

Integral Equations (APL 707) 3-0-0

Course Co-ordinator : Gaurav Singh (E: gsingh@am.iitd.ac.in, O: IV-255, P: 1184)

Class Schedule :

X slot (live lectures in consultation with the registered students)

Outline :

S. No.	Topic
1	Hadamard's Inequality & Hilbert Spaces
2	Existence Theorems
3	Volterra Equations
4	Integral Equations with L_2 Kernels (Fredholm Equations)
5	Ordinary & Partial Differential Operators
6	Transforms (Fourier, Laplace, Hankel & Mellin)
7	Wiener-Hopf Equation
8	Singular Integral Equations (Cauchy Type)
9	Applications-Numerical Methods

Book :

Hochstadt H., Integral Equations, First Edition, Wiley, 1973

Evaluation :

Minor	:	25%
Assignment/Viva	:	35%
Participation	:	10%
Major	:	30%

Note :

- All evaluative components of this course are open-book in nature with access only to the textbook and hand-written notes.
- Assignments will have to be typed in Latex and uploaded by students on a regular basis
- Students who have already completed or are currently registered for MTL 746 cannot register for this course
- There is a coding component in the assignments which involves numerically solving singular integral equations in Python
- Minimum of 30% and 40% marks needed for passing this course in credit and audit mode respectively