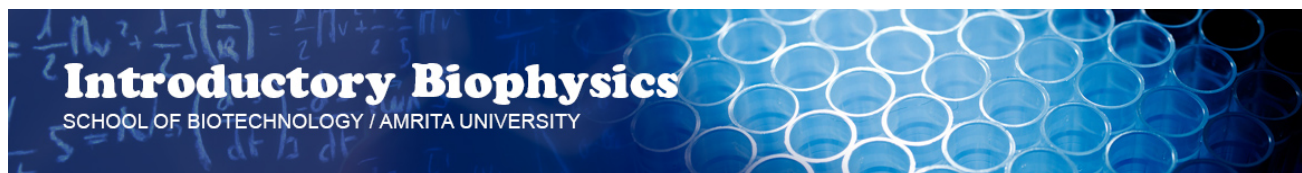


Introductory Biophysics Fourth Semester Syllabus for BSc Biotechnology



DETAILS:

COURSE NAME: Introductory Biophysics

PROGRAM: B.Sc. Biotechnology (/program/b-sc-biotechnology)

CREDITS: Two

SYLLABUS

- Thermodynamics of living systems: Conservation of energy in living systems, Entropy and Life, Gibbs and Standard free energy, Equilibrium constant, Coupled reactions.
- Protein folding: Forces for protein stability, Protein denaturation and renaturation, Protein folding pathways, Levinthal's paradox, Molten globule, Folding accessory proteins, Prediction of protein structures, Protein Function: Structure of heme, Structure of Myoglobin and hemoglobin, Oxygen binding mechanism, Oxygen binding co-operativity, Hill equation, Hill coefficient, Allostery in hemoglobin, Bohr effect.
- Dynamics of biomolecules: Diffusion, Laws of diffusion, Active transport, Facilitated diffusion, Osmosis, Osmotic pressure, Osmoregulation, Viscosity and biological importance, Surface tension, Factors influencing surface tension, Biological importance.

REFERENCES

1. Biochemistry by Voet and Voet
2. Biological Thermodynamics by Donald T. Haynie
3. Introductory Biophysics by J. R. Claycomb and J.Q.P. Tran
4. Molecular and Cellular Biophysics by Meyer B. Jackson

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