

**Proposed Engineering Structure for 'B-Tech in Mathematics & Computing' under NEP
2020**

School of Mathematics

Proposed Engineering Structure under NEP 2020 'B-Tech in Mathematics & Computing'

First Year							
1st Semester							
S. No	Course Code	Course Title	L	T	P	Credit	Category
1	MTL BS 101	Engineering Mathematics-I	3	1	0	4	BSC
2	PHL BS 101	Engineering Physics- I	3	0	0	3	BSC
3	PHP BS 101	Engineering Physics -I Lab	0	0	2	1	BSC
4	BTL BS 101	Applied Chemistry	3	0	0	3	BSC
5	BTP BS 101	Applied Chemistry Lab	0	0	2	1	BSC
6	CSL DC 101	Introduction to 'C' Programming	3	0	0	3	ESC
7	CSP DC 101	'C' Programming Lab	0	0	2	1	ESC
8	MEP SExxx	Engineering Workshop	1	0	2	2	SEC
9	LNL 1241	Professional Communication	2	1	0	3	
10		AEC 1/ VAC 1				2	
		Total Credits				23	
2nd Semester							
S. No	Course Code	Course Title	L	T	P	Credit	Category
1	MTL BS 102	Engineering Mathematics-II	3	1	0	4	BSC
2	PHL BS 102	Engineering Physics- II	3	0	0	3	BSC
3	PHP BS 102	Engineering Physics -II Lab	0	0	2	1	BSC
4	EEL 1006	Fundamental of Electrical Engineering	3	0	0	3	ESC
5	EEP 1006	Fundamental of Electrical Engineering Lab	0	0	2	1	ESC
6	CSL DC 102	Introduction to 'Python' Programming	3	0	0	3	ESC
7	CSP DC 102	Introduction to 'Python' Programming Lab	0	0	2	1	ESC
8	MEP SE 102	Engineering Graphics with CAD	1	0	3	2.5	SEC
9	----	Introduction to Environmental Science	3	0	0	3	AEC
		Total Credits				21.5	

Second Year						
3rd Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 201	Data Structure	3	0	0	3
2	CSP DC 201	Data Structure Lab	0	0	2	1
3	MTL DC 201	Discrete Mathematics	3	1	0	4
4	MTL DC 203	Integral Transforms and Complex Analysis	3	1	0	4
5	MTL DC 205	Probability & Statistics	3	1	0	4
6	MTL DC 207	Algebra	3	1	0	4
7		Fundamentals of Managements	3	0	0	3
		Total Credits				23
4th Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 202	Algorithm Design & Analysis	3	1	0	4
2	MTL DC 202	Real Analysis	3	1	0	4
3	CSL DC 204	Theory of Computation	3	1	0	4
4	CSL DC 206	Computer Organization & Architecture	3	1	0	4
5	MTL DC 204	Linear Algebra and Applications	3	1	0	4
6		Engineering Economics	3	0	0	3
		Total Credits				23

Third Year						
5th Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 301	Operating System	3	0	0	3
2	CSP DC 301	Operating System Lab	0	0	2	1
3	MTL DC 301	Number Theory	3	1	0	4
4		Departmental Elective Course - 1	3	0/1	2/0	4
5	MTL DC 303	Stochastic Processes	3	1	0	4
6		Open Elective Course	3	0	0	3
7		Technical Communication	2	0	0	2
		Total Credits				21
6th Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSL DC 302	Data Base Management System	3	0	0	3
2	CSP DC 302	Data Base Management System Lab	0	0	2	1
3	MTL DC 302	Scientific Computing	3	0	0	3
4	MTP DC 302	Scientific Computing Lab	0	0	2	1
5	CSL DC 304	Machine Learning	3	0	0	3
	CSP DC 304	Machine Learning Lab	0	0	2	1
6		Departmental Elective Course -2	3	0/1	2/0	4
7		Departmental Elective Course -3	3	0/1	2/0	4
8		Course from Humanities	2	0	0	2
		Total Credits				22

Fourth Year						
7th Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSD PR 401	B.Tech. Project-I				4
2	CSS PR 401	Training Seminar				2
3	MTL DC 401	Optimization Techniques	3	1	0	4
4	CSL DC 403	Cryptography & Network Security	3	1	0	4
5	MTL DC 403	Mathematical Modeling & Simulation	3	0	0	3
6	MTP DC 403	Mathematical Modeling & Simulation Lab	0	0	2	1
7		Departmental Elective Course -4	3	0/1	2/0	4
		Total Credits				22
8th Semester						
S. No	Course Code	Course Title	L	T	P	Credit
1	CSD PR 402	B.Tech. Project-II (Minor)				8
2		Departmental Elective Course – 5	3	0/1	2/0	4
3		Departmental Elective Course – 6	3	0/1	2/0	4
4		Departmental Elective Course- 7	3	0/1	2/0	4
		Total Credits				20

List of School Electives Courses

S. No.	SubjectCode	Subject	ElectiveNo.
1.	MTL DE 301	Operations Research	SEC- 1
2.	CSL DE 301	Object Oriented programming	
3.	MTL DE 303	Complex Analysis	
4.	CSL DE 302	Computer Networks	SEC - 2
5.	CSL DE 304	Software Engineering	
6.	CSL DE 306	Artificial Intelligence.	
7.	CSL DE 308	Computer Graphics	SEC- 3
8.	CSL DE 310	Web Technology	
9.	CSLDE 312	Cluster & Grid Computing	
10.	CSL DE 314	Big Data Analytics	
11.	CSL DE 401	Data Warehousing & Data Mining	SEC - 4
12.	CSL DE 403	Compiler Design	
13.	CSL DE 405	Wireless & Mobile Computing	
14.	CSL DE 407	Multimedia System	
15.	MTL DE 402	Matrix Computation	SEC- 5
16.	MTL DE 404	Partial Differential Equations	
17.	MTL DE 406	Dynamical Systems	
18.	MTL DE 408	Topology	
19.	MTL DE 410	Functional Analysis	SEC- 6
20.	CSL DE 402	Immersive Computing	
21.	MTL DE 412	Information Theory & Coding	
22.	MTL DE 414	Finite element methods	
23.	MTL DE 416	Game Theory	
24.	MTL DE 418	Differential Geometry	SEC- 7
25.	MTL DE 420	Fuzzy set & Fuzzy logic	
26.	MTL DE 422	Applied Algebra	
27.	MTL DE 424	Tensor Calculus	
28.	MTL DE 426	Statistical Inference	

****Open Elective Courses to be offered by other Schools.**