



**2020**

# SYLLABUS

*School of Natural Sciences*

---

**M.Sc. in  
Biotechnology  
under UGC – CBCS**

---



# M.Sc. Biotechnology Course Structure

Category definition with credit breakup

Semester	Credit					
	CC	DSE	GE	SEC	USC	Total/Sem
First	20	4	4	1	2	31
Second	20	4		1	2	27
Third	24			1	2	27
Fourth	12			1	2	15
Total Credit/ Course	76	8	4	4	8	
<b>Total Credit</b>						<b>100</b>

CC: Core Courses; GE: General Elective; SEC: Skill Enhancement Courses;  
DSE: Discipline Specific Elective; USC: University specified course

## First Year

Category	Course name	Credit	Teaching Scheme		
			L	T	P
<b>Semester – I</b>					
CC – 1	Cell Biology and Cell Signaling	4	3	1	0
CC – 2	Genetic Engineering	4	3	1	0
CC – 3	Molecular Biology	4	3	1	0
CC – 4	Fundamentals of Microbiology	4	3	1	0
CC – 5	M.Sc. Biotechnology Practical – I	4	0	0	8
DSE – 1	Chemistry of Biomolecules	4	3	1	0
GE - 1	Generic Elective	4	4	0	0
USC – 1	Foreign language – I	2	2	0	0
SEC – 1	Mentored Seminar – I	1	1	0	0
<b>Total Credit = 31</b>			<b>Teaching Hour = 35</b>		
<b>Semester – II</b>					
CC – 6	Enzymes and Metabolism	4	3	1	0
CC – 7	Cellular Immune System	4	3	1	0
CC – 8	Evolutionary Biology	4	3	1	0
CC – 9	Fundamentals of Genetics	4	3	1	0
CC – 10	M.Sc. Biotechnology Practical – II	4	0	0	8
DSE – 2	Biophysics	4	3	1	0
USC – 2	Foreign language – II	2	2	0	0
SEC – 2	Mentored Seminar – II	1	1	0	0
<b>Total Credit = 27</b>			<b>Teaching Hour = 31</b>		

## Second Year

Category	Course name	Credit	Teaching Scheme		
			L	T	P
<b>Semester -III</b>					
CC – 11	Fermentation and Bioprocess Technology	4	3	1	0
CC – 12	Bioinformatics and Biostatistics	4	3	1	0
CC – 13	Developmental Biology	4	3	1	0
CC – 14	Pharmaceutical Science and Drug Delivery	4	3	1	0
CC – 15	Advanced Biotechnology and Tissue Culture	4	3	1	0
CC – 16	M.Sc. Biotechnology Practical – III	4	0	0	8
USC – 3	Foreign language – III	2	2	0	0
SEC – 3	Mentored Seminar – III	1	1	0	0
<b>Total Credit = 27</b>			<b>Teaching Hour = 31</b>		
<b>Semester – IV</b>					
CC – 17	Biotechnology Master Project / Dissertation	12	0	0	24
USC – 4	Foreign language – IV	2	2	0	0
SEC – 4	Biotechnology Master Seminar	1	1	0	0
<b>Total Credit = 15</b>			<b>Teaching Hour = 27</b>		