

Schedule: Monday to Friday (2.00 PM – 4.00 PM)

Course Description

This is a core course for undergraduate management science students. It is designed to provide students with a sound conceptual understanding of the role that management science plays in the decision making process. The course intends to build a strong theoretical foundation in the area that could help students with further research and graduate studies. It is an advanced level course in developing decision models and understanding their application to management problems. The emphasis is on models and techniques that are widely used in all industries and functional areas, including operations, finance, accounting, and marketing. Specific topics covered in this course include: techniques such as basic Linear Algebra, linear programming (Simplex method, Tabular form, Big M method, Two Phase method, Revised Simplex, Duality theory) Integer Programming (Knap sack, branch and bound algorithm, TSP), Goal programming, Multi objective optimization, Non-linear programming, GA, Tabu search, Dynamic Programming, Stochastic methods, and Markov Chains