

### (C) Multidisciplinary Courses to be offered

Sl. No.	Sem	Type of Course	Name of Course	Credits	Marks
1.	I	MDC-1	Phycology and Microbiology	3	100
2.	II	MDC-2	Biomolecules and Cell Biology	3	100
3.	III	MDC-3	Updating Soon	3	100

Sub Total = 09

#### SEMESTER -II

#### MDC-2 (T): Bio molecules and Cell Biology

#### Course Objective

Students should be able to understand the Micromolecules. The accurate measurement and monitoring of the concentration of specific Bio molecules in a living system are crucial to ensure the well-being of the cells and living organism.

#### Course Outcomes

After the completion of the course, the student will be able to:

- CO1: Describe the structure and properties of bio molecules
- CO2: Explain the classification, properties and functions of enzymes
- CO3: Describe cell wall, cell membrane and the structure, chemistry and functions of cellular organelles
- CO4: Explain the eukaryotic cell cycle, mitotic and meiotic cell divisions; and regulation of cell cycle

MDC 2 (T) Bio molecules and Cell Biology (Theory: 2 credits)		
Unit	Topics to be covered	No. of Lectures
1	Bio molecules- Structure, classification and function of Carbohydrates, Amino acids, Protein	06
2	Enzymes- Nomenclature, Classification, mode of action	04
3	Cell Biology- a. Structure of the cell as seen under Electron Microscope b. Characteristics of Prokaryotic & Eukaryotic Cells c. Structure of Chromosome d. Mitosis and meiosis	10
<b>TOTAL</b>		<b>20</b>

#### Suggested Readings:

1. Campbell, MK (2012) Biochemistry, 7<sup>th</sup> ed., Published by Cengage Learning.
2. Campbell, PN and Smith AD (2011) Bio chemistry Illustrated, 4<sup>th</sup> ed., Published by Churchill Living stone.
3. Tymoczko JL, Berg JM and Stryer L (2012) Biochemistry: A short course, 2<sup>nd</sup> ed., W.H.Freeman
4. Berg JM, Tymoczko JL and Stryer L (2011) Bio chemistry, W.H. Freeman and Company.
5. Nelson DL and Cox MM (2008) Lehninger Principles of Biochemistry, 5<sup>th</sup> Edition., W.H. Freeman and Company.
6. Karp, G. (2010). Cell Biology, John Wiley & Sons, U.S.A .6<sup>th</sup> edition.
7. Hardin, J., Becker, G.,S Kliensmith, L.J.(2012). Becker's World of the Cell, Pearson Education Inc. U.S.A. 8<sup>th</sup> edition.
8. Cooper, G.M .and Hausman, R.E.(2009)The Cell: A Molecular Approach, 5<sup>th</sup>edition. ASM.
9. Becker, W.M.,Kleinsmith, L.J.,Hardin, J.andBertoni, G.P.(2009)TheWorld of the Cell 7<sup>th</sup> edition. Pearson Benjamin Cummings Publishing, San Francisco.

MDC-2 (P) Bio molecules and Cell Biology (Practical: 1 credit)	No. of Classes
1. Estimation of Carbohydrates, Amino acid and Protein 2. Study of different stages of mitosis and meiosis	20

*Assoc*

*Mlugh*

*Shing*

*Q. N. S.*