

### Curriculum plan (Odd Semester 2025-26)

**Teacher Name: Chetan Kumar**

**Paper name: Advanced Mathematical Methods for Economics – ECON009**

**Class type: BA (Hons) Economics Sem-3**

**Paper shared with: NA**

Unit to be taken	Month wise schedule to be followed	Tests/Assignments/ Revision/Presentations etc
UNIT I: Multivariate Optimization with constraints (19 hours) Constrained optimisation with equality and inequality constraints: geometric characterisation,	August (Week 1-Week 4)	Internal Assessment (IA): 30 Marks <ul style="list-style-type: none"><li>• Two class test (12 marks each), and</li><li>• 6 marks for attendance</li></ul>
UNIT I: Lagrange characterisation using calculus and applications; properties of value function: envelope theorem, applications.	September (Week 1)-(Week 2)	
UNIT II: Linear programming Introduction, graphical solution, matrix formulation, duality, economic interpretation.	September (Week 3)-(Week 4)	Continuous Assessment (CA): 40 Marks <ul style="list-style-type: none"><li>• assignments will be periodically provided to the students</li></ul> 35 marks towards the overall assessment
UNIT III: Definite integrals, indefinite integrals and economic applications; first order and second order difference equations, equilibrium and its stability;	October (Week 1 - 4)	
UNIT III first order differential equations, phase diagrams and stability; second order differential equations	November (Week 1-week 4)	
		-5 marks for attendance

### Readings

1. Sydsaeter, K., Hammond, P. (2002). **Mathematics for economic analysis**. Pearson Educational.