



INSTRUCTION DIVISION
SECOND SEMESTER 2022-2023
Course Handout

Dated: 08.1.2024

Course No : BIO G570
Course Title : RECENT DEVELOPMENTS IN BIOLOGY
Instructor-In-Charge : RUCHI JAIN DEY

1. Course Description:

Recent developments in the field of biological sciences/life sciences encompass the areas of neurobiology, neuropsychiatry, mental health, medical biology, animal biotechnology, biochemistry, microbial technology, environmental biotechnology, and interdisciplinary areas.

2. Scope & Objective:

The students will be exposed to recent advances/research in the area including but not restricted to animal, plant or microbial systems. There will be an emphasis placed on understanding the applications and research approaches to the selected topics.

3. Text Book and Reference Book:

This course will be taught entirely from journal articles (review articles and research papers) and relevant book chapters (wherever applicable).

4. Course plan:

Lect. No.	Learning objective	Topics to be covered	Course material
1	Getting introduced to the subject and course	Orientation to the course, expectations from the course, general discussions on recent developments in biology	Review/research articles/book chapters. All material will be provided
2-5	Recent advances in biomedical sciences	Recent advances in cancer biology, infectious diseases, and metabolic diseases	Review/research articles/book chapters. All materials will be provided
6-9	Recent developments in agriculture biotechnology	Transgenic technology in crops, genetically modified foods, use of plants for manufacturing biomolecules.	Review/research articles/book chapters. All materials will be provided

10-12	Recent advances in environmental and microbial technology	Recent research on environmental impact on health and agriculture, industrial microbiology, and downstream processing	Review/research articles/book chapters. All materials will be provided
12-14	Recent advances in the prevention of neuropsychiatric disorders	Focus on research and clinical trials for the development of novel compounds, interventions, and methods that target shared features across the spectrum of neurodegenerative diseases	Review/research articles/book chapters. All materials will be provided
14-16	Recent advances in Biosensor Technology for Potential application	Electrochemical, fluorescence tagged, nanomaterials, silica or quartz-based biosensor for various biomedical and environmental applications	Review/research articles/book chapters. All materials will be provided

5. Evaluation scheme:

Component	Duration	Weightage %	Date & Time	Venue	Remarks
Mid-semester Test	90 Min.	30	14/03/23		CB
Thematic Science outreach assignment* (1)	Variable	30			OB
Comprehensive	180 Min.	40	10/05/23		CB (30%) + OB (10%)
<ul style="list-style-type: none"> Assignment will <u>not be in form of regular ppt</u>, but will be a creative expression of research theme. This assignment will be performed in teams of 2. You can use any one of the following media for presenting research on assigned topic: Create a cartoon/comic strip/Write a script for a 5 min short reel/Create a graphical children story book explaining research (to school children) /Design a model/Write a poem/song & dance to present the research/ Do a Newscast announcing a major breakthrough that came through the research. The goal is to understand the recent developments in research themes deeply, yet present them in <u>simple & fun formats to a layman</u> without making it too complex. 					

6. Grading Policy:

Award of grades would be guided by the histogram of marks. If a student misses even a single component entirely or does not give sufficient opportunity for being assessed, he/she may be awarded an 'NC' report regardless of his/her final total score in the course (see Clause 4.19 of *BITS Academic Regulations*).

7. Office Consultation:

By prior appointment obtained in person or by email (ruchij80@hyderabad.bits-pilani.ac.in).

8. Make-up Policy:



Only medical emergencies with evidence will be considered for make-up ONLY for mid-sem and Comprehensive examination. For regulations about make-up flexibility, students are advised to refer to Clause 4.07 of *BITS Academic Regulations*

9. Course Announcements and Notices:

Announcements pertaining to the course will be made in the lecture/tutorial class and/or on CMS. In some cases, printed notices shall be displayed on the notice board of only the Department of Biological Sciences.

10. Academic Honesty and Integrity Policy: Academic honesty and integrity are to be maintained by all the students throughout the semester and no type of academic dishonesty is acceptable.

**INSTRUCTOR-IN-CHARGE
BIO G570**

