

Techniques in Biochemistry – BC211 (Elective) by Ashutosh Singh

Key Readings

- Wilson and Walker's principles and techniques of biochemistry and molecular biology 8 Edition, 2018. Cambridge press
- Introduction to practical Biochemistry, Plummer, David T., Tata Mcgraw Hill, 1988.
- Physical Biochemistry: Principles and applications, Sheehan, David, John Wiley. 2010 @nd edition
- Sawhney, S.K. and Singh, R. (2005). Introductory Practical Biochemistry. Oxford, UK: Alpha Science International.

Intermediate Readings

- Freifelder (1987). Physical Biochemistry. Freeman
- Alberts et al (2008). Molecular Biology of the Cell. GarlandZubay et al (1995). Principles of Biochemistry. WCB
- Boyer (1993). Modern Experimental Biochemistry. Benjamin
- Clark & Switzer (2000). Experimental Biochemistry. Freeman
- Boyer 2007 (2007). Concept of Biochem. 3rd Ed

Frontier Readings

- Charles Cantor and Paul Schimmel. Biophysical Chemistry: Part I: The Conformation of Biological Macromolecules.
- Charles Cantor and Paul Schimmel. Biophysical Chemistry: Part II: The Conformation of Biological Macromolecules.
- Charles Cantor and Paul Schimmel. Biophysical Chemistry: Part III: The Conformation of Biological Macromolecules.

Suggested Online Video Lecture Series

- Experimental Biochemistry by NPTEL (Co-ordinated by IIT Kharagpur)
<https://nptel.ac.in/courses/104105102/#>

Few Landmark Papers in Biochemistry

- Bradford's Assay: Marion M Bradford
http://hoffman.cm.utexas.edu/courses/bradford_assay.pdf
- Enzyme Kinetics: Goody and Johnson
https://pubs.acs.org/doi/suppl/10.1021/bi201284u/suppl_file/bi201284u_si_001.pdf
- The Birth of Modern Biochemistry: Otto Meyerhof

<https://www.nobelprize.org/prizes/themes/otto-meyerhof-and-the-physiology-institute-the-birth-of-modern-biochemistry-2>

- The Citric Acid Cycle: Hans Krebs
<https://www.nobelprize.org/uploads/2018/06/krebs-lecture.pdf>

Suggested papers/ reviews/ book chapters/ books

- The role of water in the structure and function of biological macromolecules. Par Kristin Bartik.
- Weak Interactions in Aqueous Systems.
- Noncovalent Bonds. Lodish H, Berk A, Zipursky SL, et al. Molecular Cell Biology. 4th edition. New York: W. H. Freeman; 2000.
- Gel Electrophoresis – Principles and Basics. Edited by Sameh Magdeldin. Published by InTech. ISBN 978-953-51-0458-2.
- Basic Principles of Chromatography. Baraem P. Ismail. S. Nielsen (ed.), Food Analysis, Food Science Text Series, DOI 10.1007/978-3-319-45776-5_12, © Springer International Publishing.
- Ionization-based detectors for gas chromatography. Poole CF. J Chromatogr A. 2015 Nov 20;1421:137-53. doi: 10.1016/j.chroma.2015.02.061.
- Centrifugation. Principles and Techniques of Biochemistry and Molecular Biology.
- Determination of absolute molecular weights using sedimentation equilibrium analytical ultracentrifugation. Harding SE. Methods Mol Biol. 1994;22:75-84.
- Basic Principles of Spectroscopy. Michael H. Penner. S.S. Nielsen, Food Analysis, Food Science Texts Series, DOI 10.1007/978-1-4419-1478-1_21, Springer Science+Business Media, LLC 2010.
- Biological Macromolecules: UV-visible Spectrophotometry. Franz-Xaver Schmid. ENCYCLOPEDIA OF LIFE SCIENCES / & 2001 Macmillan Publishers Ltd, Nature Publishing Group.
- PRINCIPLES IN NMR SPECTROSCOPY. B. Diehl.
- Spectrofluorimetry. Dr. Hisham E Abdellatef.

*In case if you are unable to access the suggested papers/ reviews/ book chapters/ books, please contact at: singh_ashutosh@lkouniv.ac.in