5-year Dual Degree M. S. in Biological Sciences Curriculum

Semester I

No.	Title	L	T	P	C	Cat.
MA1010	Calculus I – Functions of One Variable	3	0	0	3	SMA
PH1010	Physics I	3	0	0	3	SPH
CY 1010	Chemistry: Structure, Bonding & Reactivity	4	0	0	4	SCY
ID1100	Concepts in Engineering Design	2	0	0	2	BET
CS1100/ME1100	Computational Engineering/Thermodynamics	3	0	0	3	BET
BT1010	Introduction to Biological Sciences and Engineering	2	0	0	2	PMT
WS1010	Workshop I	0	0	6	4	BES
PH1030	Physics Laboratory I	0	0	3	2	SPH
CY1030	Chemistry Laboratory I	0	1	3	3	SCY
	Total	17	1	12	26	

Semester II

No.	Title	L	T	P	C	Cat.
MA1020	Calculus II – Functions of Several Variables	3	0	0	3	SMA
PH1020	Physics II	3	0	0	3	SPH
CS1100/ME1100	Computational Engineering/Thermodynamics	3	0	0	3	BET
EE1100	Basic Electrical Engineering	3	0	0	3	BET
BT1020	Material and Energy Balances	4	0	0	4	PMT
BT1022	Organic chemistry in Biology	3	1	0	4	PMT
PH1040	Physics Lab. II	0	0	3	2	SPH
	Total	19	1	3	22	

Semester III

No.	Title	L	T	P	C	Cat.
ID1200	Ecology and Environment	2	0	0	2	BET
HS	Humanities I (Elective)	3	0	0	3	HSS
MA	Mathematics III (Elective)	3	0	0	3	SMA
BT2010	Microbiology	3	0	0	3	PMT
BT2030	Biochemistry	3	0	0	3	PMT
BT2012	Genetics	3	0	0	3	PMT
BT2112	Microbiology Laboratory	0	0	6	4	PML
	Total	17	0	6	21	

Semester IV

No.	Title	L	T	P	C	Cat.
HS	Humanities II (Elective)	3	0	0	3	HSS
BT2020	Computational Techniques in Biosystems	2	0	3	4	PMT
BT2022	Biostatistics	3	1	0	4	PMT
BT2042	Fundamentals of Biophysical Chemistry	3	0	0	3	PMT
BT2062	Analytical Techniques in Biotechnology	3	1	0	4	PMT
BT2082	Cell Biology	3	0	0	3	PMT
BT2122	Biochemistry Laboratory	0	0	6	4	PML
	Total	17	2	9	25	

Semester V

No.	Title	L	T	P	C	Cat.
	Minor Elective I (Core)	3	0	0	3	MNS
BT3012	Molecular Biology	3	0	0	3	PMT
BT3032	Evolutionary Biology	3	1	0	4	PMT
BT3052	Membrane Biology & Signal Transduction	3	0	0	3	PMT
BT3072	Immunology	3	0	0	3	PMT
BT3110	Biomolecular Analysis Laboratory	0	0	6	4	PML
	Total	**15**	**1**	**6**	**20**	

Semester VI

No.	Title	L	T	P	C	Cat.
	Minor Elective II (Core)	3	0	0	3	MNS
	Free Elective I	3	0	0	3	*
BT3020	Structural Biology	3	0	0	3	PMT
BT3022	Genomics and Proteomics	3	1	0	4	PMT
BT	Professional Elective I	3	0	0	3	PMT
BT	Professional Elective II	3	0	0	3	PMT
BT3122	Molecular Biology Laboratory	0	0	6	4	PML
	Total	**18**	**1**	**6**	**23**	
BT3900	Industrial Training (Summer)	0	0	0	2	PIT

Semester VII

No.	Title	L	T	P	C	Cat.
HS	Humanities III (Elective)	3	0	0	3	HSS
	Minor III (Elective)	3	0	0	3	MNS
	Free Elective II	3	0	0	3	*
BT4010	Bioinformatics	3	1	0	4	PMT
BT4012	Enzyme Structure and Mechanisms	3	0	0	3	PMT
BT	Professional Elective III	3	0	0	3	PMT
BT4110	Computational Biology Laboratory	0	0	6	4	PML
BT4912	Project	0	0	0	2	PMP
	Total	**18**	**1**	**6**	**25**	

Semester VIII

No.	Title	L	T	P	C	Cat.
HS	Professional Ethics (Pass/Fail)	2	0	0	2	HPF
IL4920	Industrial Lecture (Pass/Fail)	1	0	0	1	PIL
BT4020	Introduction to Research Methodology	1	0	0	1	PMT
BT	Professional Elective IV	3	0	0	3	PMT
BT	Professional Elective V	3	0	0	3	PMT
BT	Self Study (Elective)	3	0	0	3	PSS
BT4122	Chemical Biology Laboratory	0	0	6	4	PML
BT4922	Project	0	0	0	2	PMP
	Total	**13**	**0**	**6**	**19**	

Semester IX

No.	Title	L	T	P	C	Cat.
BT	Professional Elective VI	3	0	0	3	PMT
BT	Professional Elective VII	3	0	0	3	PMT
BT5912	Project	0	0	0	6	PMP
	Total	**6**	**0**	**0**	**12**	

Semester X

No.	Title	L	T	P	C	Cat.
BT	Professional Elective VIII	3	0	0	3	PMT
BT5922	Project	0	0	0	10	PMP
BT5942	Comprehensive Viva Voce	0	0	0	2	PMP
	Total	**0**	**0**	**0**	**15**	

Total = 26+22+21+25+20+25+25+19+12+15 = 210

L - Lecture; T - Tutorial; P - Practical; C - Credits
For Category codes, look at Credit requirements file