

Faculty of Science, Technology and Architecture, School of Engineering
Department of Biotechnology and Chemical Engineering

Degree: B. Tech. Computer Science and Bioscience

Total Credit: 160

Third Semester						Fourth Semester					
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
MEE2001	Engineering Economics	3	0	0	3	MAS2001	Statistics & Probability	3	0	0	3
MBB21XX	Management of Technology	3	0	0	3	CSB2201	Object Oriented Programming Systems	3	1	0	4
CSB2101	Cell Biology and Biochemistry	3	0	3	4	CSB2202	Design and Analysis of Algorithms	3	1	0	4
CSB2102	Genetics and Molecular Biology	3	1	0	4	CSB22XX	Flexi Core- 2	3	1	0	4
CSB2103	Data Structures and Algorithms	3	1	0	4	CSB22XX	Program Elective 1	3	0	0	3
CSB212X	Flexi Core- 1	3	1	0	4	XXX00XX	Open Elective 1	3	0	0	3
CSB2131 / CSB2132	R Programming Lab/ Relational Database Management System Lab	0	0	3	1	CSB2230	Object Oriented Programming Systems Lab	0	0	3	1
CSE2130	Data Structures and Algorithms Lab	0	0	3	1	CSE2231	Design and Analysis of Algorithms Lab	0	0	3	1
CSB2170	Project-based Learning 1	0	0	2	1	CSB2270	Project-based Learning 2	0	0	2	1
		18	3	11	25			18	3	8	24
	Total Contact Hours (L+T+P)	32					Total Contact Hours (L+T+P)	29			

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Fifth Semester						Sixth Semester						
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C	
CSB3101	Bioinformatics	3	0	2	4	CSB3201	Computational Biology	3	1	0	4	
CSB3102	Artificial Intelligence and Machine Learning	3	1	0	4	CSB32XX	Program Elective 4	3	0	0	3	
CSB312X	Flexi Core- 3	3	1	0	4	CSB32XX	Program Elective 5	3	0	0	3	
CSB31XX	Program Elective 2	3	0	0	3	CSB32XX	Program Elective 6	3	0	0	3	
CSB31XX	Program Elective 3	3	0	0	3	XXX00XX	Open Elective 3	3	0	0	3	
XXX00XX	Open Elective 2	3	0	0	3	CSB3202	Professional Practice	0	0	2	1	
CSB3130	Biostatics Lab	0	0	3	1	CSB3230	Computational Biology Lab	0	0	4	2	
CSB3131	Artificial Intelligence and Machine Learning Lab	0	0	3	1							
CSB3170	Project-based Learning 3	0	0	2	1	CSB3270	Project-based Learning 4	0	0	6	3	
		18	2	10	24			15	1	12	22	
	Total Contact Hours (L+T+P)	30					Total Contact Hours (L+T+P)	28				

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Seventh Semester						Eighth Semester						
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C	
CSB41XX	Program Elective 7	3	0	0	3	CSB4270	Major Project	0	0	24	12	
CSB41XX	Program Elective 8	3	0	0	3							
XXX00XX	Open Elective 4	3	0	0	3							
XXX00XX	Open Elective 5	3	0	0	3							
CSB4170	Internship (Industry or Research)	0	0	2	1							
		12	0	2	13			0	0	24	12	
	Total Contact Hours (L+T+P)	14					Total Contact Hours (L+T+P)	24				

Flexi Core

Flexi Core 1	Flexi Core 2	Flexi Core 3
CSB2120 R Programming CSE2121 Relational Database Management System	CSB2220 Genetic Engineering CSB2221 Software Engineering	CSB3120 Pharmaceutical Biotechnology CSB3121 Protein Engineering CSB3122 Bio-perl

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Program Electives			
IV	V	VI	VII
CSB2240: Structural and Sequence Analysis	CSB3140: "Soft Computing"	CSB3241: Transcriptomics and Gene Expression Informatics	Example - PE 7 CSB4140: Python Programming for Biosciences
CSB2241: Immunodiagnosics & Vaccine Manufacturing	CSB3141: Information System Security	AIM3241: Natural Language Processing	CSB4141: Legal and Ethical Aspects of Health Informatics
CSB2242: Internet of things	CSB3142: Information System Auditing, Control, and Assurance	AIM3243: Artificial Intelligence in Cyber Security	CSB4142: Genomics and Proteomics
	CSB3143: Advanced Internet Technologies	CSB3242: Computer Vision in Biomedicine	CSB4143: AI and Systems Biology in Precision Medicine
	CSB3144: Deep Learning	AIM3244: Explainable AI	
	CSB3145: Foundations of Blockchain Technology	AIM3245: Generative AI	