



Indian Institute of Technology

Course Details Report

Course No: BT1010

Course Name: Life Sciences

Course Type:

Theory

Description:

To provide suitable exposure to the fundamentals in biology to engineering students.

Course Content:

Students will be exposed to basic biology concepts and their applications: What is life and how did it originate on earth? ; What is evolution?; The fundamental molecules of life (Biomolecules), cellular metabolism, energy aspects; DNA replication; Cell replication and its quantification; How are proteins made in the cell? – Transcription and translation; Mendelian genetics as a useful tool; The coordinated function of cells in a biological system – Human organ systems; Applications of life sciences in healthcare and industrial biotechnology.

Text Books:

1. Campbell, N. A., Urry, L. A., Cain, M. L., Wasserman, S. A., Minorsky, P. V., and Reece, J. B, Biology: A Global Approach, Global edition, 11th edition, Pearsons, 2017.
2. David S. Goodsell, The Machinery of Life, 2nd Edition, 2009, Springer

Reference Books:

1. Bruce Alberts, Alexander Johnson, Julian Lewis, Martin Raff, Keith Roberts, Peter Walter, Molecular Biology of the Cell, 5th Edition, 2007, Garland Science
2. Karp, G, Cell and Molecular Biology: Concepts and Experiments, 7th edition, Wiley, 2013.
3. Paul Davidovits, Physics in Biology and Medicine, 3rd Edition, 2007, Academic Press
4. Colin Ratledge, Bjorn Kristiansen, Basic Biotechnology, 3rd Edition, 2006, Cambridge University Press
5. Suraishkumar G. K., Biology for Engineers, Oxford University Press, 2019.