

Gujarat University
Proposed syllabus for Skill Enhancement Courses (SEC)
 First Year B.Sc. (Basic/Hons)
Semester-I
 Effective from June-2023

SEC-FCB-116 Fundamentals of Computers in Biotechnology

Course Structure with credits, hours, and marks Course Type	Course	Credit	Work hours/week	Exam hours		Total Marks
				Internal	External	
Skill Enhancement Course	SEC	2	2	30	70	100

Course Objectives:

1. Introduction of computers to biology students.
2. Create spreadsheets, charts and presentations.
3. Understanding basic tools used in handling of data
4. Acquire knowledge on primary biological database storage and retrieval

Course Outcomes:

On the completion of the course students will be able to:

1. Know the fundamental terms associated with computers and basics of primary Biological databases.
2. Know different types of MS office applications and their use in Biology.
3. Understand the basic uses and applications of computer in handling Biological data.

Assessment Methods:

- Class participation and engagement
- Quizzes and exams
- Written assignments, such as research papers or case studies
- Group projects or presentations
- Final exam or project

Unit 1: Fundamentals of Computing and Biological Data Management

- Introduction to Computers: Definition of Hardware and software
- Computer Hardware: Input devices, Output devices, Central Processing Unit (CPU), Storage devices
- Computer software: System software (Operating systems: Windows and Linux), basics of Application Software
- Biological data: Primary Biological database storage and retrieval (e.g. NCBI)
- Presentation of Biological data using various approaches (Scientific Papers, Presentations and Posters)

UNIT 2: Use of Word Processing and Spreadsheets in Biotechnology

- Introduction to different word processing software
- Exploration of features in Word processing software
- Concept of document building and types of documents in Biotechnology.
- Applications in Biotechnology: Review of Literature and preparation of research report of any disease.
- Introduction to the use of Electronic Spread Sheet
- Formulas and Function- Using basic Formulas (Autofill, AutoSum functions and absolute reference)
- Charts and Tables of biological data- Tables, Column Chart, Line Chart, Pie Chart (Create data sheet containing 50 patients visiting hospital (blood pressure, heart beat, weight, height, haemoglobin levels, sex, age and disease). Draw relevant chart and analyse the data).

REFERENCE

No.	Name	Author
1.	World wide web Design with HTML(First Edition 2010)	Tata McGraw Hill By C Xavier
2.	Web Enabled commercial application development using HTML, Javascript, DHTML and php	Ivan Bayross
3.	The Complete Reference HTML and CSS (Fifth Edition)	Thomas A Powell
https://www.scielo.cl/scielo.php?script=sci_arttext&pid=S0717-34582004000300001		

WEB SOURCES

1. <http://www.tutorialspoint.com/ht...>
2. <https://www.udemy.com/learn-html...>
3. HTML 5 Cheat Sheet (PDF) - Smashing Magazine
4. <http://html5please.com/>
5. <http://diveintohtml5.info>