HONOURS CERTIFICATE PROGRAMME PROPOSAL
AY 2022-2023
Department: Caius Research Laboratory

1. Frontiers in Biology Research: An interdisciplinary approach (One credit).
2. Research Methodology and Analytical Techniques (Basic Level)
3. Research Methodology and Analytical Techniques (Advanced Level)

	General Information of the Activity	
1.	**Department and Hub**	Caius Research Laboratory Biological Science
2.	**Title of the Activity**	**Frontiers in Biology Research: An interdisciplinary approach**
3.	**Name of the Professor taking the course and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
4.	**Name/s of the Resource person/s**	From different fields of Biology/Physics and Chemistry
5.	**Name of the Dept Coordinator and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
6.	**Name of the Hub Coordinator and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
7	**Number of credits for the activity and number of hours**	one
8	**Fees**	750/-
9	**Eligibility**	FY, SY, TY Students of Science faculty
10	**Number of students**	20
11	**Duration and Time**	August to December 2022, 6-7 one – two hours lectures during holidays in online mode

	Details of the Activity
1	**Title:** Frontiers in Biology Research: An interdisciplinary approach
2	**Learning Objectives:** a. Introduce students to different areas of research in Biology b. Inculcate the spirit of research in students. c. To introduce the students to different techniques in research.
3	**Learning Outcomes:** **After Completing the course, the students will be able to** a. Appreciate the interdisciplinary approach to research in different areas of Biology b. Understand some techniques used in research c. Apply the knowledge gained to understand their courses better
4	**Description** The program is a lecture- workshop series, aimed to introduce the different tools and techniques in frontier areas of Biology**.** An interdisciplinary approach involving Physics, Chemistry etc.
5	**Evaluation:** Continuous, Report at the end of the program
5	**Modules if any:** **Different techniques and fields of biology will be covered:** Biotechnology. Immunology, Genetics, Nanotechnology etc. to name a few.

	General Information of the Activity	
1.	**Department and Hub**	Caius Research Laboratory
2.	**Title of the Activity**	Research Methodology and Analytical Techniques (Basic Level)
3.	**Name of the Professor taking the course and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
4.	**Name/s of the Resource person/s**	Dr. Priya Sundarrajan, Dr. Vishwas Sarangdhar
5.	**Name of the Dept Coordinator and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
6.	**Name of the Hub Coordinator and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
7	**Number of credits for the activity and number of hours**	Two, Thirty
8	**Fees**	Rs. 1500/-
9	**Eligibility**	FY, SY, TY Students of Science
10	**Number of students**	10-15
11	**Duration and Time**	September to January
	Details of the Activity	
1	**Title:**	
2	**Learning Objectives:** 1. Introduction to good laboratory practice and safety in lab 2. Introduction to concepts of research 3. Calibration of micropipette 4. Testing accuracy of pipetting and use of UV spectrophotometer 5. Concept of Mole and preparation of solutions	

3	**Learning Outcomes:** The students who have successfully completed this course should: ● have an understanding of the fundamental principles of research ● be able to identify, apply and assess principles of scientific experimentation
4	**Description:** The course involves introducing students to Design of Experiment and application of analytical techniques to research.
5.	**Evaluation:** Continuous, Design of Experiment and application of analytical techniques, submission of report
6,	**Modules if any:** **None**

	General Information of the Activity	
1.	**Department and Hub**	Caius Research Laboratory
2.	**Title of the Activity**	Research Methodology and Analytical Techniques (Advanced Level)- Summer School Gene Cloning and protein crystallization
3.	**Name of the Professor taking the course and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
4.	**Name/s of the Resource person/s**	Dr. Priya Sundarrajan, Dr. Vishwas Sarangdhar
5.	**Name of the Dept Coordinator and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
6.	**Name of the Hub Coordinator and Email address**	Dr. Priya Sundarrajan Email: priya.s@xaviers.edu
7	**Number of credits for the activity and number of hours**	Two, Thirty
8	**Fees**	Rs. 2500/-
9	**Eligibility**	SY, TY Students of Science
10	**Number of students**	10-15
11	**Duration and Time**	The course will be conducted in April after exams
	Details of the Activity	
1	**Title:** Research Methodology and Analytical Techniques (Advanced Level)- Summer School	

2	**Learning Objectives:** ● have an understanding of the fundamental principles of research be able to identify, apply and assess principles of scientific experimentation
3	**Learning Outcomes:** The students who have successfully completed this course should: a. be able to design experiments b. Understand the concept and carry out gene cloning c. Understand the concept and carry out protein crystallisation
4	**Description:** The course involves introducing students to Design of Experiment and application of analytical techniques to research. – Gene cloning and protein crystallization.
5.	**Evaluation:** Continuous, Design of Experiment and application of analytical techniques, submission of report
6,	**Modules if any:** **None**