

CURRICULUM- B.Tech Computational Biology

Semester 1						
	Code	Course	L	T	P	Credits
1	MA 101	Basic Math (Calculus & Matrices) / Basic Biology*	3	1	0	4
2		Physics (Pre to Biophysics)	2	1	2	4
3	CH 101	Chemistry (Physical & Organic)	2	1	2	4
4	ES 101	Introduction to Electrical Engineering	2	1	2	2
5	ES 102	Engineering Drawing	0	0	3	1.5
6	HS 1104	Introduction to Entrepreneurship	0	0	3	1
7	SE 101	Media Project	0	0	3	1.5
8	HS 101	English and Humanities – I	3	0	0	3
9	FL 101	French Language & Culture – I	0	2	0	0.5
		Total Credits				

***For students with Bio or math in 10+2**

Semester 2						
	Code	Course	L	T	P	Credits
1	MA 102	Genetics & Molecular Biology	2	1	2	4
2		Linear Algebra and Ordinary Differential Equations	2	1	2	4
3	CS 1201	Introduction to Computer Science	2	1	2	4
4		Microbes & Immune Systems	2	1	2	4
5	ES 103	Earth and Environmental Sciences	2	0	0	2
6	SE 102	Introduction to Enterprises & Economy	0	0	2	1

7	HS 102	Professional Ethics	0	1	0	1
8	FL 102	French Language & Culture – II	0	2	0	0.5
		Total Credits				

Semester 3						
	Code	Course	L	T	P	Credits
1		Probability & Biostatistics	2	1	2	4
2		Biophysics (incl statistical Thermodynamics)	2	1	2	4
3	CS 2101	Optimization Techniques for AI	3	0	0	3
4	CS 2104	Data Structures & Algorithms	2	2	2	5
5	XXX	Lean Start-up	0	0	3	1
6	XXX	Economics (7 Weeks)	3	0	0	1.5
7	FL 203	French Language & Culture – III	0	2	0	0.5
8	CS 2102	Programming Workshop	0	0	2	0.5
		Total Credits				

Semester 4						
	Code	Course	L	T	P	Credits
1		Genomics & NGS Technologies	2	1	2	4
2		Discrete Mathematics (Info & Graph Theory)	2	1	2	4
3		Structural Biology	2	1	2	4
4	CS 2202	Machine Learning with Python	3	0	2	4
5	CS 2203	Artificial and Computational Intelligence	2	1	2	4
6	SE 203	Design Thinking	1	0	2	2
7	XXX	Financial Accounting	3	0	0	1.5
8	FL 204	French Language & Culture – IV	0	2	0	0.5
9	CS 2205	Programming Workshop	0	0	2	0.5

			Total Credits			
--	--	--	---------------	--	--	--

Semester 5						
	Code	Course	L	T	P	Credits
1	CS 3101	Design and Analysis of Algorithms	3	1	0	4
2		Systems Biology & Networks Analysis	2	1	2	4
3	CS 3103	Database Management Systems	3	0	2	4
4	CS 3105	Object Oriented Programming	2	0	2	3
5	HS-E1	HSS + Mgmt. - Elective – I	2	0	0	2
6	FL 305	French Language & Culture – V(Optional)	0	2	0	0/0.5
7	CS 3104	Programming Workshop	0	0	2	1
		Total Credits				

Semester 6						
	Code	Course	L	T	P	Credits
1	CS 3201	Big Data Analytics	2	0	2	3
2		Clinical Decision Support Systems	2	1	2	4
3		Computer Aided Drug Discovery	3	0	2	4
4		Computational Genomics	2	1	2	4
5	PR 301	Third year team project	-	-	-	2
6	E1	Elective – I	3	0	0	3
7	EII	Elective - II	3	0	0	3
8	HS-E2	HSS + Mgmt. - Elective – II	2	0	0	2
9		Intro to Prof Development & Employability Skills	2	0	0	2
10	FL 306	French Language & Culture – VI(Optional)	0	2	0	0/0.5
		Total Credits				

Semester 7						
	Code	Course	L	T	P	Credits
1	EIII	Elective-III	3	0	0	3
2	HS-E3	HSS + Mgmt. - Elective – III	2	0	0	2
3	EIV	Elective – IV	3	0	0	3
4	EV	Elective – V	3	0	0	3
5	PR402	Year-4 Project	-	-	-	3
6	FL 407	French Language & Culture –VII(Optional)	0	2	0	0/0.5
Total Credits						

Semester 8						
	Code	Course	L	T	P	Credits
1	PR 403	Year-4 Project	0	5	8	10
2	FL 408	French Language & Culture – VIII (Optional)	0	2	0	0/0.5
Total Credits						

Specializations: To be done through Electives in Baskets