

BACHELOR OF SCIENCE (HONORS) BIOINFORMATICS

**Programme Code: BIB
Duration: 3 Years**

SESSION: 2019-2020



Programme Scheme

Faculty of Science

**CHHATRAPATI SHIVAJI MAHARAJ
UNIVERSITY PANVEL, NAVI MUMBAI**

SEMESTER I

Course Type	Course Code		L	T	P	IA	UE	Total Marks	Credits
DSC	BIBC101	Biochemistry & Metabolism	4	0	0	30	70	100	4
DSC	BIBC102	Biomolecules and Cell Biology	4	0	0	30	70	100	4
GE	**BG101	Generic Elective - I	4	0/1	4/0	30	70	100	4
AECC	ENBC101	English Communication	2	0	0	15	35	50	2
DSC	BIBC191	Biochemistry & Metabolism Lab	0	0	4	15	35	50	2
DSC	BIBC192	Biomolecules and Cell Biology Lab	0	0	4	15	35	50	2
GE	**BG191	Generic Elective – I Lab	0	1/0	0/4	15	35	50	2
		Total	14	0	12	150	350	500	20

SEMESTER II

Course Type	Course Code		L	T	P	IA	UE	Total Marks	Credits
DSC	BIBC201	Introduction to Bioinformatics	4	0	0	30	70	100	4
DSC	BIBC202	Plant and Animal Physiology	4	0	0	30	70	100	4
GE	CHC201	Generic Elective - II	4	0/1	4/0	30	70	100	4
AECC	ESBC201	Environmental Studies	2	0	0	15	35	50	2
DSC	BIBC291	Introduction to Bioinformatics Lab	0	0	4	15	35	50	2
DSC	BIBC292	Plant and Animal Physiology Lab	0	0	4	15	35	50	2
GE	**BG291	Generic Elective – II Lab	0	1/0	0/4	15	35	50	2
		Total	14	0	12	150	350	500	20

SEMESTER III

Course Type	Course Code		L	T	P	IA	UE	Total Marks	Credits
DSC	BIBC301	General Microbiology	4	0	0	30	70	100	4

DSC	BIBC302	Concepts in Bioinformatics	4	0	0	30	70	100	4
DSC	BIBC303	Enzymology	4	0	0	30	70	100	4
GE	BIBG301	Generic Elective – III	4	0/1	4/0	30	70	100	4
SEC	BIBS301	Skill Enhancement Course –I	0	0	2	15	35	50	2
DSC	BIBC391	General Microbiology Lab	0	0	4	15	35	50	2
DSC	BIBC392	Concepts in Bioinformatics Lab	0	0	4	15	35	50	2
DSC	BIBC393		2	0	0	15	35	50	2
GE	BIBG391	Generic Elective – III	0	1/0	0/4	15	35	50	2
		Total	14	0	12	150	350	500	24

SEMESTER IV

Course Type	Course Code		L	T	P	IA	UE	Total Marks	Credits
DSC	BIBC401	Molecular biology	4	0	0	30	70	100	4
DSC	BIBC402	Computer aided drug design.	4	0	0	30	70	100	4
DSC	BIBC403	Fermentation technology	4	0	0	30	70	100	4
GE	BIBG401	Generic Elective - IV	4	0/1	4/0	30	70	100	4
SEC	BIBS401	Skill Enhancement course II	2	0	0	15	35	50	2
DSC	BIBC491	Molecular biology lab	0	0	4	15	35	50	2
DSC	BIBC492	Computer aided drug design. Lab	0	0	4	15	35	50	2
DSC	BIBC493		0	0	0	15	35	50	2
GE	BIBG491	Generic Elective IV Lab	0	0	4	15	35	50	2
		Total	14	0	12	150	350	500	24

SEMESTER V

Course Type	Course Code		L	T	P	IA	UE	Total Marks	Credits
DSC	BIBC501	Genetics	4	0	0	30	70	100	4

DSC	BIBC502	Structural Bioinformatics	4	0	0	30	70	100	4
DSE	BIBE501	Discipline Specific Elective	4	0	4/0	30	70	100	4
DSE	BIBE502	Discipline Specific Course II	4	0	4/0	30	70	100	4
DSC	BIBC591	Genetics Lab	0	0	4	15	35	50	2
DSC	BIBC592	Structural Bioinformatics lab	0	0	4	15	35	50	2
DSE	BIBE591	Discipline Specific Elective I Lab	0	0	4	15	35	50	2
DSE	BIBE592	Discipline Specific Elective II Lab	0	0	4	15	35	50	2
		Total	16	0	16	180	420	600	24

SEMESTER VI

Course Type	Course Code		L	T	P	IA	UE	Total Marks	Credits
DSC	BIBC601	Immunology	4	0	0	30	70	100	4
DSC	BIBC602	Genomics and proteomics	4	0	0	30	70	100	4
DSE	BIBE601	Discipline Specific Elective 3	4	0/1	4/0	30	70	100	4
DSE	BIBE602	Discipline Specific Elective 4	4	0	4/0	30	70	50	4
DSC	BIBC691	Immunology	0	0	4	15	35	50	2
DSC	BIBC692	Genomics and proteomics	0	0	4	15	35	50	2
DSE	BIBE691	Discipline Specific Elective 3	0	0	4	15	35	50	2
DSE	BIBE692	Discipline Specific Elective 4	0	0	4	15	35	50	2
		Total	16	0	16	180	420	600	24

List of Generic Electives offered by Department of Bioinformatics for Other Department Students

Semester	Course Code	Generic Electives	(L-T-P)	Credits
I	Generic elective 1	Concepts in Bioinformatics	4-0-4	6
I		Introduction to bioinformatics	4-0-4	6
II	Generic elective 2	Immunology	4-0-4	6
II		Genomics and proteomics	4-0-4	6
III	Generic elective 3	Genetics	4-0-4	6
III		Structural Bioinformatics	4-0-4	6
IV	Generic elective 4	Molecular biology	4-0-4	6
IV		Computer aided drug design.	4-0-4	6

Ability Enhancement Compulsory Courses (AECC)

Semester	Offering Department	Course Code (T+P)	Course Name	(L-T-P)	Credits
I	English	ENBC101	English Communication	2-0-0	2
II	Basic Sciences	ESBC201	Environmental Studies	2-0-0	6

List of Department-Specific Electives (DSE-1 to DSE-4) offered by Department for students in B.Sc. (Hons.) (4 to be selected, 2 in each of 5th and 6th semester)

Semester	Course Code (T+P)	Course Name	(L-T-P)	Credits
V	BIBE501+BIBE591	Chemoinformatics	4-0-2	6
V	BIBE502+BIBE592	-Programming In Java	4-0-2	6
V	BIBE503+BIBE593	I.P.R. Entrepreneurship Bioethics & Biosafety	4-0-2	6
VI	BIB601+BIBE691	Algorithms For Bioinformatics	4-0-2	6
VI	BIB602+BIBE692	Bioenergy And Biofuels	4-0-2	6
VI	BIBE603+BIBE693	Nanobiotechnology	4-0-2	6

List of Skill Enhancement Course (SEC-1 & SEC-2) offered by Department (Any 2 to be selected)

Semester	Course Code	Course Name	(L-T-P)	Credits
III	BIBS301+BIB S391	Basics Of Forensic Science	4-0-0	4
III	BIBS302+BIB S392	Industrial Fermentation	4-0-0	4
IV	BIBS401+BIB S491	Basics Of Neuroscience Theory	4-0-0	4
IV	BIBS402+BIB S492	Animal Biotechnology Theory	4-0-0	4

Department Specific Course (DSC), Department Specific Elective (DSE), Generic Elective Course (GE), Skill Enhancement Course (SEC), Ability Enhancement Core Course (AECC)