PMRF-ISSS Teaching Programme
Prime Minister Research Fellowship students' teaching requirement
facilitated by the Institute of Smart Structures and Systems

Module PMRF-ISSS0##

Quantum Mechanics-I

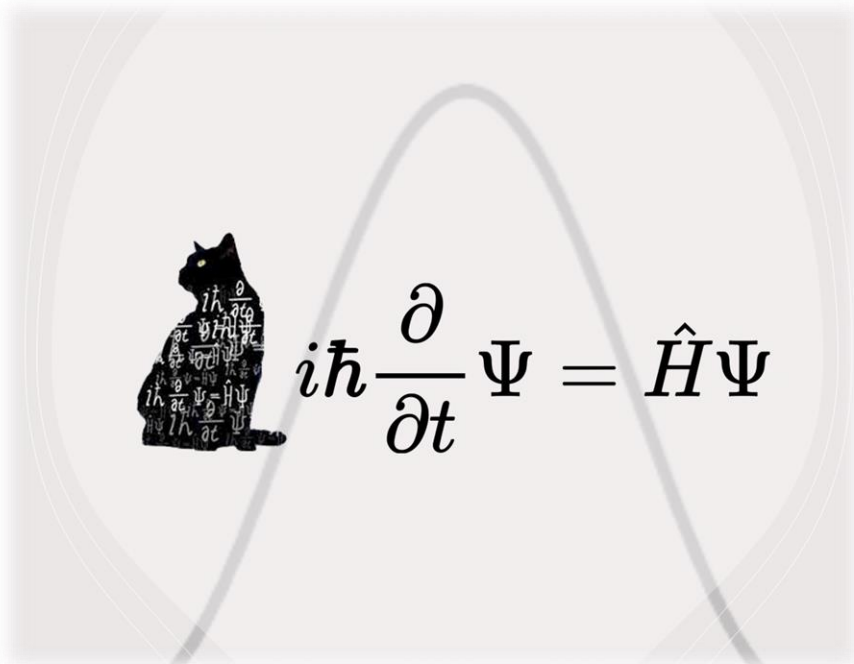**Name of the PMRF student**

Priyanshi Bhasin

Course Relevant for
All Engineering Streams

(Useful for Undergraduates and Postgraduates interested in pursuing a career in Quantum Technologies such as Quantum Computation, Nanoscience etc.)

Faculty coordinator

Online session coordinator

$$i\hbar \frac{\partial}{\partial t}\Psi = \hat{H}\Psi$$

Details of the content of the module

1. **Introduction to Quantum Mechanics** (3 Lectures)
   i. Double Slit Experiment for waves and electrons.
   ii. Introduction to Superposition Principle, Born Rule, de Broglie waves
2. **Framework of Quantum Mechanics** (7 Lectures)
   i. Observables as operators, Probabilistic Interpretation, Measurement Collapse
   ii. Schrodinger equation, Boundary conditions
   iii. Expectation values, Commutation Relations
3. **One dimensional Schrodinger equation** (6 Lectures)
   i. Free Particle
   ii. Particle in a box, Introduction to uncertainty relation
   iii. Finite potential well
   iv. Delta function potential
   v. Harmonic Oscillator

Nature of Module: Lectures and Problem-Solving sessions

Schedule of the module

Timings: 02:30 PM - 03:30 PM (Every Tuesday and Last Thursday of the month)

Start Date: October 5, 2021

Course Ends: December 30, 2021

Total number of sessions: 16

Meeting links
Tuesday Meeting
Thursday Meeting

Contact email ID: isss.forum@gmail.com

 Registration link:
https://forms.gle/WDgXEoNivBhkiPgx5