

**HONOURS CERTIFICATE PROGRAMME PROPOSAL
AY 2021-2022**

General Information of the Activity		
1.	Department and Hub	PG Department of Biotechnology Biological Sciences Hub
2.	Title of the Activity	Exploring Biology Using Computational Tools and Software
3.	Name of the Professor taking the course and Email address	Ms. Norine D'Souza norine.dsouza@xaviers.edu
4.	Name/s of the Resource person/s	-
5.	Name of the Dept Coordinator and Email address	Dr. Shiney Peter shiney.peter@xaviers.edu
6.	Name of the Hub Coordinator and Email address	Dr. Priya Sunderrajan priya.s@xaviers.edu
7	Number of credits for the activity and number of hours	one
8	Fees	Rs. 1000/-
9	Eligibility	The activity will be open for TY Biological Sciences students and TY chemistry students with any biological sciences combination till SY. Interested SY students can also apply. A device with a stable internet connection will be advisable for getting the maximum benefit of the course.
10	Number of students	Ten
11	Duration and Time	Once a week (7 weeks) Wednesday- 5:00pm -7:00pm

Details of the Activity	
1	Title:
2	Learning Objectives: The course is designed to expose UG students to a variety of resources and their utility in solving concept-based and research-based queries.
3	Learning Outcomes: <ol style="list-style-type: none"> 1. The student will learn the basic concepts of bioinformatics, biological data analysis using problem-based approach. 2. Student will be equipped with the skills on biological data analysis using online tools, apps, and software. 3. Will be apply the exploration of the databases to gain further insights into biological science areas.
4	Description: Integration of computers in learning biology has become a necessity due to recent advances involving high-throughput techniques for data generation and analysis. Undergraduate students increasingly need training in methods related to finding and retrieving information stored in vast databases. An introductory course on various computational tools and software for biological concepts is being offered by the PG Department of Biotechnology to address this need.
5	Modules if any <ol style="list-style-type: none"> 1. Computational software and tool aided visualization of macromolecules 2. Molecular insights into model organisms (prokaryotes and eukaryotes) 3. Exploring the world of viruses using computational tools and resources 4. Exploring biochemical pathways using computational tools 5. Introduction to OMICS in Biological Science 6. Role of computers in deciphering advances in biological systems.