

Updated Topic Guide for Physical Biology Module

Course BB101 is comparatively new as part of the undergraduate curriculum at IIT Bombay. This course being taught only since last two years. Unfortunately, there is no single text book which instructors can use to teach module II at the level of undergraduates. This is why instructor has to use following three different text books to teach the Module II

Reference Book 1: Physical Biology of the cell, R. Phillips, J. Kondev, J. Theriot, H. Garcia (Publisher: Garland Science)

Reference Book 2: Biological Physics, Philip Nelson (Publisher: W. H. Freeman)

Reference Book 3: Mechanics of Motor Proteins and the Cytoskeleton, Jonathan Howard (Publisher: Sinauer Associates Inc.)

Below I have listed where one can find topics discuss in lectures

Lecture 5

Topic: Proteins and their structures

[Molecular Biology of the Cell](#) (© Garland Science 2008) or any other standard Biology Textbook

Topics: Protein Structures and Folding, Protein Structures are free energy minimizers, Free Energy and Entropy

[Lecture Slides are enough](#)

Topic: Micro-state and Macro-state

[Page 76-78 of Chapter 5 as well as Section 5.1 in Appendix of Reference Book 2. Some useful discussion is also given in Section 6.1.3 of Reference Book 1.](#)

Topic: HP Model of Protein Folding

[Lecture Slides are enough. However, one can also look at section 8.4.3 in Chapter 8 of Reference Book 1.](#)