Code	Subject Title	Cr. Hrs	Semester
PHY-422	**COMPUTATIONAL PHYSICS-II**	**3**	**VIII**
Year	Discipline		
4	**Physics**		

Course Outlines:

Simulation techniques-II , Physics problem solving, Motion of falling objects, Motion in single and multi dimensional, programming techniques in quantum mechanics, statistical mechanics and nuclear physics, Numerical solutions to Schrodinger's equations , Numerical integration and Monte Carlo Methods.

Laplace transformation, Solution of Linear Algebraic Equations, Sorting and Curve fitting, Interpolation and extrapolation, Special Functions, Differentiation and Integration of functions, Random Number Generation and Monte Carlo Integration, Fourier Transform Spectral Methods

Books Recommended:

1. *Computational Physics* by J.M. Thijssen, CUP (1999).
2. *Computational Methods in Physic, Chemistry and Biology by*P.Harrison, John Willey and Sons (2001).
3. *A First Course in Computational Physics* by Paul L. Devries, John Willey and Sons. N.Y. (1994).
4. *Computational Physics* by Henry J. Gardner, World Scientific, Singapore (1997).
5. *Numerical Recipes: The Art of Scientific Computing* by William H. Press, Brian P. Flannery, Saul A. Teukolsky, and William T. Vetterling Cambridge University Press, (1988).
6. *Mathematica for Physics*: Robert L. Zimmerman Addison Wesley Publishing Company, 1994.