

PROPOSED COURSE STRUCTURE FOR B. TECH. MATHEMATICS AND COMPUTING

<i>First Semester</i>									
Sl. No.	Type	Course Name	Course code	Class Load/Week			Credit	Class load/ week	Marks
				L	T	P			
1	BSC	Mathematics – I	MA1101N	3	1	0	4	4	100
2	BSC	Engineering Chemistry		3	0	0	3	3	100
3	ESC	Introduction to Computing		3	0	0	3	3	100
4	ESC	Basic Electronics		3	0	0	3	3	100
5	VAC	Well-being and happiness		2	0	0	2	2	50
6	HSC	Professional communication in English		2	1	0	3	3	100
		Theory Sub-total		16	2	0	18	18	550
7	ESC	Workshop		0	0	3	2	3	50
8	BSC	Engineering Chemistry Lab		0	0	3	2	3	50
9	ESC	Computer Programming Practice Lab		0	0	3	2	3	50
10		NSS/NCC/PT/Yoga					R*		
		Practical Sub-total		0	0	9	6	9	150
		First Semester Total		16	2	9	24	27	700
*R: Required (Non-credit but with grade)									
<i>Second Semester</i>									
Sl. No	Type	Course Name	Course Code	Class Load/Week			Credit	Class load/ Week	Marks
				L	T	P			
1	BSC	Mathematics – II	MA1201N	3	1	0	4	4	100
2	BSC	Engineering Physics		3	0	0	3	3	100
3	ESC	Basic Electrical Engineering		3	0	0	3	3	100
4	ESC	Introduction to AI and ML		3	0	0	3	3	100
5	VAC	Energy, Environment and Climate Change		2	0	0	2	2	50
6	PC	Discrete Mathematics	MA1203N	3	0	0	3	3	100
		Theory Sub-total		17	1	0	18	18	550
7	ESC	Engineering Graphics		0	0	3	2	3	50
8	BSC	Engineering Physics Lab		0	0	3	2	3	50
9	ESC	Basic Electrical Engineering Lab		0	0	3	2	3	50
10	PC	Advanced Computer Programming Lab	MA1271N	0	0	3	2	3	50
11		NSS/NCC/PT/Yoga					R*		
		Practical Sub-total		0	0	12	8	12	200
		Second Semester Total		17	1	12	26	30	750
*R: Required (Non-credit but with grade)									
<i>Third Semester</i>									
Sl. No	Type	Course Name	Course code	Class Load			Credit	Class load/ week	Marks
				L	T	P			
1	BSC	Mathematics-III/1	MA2101N	3	0	0	3	3	100
2	ESC	Engineering Mechanics		3	0	0	3	3	100
3	PC	Linear Algebra	MA2105N	3	0	0	3	3	100
4	PC	Numerical Analysis	MA2106N	3	0	0	3	3	100
5	PC	Data Structure and Algorithms		3	0	0	3	3	100
		Theory Sub-total		15	0	0	15	15	500
6	ESC	Engineering Mechanics Lab		0	0	3	2	3	50
7	PC	Numerical Analysis Lab	MA2171N	0	0	3	2	3	50
8	PC	Data Structure and Algorithms Lab		0	0	3	2	3	50
9	P	Mini Project-I	MA2191N	0	0	3	2	3	50
		Practical Sub-total		0	0	12	8	12	200
		Third Semester Total		15	0	12	23	27	700
<i>Fourth Semester</i>									
Sl. No	Type	Course Name	Course code	Class Load/Week			Credit	Class load/ week	Marks
				L	T	P			
1	PC	Probability and Statistics	MA2201N	3	0	0	3	3	100
2	PC	Differential Equations	MA2202N	3	0	0	3	3	100
3	PC	Design and Analysis of Algorithms		3	1	0	4	4	100
4	PC	Computer Organization and Architecture		3	1	0	4	4	100
5	OE	OE1 (From Pool-1)		3	0	0	3	3	100
		Theory Sub-total		15	2	0	17	17	500
6	PC	Probability and Statistics Lab	MA2271N	0	0	3	2	3	50
7	PC	Design and Analysis of Algorithm Lab		0	0	3	2	3	50
8	PC	Computer Organization and Architecture Lab		0	0	3	2	3	50
9	P	Mini Project-II	MA2291N	0	0	3	2	3	50

		Practical Sub-total		0	0	12	8	12	200
		Fourth Semester Total		15	2	12	25	29	700
<i>Fifth Semester</i>									
Sl. No	Type	Course Name	Course code	Class Load/Week			Credit	Class load/ week	Marks
				L	T	P			
1	PC	Theory of Computation	MA3101N	3	0	0	3	3	100
2	PC	Applied Statistics and Data Analysis	MA3102N	3	0	0	3	3	100
3	PSE	To be chosen from the 5th Semester Elective Pool		3	1	0	4	4	100
4	PSE	To be chosen from the 5th Semester Elective Pool		3	1	0	4	4	100
5	OE	OE2 (From Pool-2)		3	0	0	3	3	100
		Theory Sub-total		15	2	0	17	17	500
6	PC	Applied Statistics and Data Analysis Lab	MA3171N	0	0	3	2	3	50
7	PSE	Lab for the PSE in Sl. No. 3		0	0	3	2	3	50
8	PSE	Lab for the PSE in Sl. No. 4		0	0	3	2	3	50
9	P	Mini Project-III	MA3191N	0	0	3	2	3	50
		Practical Sub-total		0	0	12	8	12	200
		Fifth Semester Total		15	2	12	25	29	700
<i>Sixth Semester</i>									
Sl. No	Type	Course Name	Course code	Class Load/Week			Credit	Class load/ week	Marks
				L	T	P			
1	PC	Optimization Techniques	MA3201N	3	0	0	3	3	100
2	PC	Data Science and Its Applications		3	0	0	3	3	100
3	PSE	To be chosen from the 6th Semester Elective Pool		3	0	0	3	3	100
4	VAC	Sociology & Professional Ethics		3	0	0	3	3	100
5	OE	OE3 (From Pool-3)		3	0	0	3	3	100
		Theory Sub-total		15	0	0	15	15	500
6	PC	Optimization Techniques Lab	MA3271N	0	0	3	2	3	50
7	PC	Data Science Lab		0	0	3	2	3	50
8	P	Mini Project-IV	MA3291N	0	0	3	2	3	50
		Practical Sub-total		0	0	9	6	9	150
		Sixth Semester Total		15	0	9	21	24	650
<i>Seventh Semester</i>									
Sl. No	Type	Course Name	Course Code	Class Load/Week			Credit	Class load/ week	Marks
				L	T	P			
1	PSE	To be chosen from the 7th Semester Elective Pool		3	0	0	3	3	100
2	PSE	To be chosen from the 7th Semester Elective Pool		3	0	0	3	3	100
3	HSC	Finance Economics and Management for Engineers		3	0	0	3	3	100
4	OE	OE-4 (From Pool-4)		3	0	0	3	3	100
		Theory Sub-total		12	0	0	12	12	400
5	PSE	Lab for the PSE in Sl. No. 1		0	0	3	2	3	50
6	PSE	Lab for the PSE in Sl. No. 2		0	0	3	2	3	50
7	I	Internship					2		
		Practical Sub-total		0	0	6	6	6	100
		Seventh Semester Total		12	0	6	18	18	500
<i>Eighth Semester</i>									
Sl. No	Type	Course Name	Course code	Class Load/Week			Credit	Class load / week	Marks
				L	T	P			
1	OE	OE5 (from NPTEL for the students opting Internship)		3	0	0	3	3	100
		Theory Sub-total		3	0	0	3	3	100
2	I/P	One Semester Internship/ Project					8		300
3	O	Grand Viva					2		50
		Practical Sub-total		0	0	0	10	0	350
		Eighth Semester Total		3	0	0	13	3	450

List of OE for 4th Semester (Pool-1):

SI No.	Course Name	Course Code
1	Real and Complex Analysis	MA2261N

List of PSE Theory Courses for 5th Semester:

SI No.	Course Name	Course Code
1	Applied Time Series and Regression Analysis	MA3121N
2	Numerical Linear Algebra	MA3122N
3	Operating Systems	

List of PSE Lab Courses for 5th Semester:

SI No.	Course Name	Course Code
1	Applied Time Series and Regression Analysis Lab	MA3171N
2	Numerical Linear Algebra Lab	MA3172N
3	Operating Systems Lab	

List of OE for 5th Semester (Pool-2):

SI No.	Course Name	Course Code
1	Abstract Algebra	MA3161N
2	Mathematical Biology	MA3162N

List of PSE Theory Courses for 6th Semester:

SI No.	Course Name	Course Code
1	Stochastic Processes	MA3221N
2	Integral Equations and Calculus of Variations	MA3222N
3	Machine Learning and Deep Learning	MA3223N

List of OE for 6th Semester(Pool-3):

SI No.	Course Name	Course Code
1	Graph Theory and Algorithm	MA3261N
2	Number Theory and Its Applications	MA3262N

List of PSE Theory Courses for 7th Semester:

SI No.	Course Name	Course Code
1	Mathematical Modelling and Simulation	MA4121N

Total Credit	173
PC Theory Credit	38
PC Lab Credit	18
PSE Theory Credit	17
PSE Lab Credit	8
OE Credit	15
ESC+BSC Credit	46
VAC Credit	7
HSC Credit	6
P/I Credit	16
O Credit	2

Subject Type	Percentage
PC	32.36
PSE	14.45
OE	8.67
ESC+BSC	26.58
VAC	4.04
HSC	3.46
P/I	9.24
O	1.15

2	Numerics of PDE	MA4122N
3	Database Management Systems	
4	Computer Networks	

List of PSE Lab Courses for 7th Semester:

SI No.	Course Name	Course Code
1	Mathematical Modelling and Simulation Lab	MA4171N
2	Numerics of PDE Lab	MA4172N
3	Database Management Systems Lab	
4	Computer Networks Lab	

List of OE for 7th Semester (Pool-4):

SI No.	Course Name	Course Code
1	Basics of Quantum Computation	MA4161N
2	Topology and Functional Analysis	MA4162N

List of OE for 8th Semester (Pool-5):

SI No.	Course Name	Course Code
1	Cryptography and Network Security	MA4261N