

Curriculum for B.Tech. in Mathematics and Computing (2024 onwards)

Category – BSC: Basic Science Courses, **ESC:** Engineering Science Courses including Workshop, Drawing, etc., **HSC:** Humanities & Social Sciences including Management Courses, **PCC:** Professional Core Courses, **PEC:** Professional Elective Courses Relevant to Chosen Specialization/Branch, **OEC:** Open Subjects–Electives, **PRC:** Project Work, Seminar & Internship, **OMC:** Mandatory Courses

FIRST SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	BSC	Mathematics-1	15B11MA111	3	1	0	4	4
2.	BSC	Physics-1	15B11PH111	3	1	0	4	4
3.	BSC	Physics Lab-1	15B17PH171	0	0	2	2	1
4.	ESC	Software Development Fundamentals-I	15B11CI111	3	1	0	4	4
5.	ESC	Software Development Fundamentals Lab-I	24B15CS111	0	0	2	2	1
6.	HSC	English	15B11HS112	1	0	2	3	2
7.	ESC	Engineering Drawing & Design	18B15GE111	0	0	3	3	1.5
8.	ESC	Basic Electronics	24B11EC111	3	1	0	4	4
9.	ESC	Basic Electronics Lab	24B15EC111	0	0	2	2	1
TOTAL							28	22.5

SECOND SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	BSC	Mathematics-2	15B11MA211	3	1	0	4	4
2.	BSC	Physics-2	15B11PH211	3	1	0	4	4
3.	BSC	Physics Lab-2	15B17PH271	0	0	2	2	1
4.	ESC	Software Development Fundamentals-II	15B11CI121	3	1	0	4	4
5.	ESC	Software Development Fundamentals Lab-II	24B15CS121	0	0	2	2	1
6.	HSC	Life Skills & Professional Communication Lab	24B16HS111	0	0	2	2	Qualifying
7.	ESC	Workshop	18B15GE112	0	0	3	3	1.5
8.	HSC	Universal Human Values (UHV)	24B11HS111	2	1	0	3	3
TOTAL							24	18.5

THIRD SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	BSC	Mathematical Foundations of Probability and Statistics	25B11MA211	3	1	0	4	4
2.	PCC	Discrete Mathematical Structures	25B11MA212	3	1	0	4	4
3.	PCC	Data Structures	15B11CI311	3	1	0	4	4
4.	PCC	Data Structures Lab	15B17CI371	0	0	2	2	1
5.	PCC	Database Systems and Web	15B11CI312	3	1	0	4	4
6.	PCC	Database Systems and Web Lab	15B17CI372	0	0	2	2	1
7.	PCC	Object Oriented Programming using Java	24B15CS215	0	0	2	2	1
8.	HSC	Economics	15B11HS211	2	1	0	3	3
9.	PRC	Summer Training-I (4 weeks)	24B37MA211	0	0	0	0	2
10.	OMC	Environmental Studies	19B13BT211	3	0	0	3	Qualifying
TOTAL							28	24

FOURTH SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	HSC	HSS Elective – 1	XXXXXX	2	1	0	3	3
2.	PCC	Artificial Intelligence and Machine Learning	24B11CS222	3	0	0	3	3
3.	PCC	Artificial Intelligence and Machine Learning Lab	24B15CS222	0	0	2	2	1
4.	PCC	Numerical Methods and Computation	25B11MA232	3	1	0	4	4
5.	PCC	Numerical Methods and Computation Lab	25B15MA233	0	0	2	2	1
6.	PCC	Design and Analysis of Algorithms	24B11CS221	3	1	0	4	4
7.	PCC	Theory and Applications of Linear Algebra	25B11MA231	3	1	0	4	4
8.	PCC	Design and Analysis of Algorithms Lab	24B15CS221	0	0	2	2	1
9.	PEC	Discipline Elective-1	XXXXXX	3	0	0	3	3
TOTAL							27	24

Discipline Elective-1

Course Title	Course Code	L	T	P	Total	Credits
Time Series Analysis and Forecasting	25B12MA223	3	0	0	3	3
Fuzzy Sets, Logic and Applications	25B12MA222	3	0	0	3	3

FIFTH SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	PCC	Real and Complex Analysis	26B11MA318	3	1	0	4	4
2.	PCC	Operating Systems	24B11CS312	3	0	0	3	3
3.	PCC	Operating Systems Lab	24B15CS312	0	0	2	2	1
4.	PCC	Statistical Computing using R	26B15MA320	0	0	2	2	1
5.	PCC	Full Stack Development Lab	24B15CS314	0	0	2	2	1
6.	PEC	Discipline Elective– 2	XXXXXX	3/2	0	0/2	3/4	3
7.	PEC	Discipline Elective– 3	XXXXXX	3/2	0	0/2	3/4	3
8.	BSC	Science Elective	XXXXXX	3		0	3	3
9.	OMC	Indian Constitution & Traditional Knowledge	18B12HS311	3	0	0	3	Qualifying
10.	PRC	Summer Training-II (6 weeks)	24B37MA311	0	0	0	0	2
TOTAL							25/27	21

Discipline Elective-2

Course Title	Course Code	L	T	P	Total	Credits
Optimization Methods and Applications	26B12MA312	3	0	0	3	3
Number Theory and Cryptography with Applications	26B12MA311	3	0	0	3	3

Discipline Elective-3

Course Title	Course Code	L	T	P	Total	Credits
Fundamentals of Image Processing and Computer Vision	26B12CS316	2	0	0	2	2
Fundamentals of Blockchain Technology	26B12CS317	2	0	0	2	2
Fundamentals of Computing for Data Science	26B12CS318	2	0	0	2	2
Fundamentals of Sensor Technology and Android Programming	26B12CS319	2	0	0	2	2
Fundamentals of Graph Theory	26B12CS320	2	0	0	2	2

Discipline Elective – 3 Lab

Fundamentals of Image Processing and Computer Vision Lab	26B16CS316	0	0	2	2	1
Fundamentals of Blockchain Technology Lab	26B16CS317	0	0	2	2	1
Fundamentals of Computing for Data Science Lab	26B16CS318	0	0	2	2	1
Fundamentals of Sensor Technology and Android Programming Lab	26B16CS319	0	0	2	2	1
Fundamentals of Graph Theory Lab	26B16CS320	0	0	2	2	1

SIXTH SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	PCC	Computer Networks and Internet of Things	18B11CS311	3	0	0	3	3
2.	PCC	Computer Networks and Internet of Things Lab	18B15CS311	0	0	2	2	1
3.	PCC	Statistical Methods and Applications	XXXXXXXXXX	3	0	0	3	3
4.	PCC	Theory of Computation	24B31MA312	3	0	0	3	3
5.	PEC	Discipline Elective – 4	XXXXXXX	3/2	0	0/2	3/4	3
6.	PEC	Discipline Elective-5	XXXXXXX	3/2	0	0/2	3/4	3
7.	OEC	Open Elective - 1	XXXXXXX	2	0	0	2	2
8.	Value added	Selected Value-Added Course	XXXXXXX	2	0	0	2	Audit
9.	PCC	Statistical Methods and Applications Lab	XXXXXXXXXX	0	0	2	2	1
10.	HSC	Soft Skill for Employability	24B15HS311	0	0	2	2	1
11.	PRC	Minor Project	24B37MA312	0	0	4	4	2
TOTAL							29/31	22

SEVENTH SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	PEC	Discipline Elective – 6	XXXXXXX	3/2	0	0/2	3/4	3
2.	OEC	Open Elective - 2	XXXXXXX	3	0	0	3	3
3.	PRC	Major Project Part-1	24B37MA411	0	0	0	8	4
4.	PRC	Summer Training-III (6 weeks)	24B37MA412	0	0	0	0	4
TOTAL							14/15	14

EIGHTH SEMESTER

S. No.	COURSE			Contact Hours				Credits
	Category	Course Title	Course Code	L	T	P	Total	
1.	PEC	Discipline Elective -7	XXXXXXX	3/2	0	0/2	3/4	3
2.	OEC	Open Elective -3	XXXXXXX	3	0	0	3	3
3.	PRC	Major Project Part-2	24B37MA413	0	0	16	16	8
TOTAL							22/23	14

Total Credits: 160