

Mathematics for Physics -1: Operators on Hilbert Spaces (May-July, 2026, Onirban Islam)

Lecture 01: Finite-dimensional Hilbert Spaces

Lecture 02: Infinite-dimensional Hilbert Spaces

Lecture 03: Bounded Operators

Lecture 04: Unbounded Operators

Lecture 05: Self-adjoint Operators

Lecture 06: Spectrum

Lecture 07: Spectral Theorem - I

Lecture 08: Spectral Theorem -II

Lecture 09: Spectral Theorem - III

Lecture 10: Algebraic and Topological Duals

Lecture 11: Gelfand Triplet and Dirac Bra-ket Formalism

Lecture 12: Position and Momentum Operators in Quantum Mechanics

Lecture 13: Canonical Commutation Relations in Quantum Mechanics

Lecture 14: One-parameter Group of Unitary Operators

Lecture 15: Spectral theory of a Quantum Harmonic Oscillator

Lecture 16: Trace-class Operators and Partition Function of a Quantum Harmonic Oscillator

Date and time (Bangladesh Standard Time)	Lecture
01/05/2026, 7pm-9pm	L01
02/05/2026, 7pm-9pm	L02
03/05/2026, 7pm-9pm	L03
09/05/2026, 7pm-9pm	HW
15/05/2026, 7pm-9pm	L04
16/05/2026, 7pm-9pm	L05
23/05/2026, 7pm-9pm	HW
30/05/2026, 7pm-9pm	L06
31/05/2026, 7pm-9pm	L07
05/06/2026, 7pm-9pm	L08
06/06/2026, 7pm-9pm	L09
07/06/2026, 7pm-9pm	HW
12/06/2026, 7pm-9pm	L10
13/09/2026, 7pm-9pm	L11
14/06/2026, 7pm-9pm	L12
19/06/2026, 7pm-9pm	L13
21/06/2026, 7pm-9pm	HW
3/07/2026, 7pm-9pm	L14
4/07/2026, 7pm-9pm	L15
5/07/2026, 7pm-9pm	L16