Elective subject-6 name with code: 13PH0808 Cell and Molecular Biology

Course Objective
Cell biology is a branch of biology that studies cell-their physiological properties, their structure, the organelles they contain, interactions with their environment, their life cycle, division, death and cell function. This is done both on a microscopic and molecular level. Cell biology research encompasses both the great diversity of single-celled organisms like bacteria and protozoa, as well as the many specialized cells in multi-cellular organisms such as humans, plants, and sponges.

Course Outcomes
Upon completion of the course, the student shall be able to
1. Summarize cell and molecular biology history.
2. Summarize cellular functioning and composition.
3. Describe the chemical foundations of cell biology.
4. Summarize the DNA properties of cell biology.
5. Describe protein structure and function.
6. Describe cellular membrane structure and function.
7. Describe basic molecular genetic mechanisms.
8. Summarize the cell cycle.

Teaching and assessment scheme

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<tr>
<th>Teaching Scheme (Hours)</th>
<th>Credits</th>
<th>Theory/ Tutorial Marks</th>
<th>Practical Marks</th>
<th>Total Marks</th>
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<td>Tutorial</td>
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Theory syllabus

Unit-1
10 Hours

Unit-2
10 Hours
a) DNA and the flow of molecular information b) DNA Functioning c) DNA and RNA d) Types of RNA e) Transcription and Translation.

Unit-3
10 Hours

Unit-4
8 Hours

Unit-5
7 Hours

Tutorials will be based on the above syllabus.

Teaching hours: 45 Hours

Recommended references (Latest edition)
5. Rose: Industrial Microbiology.
7. Cooper and Gunn’s: Tutorial Pharmacy, CBS Publisher and Distribution.
8. Peppler: Microbial Technology.
10. N.K. Jain: Pharmaceutical Microbiology, Vallabh Prakashan, Delhi
11. Bergey's manual of systematic bacteriology, Williams and Wilkins- A Waverly company
13. RA Goldshy et. al., Kuby Immunology.