1. . Subject Code: **EP-309**   Course Title: **Quantum Information and Computing**

2.Contact Hours :   L : 3   T : 1   P : 0
1. Examination Duration (Hrs.) :   Theory : 3 Practical : 0
2. Relative Weight :   CWS : 25 PRS : 0: MTE : 25 ETE : 50   PRE : 0
3. Credits :   4
4. Semester :   ODD
5. Subject Area :   DEC-2
6. Pre-requisite :   Nil
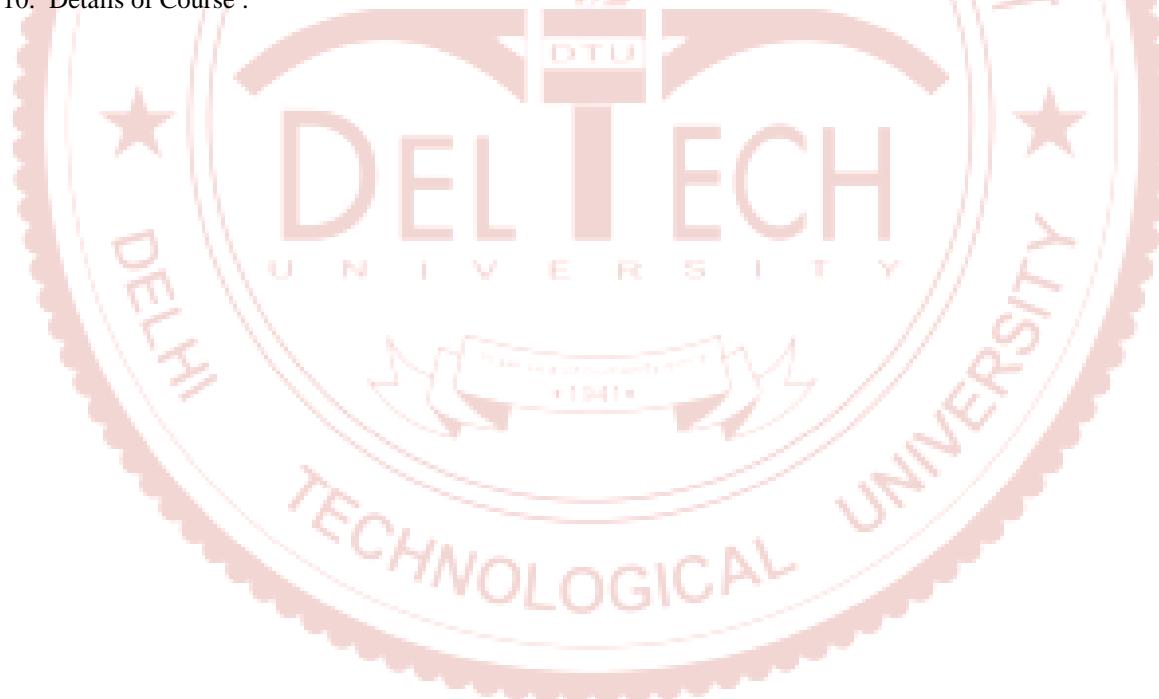7. Objective :   The student will be able to formulate and explain about

research based emerging field quantum computing with the help of fundamental concepts of quantum mechanics, and will learn to formulate the Schrodinger equation to obtain eigenvectors and energies and describe the propagation of quantum information using logic gates in various fields.

10. Details of Course :

S.No	Name of Books	Year of publication/ Reprint
1	Biophysics: An Introduction Roland Glaser	2000
2	Molecular and Cellular Biophysics Meyer B. Jackson	2006
3	Introductory Biophysics: Perspectives on the Living State J.R. Claycomb and Jonathan Quoc P. Tran	2010
4	Quantitative Understanding of Biosystems: An Introduction to Biophysics Thomas M. Nordlund	2011

S.No.	Contents	Contact Hours
1.	**UNIT I:** Introduction to Turing machines-classical probabilistic and deterministic Turing machines, Quantum Turing machines; introduction to computability, complexity, classical complexity and quantum complexity classes-Quantum Physics and Computers.	10