SCHOOL OF BIOTECHNOLOGY

PROGRAMME CODE: BT5C

PROGRAMME TITLE: MASTER OF SCIENCE (M.Sc.) BIOINFORMATICS

OBJECTIVES:

The broad objectives of the M.Sc. Bioinformatics programme are as follows:

- To gain and apply knowledge of Bioinforamtics comprised of science and Engineering components with IT skills.
- To generate skilled and intellectual human resource in Bioinformatics and to develop a state of the art facilities to conduct experimentation meeting global standards.
- To provide specialized high quality education by integrating traditional and modern scientific techniques in teaching-learning process.
- To explore new frontiers and improve quality, talent and skills of students through practical trainings.

ELIGIBILITY:

Bachelor's degree under 10+2+3 pattern of education in Physical/ Biological/Agricultural/ Veterinary and Fishery Sciences/ Pharmacy/ Engineering/ Technology, 4-years B.Sc. (Physician Assistant Course); OR Medicine (MBBS) OR B.D.S. with at least 55% marks

AGE LIMIT: No Age Limit.

ADMISSION PROCEDURE:

The admissions will be done as per merit in the entrance test conducted by the university.

SEATS: 24 (reservation as per state Govt. rules).

DURATION: Four Semesters (Two Years).

FEE STRUCTURE (2020-22):

Semester	Academic Fee	Development & Maintenance Fee	Students' Services Fee		Examination Fee	Total (Rs.)	
			Boys	Girls		Boys	Girls
First	17500	5500	3300	3111	2500	28800	28611
Second	17500	5500	2911	2722	2500	28411	28222
Third	17500	5500	3300	3111	2500	28800	28611
Fourth	17500	5500	2911	2722	2500	28411	28222

- Caution money (Refundable) of Rs. 4000/- will be charged additionally in the first semester.
- Alumni Fee of Rs. 500/- will be charged extra in the first semester.

- If a student repeats a paper(s) in a semester, an additional fee of Rs.500/- per paper shall be payable.
- For NRI/ FN/ PIO Candidates, a fee of US$ 3500 Per Annum shall be payable on yearly basis. They will have to pay a refundable deposit of US$ 500 once at the time of admission.
- Hostel Fee and Central Library Fee will be extra.

PROGRAMME STRUCTURE (2020-22):

First Semester:

Code	Title	Credits (L T P)
CORE COURSES		
BT BI 501	Basic Mathematics	03
BT BI 511	Computer fundamentals and Biostatistics	03
BT BI 521	Bio-molecules	03
BT BI 531	Cell and Developmental Biology	03
BT BI 541	Programming in C/C++	03
BT BI 551	Molecular Biology	03
BT BI 561	Practical	06
BT BI 571	Seminar & Communication Skills	01

Second Semester:

Code	Title	Credits (L T P)
CORE COURSES		
BT BI 502	Biological Databases and Data Analysis	03
BT BI 512	Recombinant DNA Technology	03
BT BI 532	Internet & Web Based Programming (CGI PERL & HTML)	03
BT BI 572	Practical	08
BT BI 582	Seminars	02
ELECTIVE COURSES-DISCIPLINE CENTRIC (Any Two)		
BT BI 542	Immunoinformatics	1.5
BT BI 552	Genomics & Proteomics	1.5
BT BI 562	Enzyme & Enzyme Technology	1.5
ELECTIVE GENERIC: The students can choose following course or any other PG level generic course being run in this campus.		
BT BI 522	Design and Analysis of algorithms	03

Third Semester:

Code	Title	Credits (L T P)
CORE COURSES		
BT BI 601	Machine Learning Techniques & CADD	03
BT BI 611	Structural Biology and Bioinformatics	03
BT BI 631	Java Programming	03
BT BI 671	Assignments/ Practical	08
BT BI 681	Seminar(Soft Skill Development)	02

ELECTIVE COURSES-DISCIPLINE CENTRIC (Any Two)		
BT BI 641	Metabolic Engineering & System Biology	1.5
BT BI 651	Pharmacogenomics	1.5
BT BI 661	Microscopic Techniques For Image Processing	1.5
ELECTIVE GENERIC: The students can choose following course or any other PG level generic course being run in this campus.		
BT BI 621	Database management System	03

Fourth Semester:

Code	Title	Credits (L T P)
BT BI 602	Project Work	12

Note: The above programme structure can be modified as per requirement from time to time in accordance with University Ordinance No. 14.

PROGRAMME OUTCOMES:

- To equip students with the computational skills and awareness needed to process, analyse and interpret the vast amounts of biological data.
- To use existing bioinformatics resources - mainly web-based programs and databases.
- To decide and apply appropriate tools and techniques in bioinformatics.
- The program is intended to describe not only with the programming languages but it covers the proteomics, genomics, cell and molecular biology, genetic engineering, biochemical pathways etc., relevant to the improvement and development of mankind and industrial application purposes.

PROGRAMME SPECIFIC OUTCOMES:

- Design and perform experiments for investigating complex problems in the area of bioinformatics .
- To develop understanding of tools and designs of bioinformatics
- To apply information technology and computational techniques to process genomic and genetic data, as well as developing novel drug discovery and diagnostic tools.
- Able to undertake any responsibility as an individual and as a team in a multidisciplinary / cross cultural environment.