Prescriptive Analytics
Syllabus

Week/Module	Topics
Week 1: Prescriptive Analytics and Linear Programming (LP)	• Introduction: Prescriptive Analytics and Optimization • Applications in DecisionMaking • Structuring a DecisionProblem and Model Building • Solving a Linear Programming (LP) Problem - Graphical Illustration • Infeasibility, Unboundedness, Multiple Optimal Solutions
Week 2 – Sensitivity Analysis and Duality	• The Simplex Algorithm • Solving an LP using Solver • Sensitivity Analysis andApplications • Primal and Dual Problems • Significance of the Dual
Week 3 – LP Formulationsand Applications	• Blending Problems • Network and TransportationProblems • Shortest Path Problem • Multi-Period Problems • Scheduling Decisions
	• Mid – Term Assessment

Week 4 – Integer Programming (IP)	• Binary and IntegerVariables • Structuring Integer Programming Problems • Logical Constraints • Branch-and-BoundAlgorithm • Solving Integer Programming Problems
Week 5 – Multicriteria Optimization	• Multi-Criteria DecisionMaking • Goals vs. Hard Constraints • Satisficing Solutions • Preemptive Priorities • Non-Preemptive Priorities • Ranking of Decisions
	End – Term Assessment

Final Exam Details:

If you wish to obtain a certificate, you must register and take the proctored exam in person at one of the designated exam centres. The registration URL will be announced when the registration form is open. To obtain the certification, you need to fill out the online registration form and pay the exam fee. More details will be provided when the exam registration form is published, including any potential changes. For further information on the exam locations and the conditions associated with filling out the form, please refer to the form.

Grading Policy:

Assessment Type	Weightage
Mid-Term & End-Term	25%
Final Exam	75%

Certificate Eligibility:

• 40% marks and above in Mid Term & End Term
• 40% marks and above in the final proctored exam

Disclaimer: In order to be eligible for the certificate, you must register for enrolment and exams using the same email ID. If different email IDs are used, you will not be considered eligible for the certificate.