MSc Course Curriculum (2019-21 batch)

Semester I

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for
BB403	Biomolecular Spectroscopy	2	1	0	6	D. Panda		MSc, MSc-PhD
BB405	Molecular Biology	2	1	0	6	S. Patankar		MSc, MSc-PhD
BB407	Analytical Biochemistry	2	1	0	6	P. Phale		MSc, MSc-PhD
BB409	Biological Thermodynamics & Kinetics	2	1	0	6	A. Kumar, S. Maji		MSc, MSc-PhD
BB401	Mathematical methods for biologists	2	1	0	6	P. Ranjith		MSc, MSc-PhD
BB451	Biochemistry Laboratory	1	0	8	10	P. Phale		MSc, MSc-PhD
Total		11	5	8	40			

Contact Hours: 24

Credits: 40

Semester II

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for
BB400	Molecular Biophysics	2	1	0	6	P.V. Balaji		MSc, MSc-PhD
BB454	Programming for bioinformatics	0	0	4	4	P.V. Balaji		MSc, MSc-PhD
BB402	Cell Biology	2	1	0	6	S.K. Ghosh		MSc, MSc-PhD

BB404	Metabolism and Bioenergetics	2	1	0	6	A. Kumar		MSc, MSc-PhD
BB450	Biophysics Laboratory	1	0	8	10	D. Panda, S. Maji		MSc, MSc-PhD
BB452	Microbiology Laboratory	1	0	8	10	P. Phale, A. Banerjee		MSc, MSc-PhD
Total		8	3	20	42			

Contact Hours: 31

Credits: 42

Semester III

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for
BB507	Molecular Enzymology	2	1	0	6	N.S. Punekar		MSc, MSc-PhD
BB503	Genetic Engineering	2	1	0	6	K. Kondabagil		MSc, MSc-PhD
BB505	Molecular Immunology	2	1	0	6	R. Purwar, G . Subrahmanyam		MSc, MSc-PhD
BB551	Genetic Engineering Laboratory	1	0	8	10	K. Kondabagil		MSc, MSc-PhD
BB553	Bioinformatics	1	0	4	6	P. Bhaumik		MSc, MSc-PhD
	Elective I (Half Sem Course)	3	0	0	3			MSc, MSc-PhD

BB591	Project Stage I	0	0	0	4	A. Kumar*	–	MSc, MSc-PhD
Total		11	3	12	41			

Contact Hours: 24 (excluding Project Stage I)

Credits: 41

Elective I

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for
BB501	Genetics	3	0	0	3	PJ. Bhat		MSc, MSc-PhD
BB601	Introduction to Bio-nanotechnology	3	0	0	3	R. Banerjee, R. Srivastava		MSc, MSc-PhD

Semester IV

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for
	Elective II	2/3	1/0	0	6			MSc, MSc-PhD
	Elective III	2/3	1/0	0	6			MSc, MSc-PhD
BBS800	Seminar	0	0	0	4			MSc-PhD Dual
BB592	Project Stage II	0	0	0	24	A. Kumar	–	MSc, MSc-PhD
Total		4/6	2/0	0	40			

Contact Hours: 4/6 (excluding Project Stage II)

Credits: 36

Elective II & III

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for
BB602	Research Philosophy	3	0	0	6	S. Patankar		MSc, MSc-PhD
BB606	Cellular electricity: physics & modeling	3	0	0	6	R. Manchanda		MSc, MSc-PhD
BB612	Cell Mechanics and Mechanobiology	3	0	0	6	S. Sen		MSc, MSc-PhD
BB616	Cellular and Tissue Engineering	3	0	0	6	P. Tayalia		MSc, MSc-PhD
BB621	Biostatistics	3	0	0	6	S. Sen		MSc, MSc-PhD
BB628	Molecular Cell Signaling	3	0	0	6	G. Subrahmanyam		MSc, MSc-PhD
BB630	Industrial Microbiology	3	0	0	6	N.S. Punekar		MSc, MSc-PhD
BB632	Topics in Biotechnology II	3	0	0	6	D. Panda*, S. Maji		MSc, MSc-PhD
BB638	Topics in Evolution	3	0	0	6	K. Kondabagil		MSc, MSc-PhD

BB642	Protein Crystallography	3	0	0	6	P. Bhaumik		MSc, MSc-PhD
BB673	Mathematics for Biologists	3	0	0	6			MSc, MSc-PhD
CH504	Computational Chemistry	2	1	0	6			MSc, MSc-PhD
CH508	Bioorganic Chemistry	2	1	0	6			MSc, MSc-PhD
CH524	Bioinorganic Chemistry	2	1	0	6			MSc, MSc-PhD
CH540	Drugs and Biologically Active Compounds	2	1	0	6			MSc, MSc-PhD
CH584	Biophysical Chemistry	2	1	0	6			MSc, MSc-PhD
CL644	Modeling and Analysis of Bioprocesses	2	1	0	6			MSc, MSc-PhD
ES656	Bioremediation: Principles & Applications	3	0	0	6			MSc, MSc-PhD

Semester V

(applicable for students who switch from 2-year MSc to MSc-PhD dual degree program)

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for

	Elective IV	3/2	0	0/4	6/8			MSc-PhD Dual
	Elective V	3	0	0	6			MSc-PhD Dual
HS791 / BB792	Communication Skills	2	0	0	PF	A. Kumar*		MSc-PhD Dual
BB 701	Research Proposal	0	0	0	10	A Banerjee		MSc-PhD Dual
Total		8/7	0	0	22/24			

Contact Hours: 8/7 (excluding Project Stage II)

Credits: 22/24

Elective IV & V

Code	Course Title	L	T	P	C	Instructor(s)	Slot	Course for
BB607	Proteomics: Principles and Techniques	3	0	0	6	S. Srivastava		MSc-PhD Dual
BB611	Cell Cycle and Epigenetics	3	0	0	6	S.K. Ghosh		MSc-PhD Dual
BB617	Biophysical Chemistry	3	0	0	6	A. Kumar, S. Maji		MSc-PhD Dual
CH825	New Interfaces of Inorganic Chemistry with Biology	3	0	0	6			MSc-PhD Dual
CH831	Advanced Laboratory Techniques	2	0	4	8			MSc-PhD Dual