

**Shree Swami Vivekanand Shikshan Sanstha Kolhapur,  
DATTAJIRAO KADAM ARTS, SCIENCE AND COMMERCE COLLEGE,  
ICHALKARANJI**

**Course Outcomes**  
**Quantum Mechanics (Paper-X)**  
**B.Sc. III (PHYSICS)**

---

This course develops concepts in quantum mechanics such that the behavior of the physical universe can be understood from a fundamental point of view. It provides a basis for further study of quantum mechanics. Content will include: Review of the Schrodinger equation, operators, Eigen functions, compatible observables, infinite well in one and three dimensions, degeneracy, scalar products of wave functions, completeness relations, matrix mechanics; harmonic oscillator in one and three dimensions; sudden approximation; central potentials, quantization of angular momentum, separation of radial and angular variables, spherical harmonics, hydrogen atom, spin.

**Course Outcomes:-**

1. Show an understanding of wave mechanics in three dimensions.
2. Describe the structure of the hydrogen atom and show an understanding of quantization of angular momentum.
3. Apply techniques such as differential methods and ladder operators for selected problems in quantum mechanics.
4. Use the tools, methodologies, language and conventions of physics to test and communicate ideas and explanations.