

BBL342: Physical and Chemical Properties of Biomolecules

Evaluation policy

1. Minor I - 20 marks
2. Minor II - 20 marks
3. Major – 40 marks
4. Quiz 1-2 – 10 marks
5. Tutorials - 10 marks (collected on weekly basis)

Course topics and organization of the lectures

Minor I + Quiz 1

1. Understanding life, cell structure & biomolecules
2. Molecular forces in Biology
3. Rate of reaction and free energy
4. Water
5. Proteins
 - A. Amino acid
 - B. Structural protein
 - C. Membrane protein
6. DNA
7. RNA
8. Carbohydrates
9. Lipids

Minor II + Quiz 2

1. Purification of biomolecules
2. Transport properties
 - A. Diffusion
 - B. Membrane transport
 - C. Directed motility
3. Centrifugation
4. Electrophoresis
5. Introduction to spectroscopy
6. X-ray Diffraction
7. Absorption Spectroscopy
8. Luminescence and Fluorescence
9. Microscopy

Major Exam

1. Mass spectroscopy
2. NMR spectroscopy
3. IR spectroscopy
4. Recap of topics from minor I & II
5. Practice for major exam