

## **BT101 Introductory Biology (3-0-0-6)**

*Prerequisite: Nil*

Evolution of life: Origin of Life; Darwin's concepts of evolution; Biodiversity. Cell, the structural and functional unit of life: Three domains of life; cell types, cell organelles and structure; Basic biomolecules of cell.

Nutrients, bioenergetics and cell metabolism: Essential nutrients to sustain life; biological energy and laws of thermodynamics, basics of aerobic and anaerobic glycolysis and citric acid cycle.

Genes and chromosomes: DNA, DNA replication; Central dogma of molecular biology: Transcription and translation; Mendelian Genetics; Genetic engineering/Cloning and its applications.

Biological systems: Body systems required to sustain human physiology, special sense organs including hearing, taste, smell and visual receptors.

### **Texts:**

- [1] J. L. Tymoczko, J. M. Berg and L. Stryer, Biochemistry, 8th Edition, W. H. Freeman & Co, 2015.
- [2] D. L. Nelson and M. M. Cox, Lehninger Principles of Biochemistry, 7th Edition, Macmillan Worth, 2017.

### **References:**

- [1] N. Hopkins, J. W. Roberts, J. A. Steitz, J. Watson and A. M. Weiner, Molecular Biology of the Gene, 7th Edition, Benjamin Cummings, 1987.
- [2] C. R. Cantor and P. R. Schimmel, Biophysical Chemistry, Parts I, II and III, W.H. Freeman & Co., 1980.
- [3] C. C. Chatterjee, Human Physiology, Volumes 1 and 2, 11th Edition, Medical Allied Agency, 1987.
- [4] B. K. Hall, Evolution: Principles and Processes, 1st Edition, Jones & Bartlett, 2011.