INDIAN INSTITUTE OF TECHNOLOGY MADRAS
CHENNAI 600 036

Curriculum for
B.Tech. Degree Programme
2024 Batch

INDIAN INSTITUTE OF TECHNOLOGY MADRAS

Curriculum for B.Tech. Degree Programme

2023 Batch

B.Tech. Degree Programme
2024 Batch
Category and Branch-wise credit requirements

Category	Engineering (E)	Computing (C)	Professional (P) *Core + Elective*	Humanities (H)	Sciences (S) *Core+Elective*	General (G)	Management (M)	Un-allotted Credits	Total
AE	44	10	172	27	70	18	9	54	**404**
BE	33	11	136+36	27	73	18	9	57	**400**
CH	41	10	124+54	27	65	18	9	54	**403**
CE	48	0	110+66	27	67	18	9	54	**399**
AI&DA	42	0	152+36	27	64	18	9	54	**402**
CS	35	0	129+60	27	64	18	9	63	**405**
EE	42	0	114+40+27	27	63+9	18	9	54	**403**
ME	27	9	190	27	64	18	9	54	**398**
MM	23	20	126+63	27	63	18	9	54	**403**
EP	36	9	121+36+27	27	65	18	9	54	**402**

AE - B.Tech. in Aerospace Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Functions of Several Variables	3	1	0	0	6	10	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	AM1100	Engineering Mechanics	3	1	0	0	6	10	E
4	CS1100	Introduction to Programming	3	0	0	3	6	12	C
5	WS1301	Workshop-I	0	0	0	3	0	3	E
6	GN1101	Life Skills 1	0	0	0	0	4	4	G
7	ID1300	Recreation Course	0	0	0	0	2	2	G
8		NCC (NC1010)/NSO (NS1020)/ NSS (NS1030)/NCA						2	
		Total Credits :						**53**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2102	Differential Equations	3	0	0	0	6	9	S
2	PH1020	Physics II	3	1	0	0	6	10	S
3	PH1030	Physics Laboratory I	0	0	0	3	1	4	S
4	AS1300	Thermodynamics for Aerospace Engineering	3	1	0	0	5	9	E
5	AS1020	Fluid Mechanics	3	1	0	0	5	9	P
6	AS2101	Introduction to Aerospace Engineering	1	0	0	2	2	5	P
7	WS1302	Workshop-II	0	0	0	3	0	3	E
8	GN1102	Life Skills 2	0	0	0	0	2	2	G
	ID1300	Recreation Course	0	0	0	0	2	2	G
		NCC (NC1010)/NSO (NS1020)/ NSS (NS1030) /NCA	0	0	0	0	2	2	G
		Total Credits :						**55**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2104	Complex Analysis	3	0	0	0	6	9	S
2	EE1100/EE1101	Basic Electrical Engineering/ Signals and Systems	3	1	0	0	6	10	E
3	AS2050	Aerodynamics	3	1	0	0	5	9	P
4	AS2030	Gas Dynamics	3	1	0	0	5	9	P
5	AS2010	Basic Strength of Materials	3	1	0	0	5	9	P
6	AS2510	Low Speed Lab	1	0	0	2	2	5	P
7	AS2100	Basic Aerospace Engineering Lab	1	0	0	2	2	5	P
		Total Credits:						**56**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2101	Linear Algebra via Matrices	3	0	0	0	6	9	S
2	AS2040	Flight Dynamics I	3	1	0	0	5	9	P
3	AS2070	Aerospace Structural Mechanics	3	1	0	0	5	9	P
4	AS2080	Vibrations	3	1	0	0	5	9	P
5	AS3270	Propulsion I	3	1	0	0	5	9	P
6	AS3510	Aero Lab I	1	0	0	2	1	4	P
7	ME1480	Engineering Drawing	1	0	0	3	3	7	E
8	HS3050	Professional Ethics	2	0	0	0	0	2	G

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CY	Chemistry	3	1	0	0	6	10	S
2	AS3050	Flight Dynamics II	3	1	0	0	5	9	P
3	AS3271	Propulsion II	3	1	0	0	5	9	P
4	AS3020	Aerospace Structures	3	1	0	0	5	9	P
5	AS3520	Aero Lab II	1	0	0	2	1	4	P
6	AS2520	Propulsion Lab	0	0	0	2	0	2	P
7	MS	**Entrepreneurship**	**3**	**0**	**0**	**0**	**6**	**9**	**M**
8	ID1200	Ecology and Environment	2	0	0	0	0	2	G
		Total Credits						**54**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE1	Humanities Elective 1	3	0	0	0	6	9	H
2		Unallotted Credits						18	
3	ASXXXX	Design Elective*	2	1	2	3	4	12	P
4	ASXXXX	Department Elective 1**	3	0	0	0	6	9	P
		Total Credits						**48**	

*Design Elective can be shifted to 8th semester if and only if the student is going for semester long internship or exchange program

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE2	Humanities Elective 2	3	0	0	0	6	9	H
2		Unallotted Credits						18	
3	ASXXXX	Department Elective 2**	3	0	0	0	6	9	P
4	ASXXXX	Department Elective 3**	3	0	0	0	6	9	P
		Total Credits :						**45**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE3	Humanities Elective 3	3	0	0	0	6	9	H
2		Unallotted Credits						18	
3	ASXXXX	Department Elective 4**	3	0	0	0	6	9	P
		Total Credits :						**36**	

**2 of the 4 department electives have to be taken from a basket of courses in the fields of Aerodynamics, Flight Dynamics & Control. Other two have to be taken from basket of courses in the fields of Structures and Propulsion

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	53	55	56	58	54	48	45	36	405

Project: Optional B.Tech project can be taken in any department in lieu of 27 elective credits. These 27 credits can be counted against 27 aerospace dept elective credits mentioned above only if the project is done in the aerospace dept. Otherwise, it has to be counted against unallotted credits.

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	44	10	172	27	70	18	9	54	**404**

B.Tech (Honours): (Total credit requirement: 404+27 **= 431**

- ***Eligibility***: minimum CGPA of 8.5 at the end of 5th sem without U or W grade in any course. They need to maintain these conditions until graduation.
- ***Extra credit requirement***:
  - BTech project (AS4600) worth 13 credits in VII semester + 14 credits in VIII sem over and above the regular BTech requirement.
  - 54 credits (instead of 36 for regular) out of 80 elective credits to be taken in Aero. Dept. at 5000 level or higher.

Exit Option for B.Tech : Requirements of Core + Elective credits for each category

	Total Credits	S+E+C credits	P Credits
3-year Engg. Exit Credits	270	82	98 credits(minimum 82 in core)

BE - B.Tech. in Biological Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	BT1000	Introduction to Biological Sciences & Engineering	3	0	0	0	6	9	P
2	CY1001	Chemistry I: Structure, Bonding & Reactivity	3	1	0	0	6	10	S
3	MA1101	Functions of Several Variables	3	1	0	0	6	10	S
4	PH1010	Physics I	3	1	0	0	6	10	S
5	PH1030	Physics Laboratory I	0	0	0	3	1	4	S
6	WS1301	Workshop-I	0	0	0	3	0	3	E
7	GN1101	Life Skills 1	2	0	0	0	2	4	G
8	ID1300	Recreation Course	0	0	0	0	2	2	G
9	ID1200	Ecology and Environment	2	0	0	0	0	2	G
		NCC (NC1010)/NSO (NS1020)/NSS (NS1030)/NCA (NS1xxx)	0	0	0	0	2	2	G
		Total Credits :						**56**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MAE 1	Mathematics Elective (from MA basket)	3	0	0	0	6	9	S
2	PHE	Physics Elective (from PH basket)	3	0	0	0	6	9	S
3	CY1051	Chemistry II: Introduction to Spectroscopic Methods	3	0	0	0	6	9	S
4	BT1020	Material and Energy Balances	2	1	0	0	6	9	P
5	CY1002	Chemistry Lab I	0	0	0	3	0	3	S
6	ME1480	Engineering Drawing	0	1	0	3	3	7	E
7	WS1302	Workshop-II	0	0	0	3	0	3	E
8	GN1102	Life Skills 2	2	0	0	0	0	2	G
9	ID1300	Recreation Course	0	0	0	0	2	2	G
		NCC (NC1010)/NSO (NS1020)/ NSS (NS1030)/NCA (NS1xxx)	0	0	0	0	2	2	G
		Total Credits :						**55**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MAE 2	Mathematics Elective (from MA basket)	3	0	0	0	6	9	S
2	HSE 1	Humanities Elective 1	3	0	0	0	6	9	H
3	AM1101	Engineering Mechanics	3	1	0	0	6	10	E
4	BT2011	Microbiology and Biochemistry	3	0	0	0	6	9	P
5	BT2020	Numerical methods for biology	2	1	0	0	6	9	P
6	MS	Entrepreneurship	3	0	0	0	6	9	M
		Total Credits :						**55**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE 2	Humanities Elective 2	3	0	0	0	6	9	H
2	BT2041	Principles of Bioprocess Engineering	3	0	0	0	6	9	P
3	BT3011	Molecular Biology and Genetic Engineering	3	0	0	0	6	9	P
4	BT2080	Programming for Biology	2	0	0	3	6	11	C
5	EE1101	Signals and Systems	3	1	0	0	6	10	E
6	BT3111	Basic Biology Laboratory	0	0	0	6	2	8	P

		Total						**56**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	BT5031	Thermodynamics in Biochemical Engineering	3	1	0	0	6	10	P
2	BT5061	Cellular Engineering	3	0	0	0	6	9	P
3	BT5051	Transport Phenomena in Biological Systems	3	1	0	0	6	10	P
4	BT3040	Bioinformatics	2	0	0	3	6	11	P
5	BT3041	Analysis and Interpretation of Biological Data	2	1	0	0	6	9	P
6	BT3121	Bioprocess Engineering Laboratory	0	0	0	6	2	8	P
		Total						**57**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PE1	Professional Elective 1	3	0	0	0	6	9	P
2	PE2	Professional Elective 2	3	0	0	0	6	9	P
3		Unallocated credits						18	
4									
5									
		Total						**36**	

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE 3	Humanities Elective 3	3	0	0	0	6	9	H
2	BT5011	Biomaterials Engineering	3	0	0	0	6	9	P
3	BT4111	Cell, Tissue, and Biomaterials Engineering Lab	0	0	0	6	2	8	P
4	PE3	Professional Elective 3	3	0	0	0	6	9	P
5	PE4	Professional Elective 4	3	0	0	0	6	9	P
		Total						**44**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HS3050	Professional Ethics	2	0	0	0	0	2	G
2		Unallocated credits						39	
		Total						**41**	

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	56	55	55	56	57	36	44	41	400

Category-wise Credit Distribution for B.Tech Program:

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	33	11	136+36	27	73	18	9	57	**400**

B.Tech (Honours): (Total credit requirement: 400 + 27 = 427)

- ***Eligibility***: Minimum CGPA of 8.5 at the end of 4th semester without U or W grade in any course.
- **BTP is compulsory**, and is taken as 9 + 18 credits in VII and VIII semesters, respectively

- Thus, professional credits for B.Tech. (Honours) program is 427 credits, of which 27 credits are as B.Tech Project.

Category-wise Credit Distribution for B.Tech Honours Program:

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	33	11	136+36+27	27	73	18	9	57	**427**

CH - B.Tech. in Chemical Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Calculus	3	1	0	0	6	10	S
2	CH1100	Fundamentals of Thermodynamics	3	1	0	0	6	10	E
3	AM1100	Engineering Mechanics	3	1	0	0	6	10	E
4	BT1010	Life Sciences	3	0	0	0	6	9	S
5	PH1030	Physics Laboratory I	0	0	0	3	1	4	S
6	WS1301	Workshop-I	0	0	0	3	0	3	E
7	GN1101	Life Skills 1	0	0	0	0	4	4	G
8	ID1300	Recreation Course	0	0	0	2	0	2	G
		NCC (NC1010)/NSO (NS1020)/NSO (NS1030)	0	0	0	0	2	2	
		Total Credits :						**54**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2XXX	Mathematics (Elective Basket)	3	0	0	0	6	9	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	CY1001	Chemistry I: Structure, Bonding & Reactivity	3	1	0	0	6	10	S
4	CH1020	Principles & Calculations in Chemical Engineering	3	1	0	0	6	10	P
5	ID1200	Ecology and Environment	2	0	0	0	0	2	G
6	CY1002	Chemistry Lab I	0	0	0	3	0	3	S
7	WS1302	Workshop-II	0	0	0	3	0	3	E
8	GN1102	Life Skills 2	0	0	0	0	2	2	G
9	ID1300	Recreation Course	0	0	0	2	0	2	G
10		NCC (NC1010)/NSO (NS1020)/NSO (NS1030)	0	0	0	0	2	2	
		Total Credits :						**53**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CH2061	Computational Techniques	3	1	0	0	6	10	C
2	EE1100	Basic Electrical Engineering	3	1	0	0	6	10	E
3	CH2010	Chemical Engineering Thermodynamics	3	1	0	0	6	10	P
4	CH2012	Continuum Mechanics & Transport Phenomena	3	1	0	0	6	10	P
5	CH2013	Computational Programming & Process Simulation Lab	1	0	0	2	2	5	C
6	MXXXX	Management Elective	3	0	0	0	6	9	M
		Total Credits :						**54**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CH2014	Fundamentals of Heat & Mass Transfer	3	1	0	0	6	10	P
2	CH2015	Fluid and Particle Mechanics	3	1	0	0	6	10	P
3	CH2016	Properties Measurement Lab	0	0	0	3	2	5	P
4	CY2010	Kinetics and Catalysis	3	1	0	0	6	10	S
5	PE1	Professional Elective 1	3	0	0	0	6	9	P
6	HSE/ME	Humanities Elective/Management Elective	3	0	0	0	6	9	H/M

	FE1	Free Elective 1	3	0	0	0	6	9	
		Total						**62**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CH3010	Chemical Reaction Engineering	3	1	0	0	6	10	P
2	CH3030	Applications of Mass Transfer	3	1	0	0	6	10	P
3	CH3510	Transport Processes Lab	0	0	0	3	2	5	P
4	CH3052	Material Science for Chemical Engineers	3	0	0	0	6	9	P
5	PE2	Professional Elective 2	3	0	0	0	6	9	P
6	PE3	Professional Elective 3	3	0	0	0	6	9	P
		Total						**52**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CH3521*	Unit Operations Lab	0	0	0	3	2	5	P
2	HSE/ME	Humanities Elective/Management Elective	3	0	0	0	6	9	H/M
3	FE2	Free Elective 2	3	0	0	0	6	9	
4	FE3	Free Elective 3	3	0	0	0	6	9	
5	FE4	Free Elective 4	3	0	0	0	6	9	
6	FE5	Free Elective 5	3	0	0	0	6	9	
		Total						**50**	

*Students who miss this in Semester 6 can take it in Semester 8

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CH3050	Process Dynamics and Control	3	1	0	0	6	10	P
2	CH4010	Process and Product Design	3	1	0	0	6	10	P
3	CH4030	Chemical Reaction Engineering and Process Control Lab	0	0	0	3	2	5	P
4	HSE/ME	Humanities Elective/Management Elective	3	0	0	0	6	9	H/M
5	FE6	Free Elective 6	3	0	0	0	6	9	P
		Total						**43**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CH4250	Process Engineering	1	0	0	3	2	6	P
2	HS3050	Professional Ethics	2	0	0	0	0	2	H
	PE4	Professional Elective 4	3	0	0	0	6	9	P
	PE5	Professional Elective 5	3	0	0	0	6	9	P
	PE6	Professional Elective 6	3	0	0	0	6	9	P
		Total						**35**	

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	54	53	54	62	52	50	43	35	403

Category-wise Credit Distribution

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	36	15	125+54	27	65	18	9	54	**403**

B.Tech (Honours): (Total credit requirement: 403 + 27 = 430)

- ***Eligibility***: Minimum CGPA of 8.5 at the end of 4th semester without U grade in any course.
- **BTP is compulsory**, and is taken as 9 + 18 credits in VII and VIII semesters, respectively
- Thus, professional credits for B.Tech. (Honours) program is 206 credits, of which 27 credits are as B.Tech Project.
- Category-wise Credit Distribution for B.Tech Honours Program:

Category	Engineering (E)	Professional (P) Core+Elective+Project	Humanities (H)	Sciences (S)	Un-allotted Credits	Total
Credits	**48**	**125+54+27**	**27**	**75+9**	**45**	**430**

CE - B.Tech. in Civil Engineering
2023 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CE1010	Introduction to Civil Engineering	2	1	1	0	4	8	P
2	CY1001	Chemistry I: Structure, Bonding & Reactivity	3	1	0	0	6	10	S
3	CY1002	Chemistry Lab I	0	0	0	3	0	3	S
4	CV1050	Vector Calculus and Numerical Methods	3	1	2	0	6	12	S
5	CV1030	Building Drawing and Visualization	1	0	0	3	2	6	E
6	WS1301	Workshop-I	0	0	0	3	0	3	E
7	GN1101	Life Skills 1	0	0	0	0	4	4	G
8	ID1300	Recreation Course	0	0	0	0	2	2	G
9	ID1200	Ecology and Environment	2	0	0	0	0	2	S
		NCC (NC1010)/NSO (NS1020)/NSO (NS1030) /NCA	0	0	0	0	2	2	
		Total Credits :						**52**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Functions of Several Variables	3	1	0	0	6	10	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	PH1030	Physics Laboratory I	0	0	0	3	1	4	S
4	CV1020	Solid and Fluid Mechanics	3	1	2	0	6	12	E
5	HSE 1	Humanities Elective 1	3	0	0	0	6	9	H
6	WS1302	Workshop-II	0	0	0	3	0	3	E
7	GN1102	Life Skills 2	0	0	0	0	2	2	G
8	ID1300	Recreation Course	0	0	0	0	2	2	G
		NCC (NC1010)/NSO (NS1020)/NSO (NS1030) /NCA	0	0	0	0	2	2	
		Total Credits :						**54**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CV2050	Environmental Engineering	3	1	0	2	6	12	P
2	CV2070	Hydraulics and Water Resources Engineering	3	1	0	2	6	12	P
3	CV2010	Structural Mechanics and Analysis	3	1	0	2	6	12	P
4	**CV2090**	**Probability & Statistics for CE**	**3**	**1**	**0**	**2**	**6**	**12**	**S**
	MA2103	**Probability, Stochastic Processes & Statistics**	**3**	**0**	**0**	**0**	**6**	**9**	**S**
5	CV2030	Measurement and Sensing	3	1	0	2	6	12	E
		Total Credits						**57/60**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CV2020	Construction Engineering	3	1	0	2	6	12	P
2	CV2040	Geotechnical Engineering	3	1	0	2	6	12	P
3	CV2060	Transportation Engineering	3	1	0	2	6	12	P
4	CV2080	Structural Engineering	3	1	0	2	6	12	P
5	MSXXXX	Entrepreneurship	3	1	0	0	6	9	M
		Total Credits						**57**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CV3010	Scientific Computing in Civil Engineering	3	1	0	2	6	12	C
2	CEXXXX	Design of CE Systems*	3	1	0	2	6	12	P
3	CEXXXX	CE Laboratory & Practice	1	0	0	3	2	6	P
4		Science Elective (MA,PH,CY,BT)	3	0	0	0	6	9	S
5	PE1	Professional Elective I	3	0	0	0	6	9	P
6	FE1	Free Elective I	3	0	0	0	6	9	E
		Total Credits						**57**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE 2	Humanities Elective 2	3	0	0	0	6	9	H
2	PE2	Professional Elective 2	3	0	0	0	6	9	P
3	PE3	Professional Elective 3	3	0	0	0	6	9	P
4	FE2	Free Elective 2	3	0	0	0	6	9	E
5	FE3	Free Elective 3	3	0	0	0	6	9	E
		Total Credits						**45**	

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE 3	Humanities Elective	3	0	0	0	6	9	H
2	PE4	Professional Elective 4	3	0	0	0	6	9	P
3	PE5	Professional Elective 5	3	0	0	0	6	9	P
4	FE4	Free Elective 4	3	0	0	0	6	9	E
5	FE5	Free Elective 5	3	0	0	0	6	9	E
		Total Credits						**45**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HS3050	Professional Ethics	2	0	0	0	0	2	G
2	PE6	Professional Elective 6	3	0	0	0	6	9	P
3	PE7	Professional Elective 7	3	0	0	0	6	12	P
4	FE6	Free Elective 6	3	0	0	0	6	9	E
		Total						**32**	

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	52	54	57/60	57	57	45	45	32	399/402

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	48	0	110+66	27	67	18	9	54	**399**

B.Tech (Honours): (Total credit requirement: 399 + 27 = **426)**

- ***Eligibility***: minimum CGPA of 8.5 at the end of 5th sem without U or W grade in any course.
- Honours student should carry out a B.Tech. project worth 13 credits in VII and 14 credits in VIII semester in department including Civil Engineering.

CS - B.Tech. in Computer Science & Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Functions of Several Variables	3	1	0	0	6	10	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	CY1001	Chemistry 1	3	1	0	0	6	10	S
4	CS1111	Problem Solving using Computers	3	0	0	3	6	12	E
5	GN1101	Life Skills I	0	0	0	4	0	4	G
6	ID1300	Recreation Course	0	0	0	0	2	2	G
7	WS1301	Workshop-I	0	0	0	3	0	3	E
8		NCC (NC1010)/NSO (NS1020)/NSO (NS1030) /NCA	0	0	0	0	2	2	G
		Total Credits :						**53**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2101	Linear Algebra via Matrices	3	0	0	0	6	9	S
2	CS1200	Discrete Mathematics for Computer Science	3	1	0	0	6	10	E
3	ME1480	Engineering Drawing	1	0	0	3	3	7	E
4	EE1100	Basic Electrical Engineering	3	1	0	0	6	10	E
5	CY1002	Chemistry Lab I	0	0	0	3	0	3	S
6	PH1030	Physics Laboratory I	0	0	0	3	1	4	S
7	GN1102	Life Skills 2	0	0	0	2	0	2	G
8	ID1300	Recreation Course	0	0	0	0	2	2	G
9		NCC (NC1010)/NSO (NS1020)/NSO (NS1030) /NCA	0	0	0	0	2	2	G
10	WS1302	Workshop-2	0	0	0	3	0	3	E
		Total Credits :						**52**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CS2300	Foundations of Computer Systems Design	3	0	0	0	6	9	P
2	CS2310	Foundations of Computer Systems Design Lab	0	0	0	3	1	4	P
3	CS2700	Programming and Data Structures	3	1	0	0	6	10	P
4	CS2710	Programming and Data Structures Lab	0	0	0	3	3	6	P
5	CSXXXX	Introduction to Graph Theory	3	1	0	0	5	9	P
6	HSE1	Humanities Elective 1	3	0	0	0	6	9	H
7	MSXXXX	Entrepreneurship	3	0	0	0	6	9	M
		Total Credits :						**56**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CS2200	Languages, Machines, and Computations	3	1	0	0	6	10	P
2	CS2600	Computer Organization and Architecture	3	1	0	0	6	10	P
3	CS2610	Computer Organization and Architecture Lab	0	0	0	3	3	6	P
4	CS2800	Design and Analysis of Algorithms	3	1	0	0	6	10	P
5	CS2810	Object-Oriented Algorithms Implementation and Analysis Lab	1	0	0	2	3	6	P
6	MA2103	Probability, Stochastic Process and Statistics	3	0	0	0	6	9	S
7	MA/PH/BT	Science Elective 1	3	0	0	0	6	9	S
		Total Credits :						**60**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CS3100	Paradigms of Programming	3	0	0	0	6	9	P
2	CS3300	Compiler Design	3	0	0	6	6	15	P
3	CS3500	Operating Systems	3	0	0	6	6	15	P
4	PE1	Professional Elective 1	4	0	0	0	8	12	P
		Total Credits :						**51**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PE2	Professional Elective 2	4	0	0	0	8	12	P
2	PE3	Professional Elective 3	4	0	0	0	8	12	P
3	FE1	Free Elective 1	3	0	0	0	6	9	E
4	FE2	Free Elective 2	3	0	0	0	6	9	E
5	FE3	Free Elective 3	3	0	0	0	6	9	E
		Total Credits :						**51**	

Summer

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CS3666	Industrial Training	0	0	0	0	20	0	

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE2	Humanities Elective 2	3	0	0	0	6	9	H
2	ID1200	Ecology and Environment	2	0	0	0	2	2	S
3	PE4	Professional Elective 4	4	0	0	0	8	12	P
4	FE4	Free Elective 4	3	0	0	0	6	9	E
5	FE5	Free Elective 5	3	0	0	0	6	9	E
		Total Credits :						**41**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HS3050	Professional Ethics	2	0	0	0	0	0	H
2	HSE3	Humanities Elective 3	3	0	0	0	6	9	H
3	PE5	Professional Elective 5	4	0	0	0	8	12	P
4	FE6	Free Elective 6	3	0	0	0	6	9	E
5	FE7	Free Elective 7	3	0	0	0	6	9	E
		Total Credits :						**41**	

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	53	52	56	60	51	51	41	41	405

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	35	0	129+60	27	64	18	9	63	**405**

Exit Option for B.Tech : Requirements of Core + Elective credits for each category

	Total Credits	S+E+C credits	P Credits
3-year Engg. Exit Credits	304	100	153

● BSc(CSE) core courses = All core courses until (and including) Semester IV + CS3500.

● At most 1 UGRC (P) course.

● No internship credits.

AIDA - B.Tech. in Data Science & Artificial Intelligence
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DA1001	Applied Linear Algebra	3	1	0	0	6	10	S
2	DA1000	Calculus for Engineers	3	0	0	0	6	9	S
3	DA1300	Programming and Data Structures	3	0	0	0	6	9	C
4	DA1301	Programming Lab	0	0	0	3	3	6	C
5	GN1101	Life Skills I	0	0	0	0	4	4	G
6		NCC (NC1010)/NSO (NS1020)/NSO (NS1030) /NCA	0	0	0	0	2	2	G
7	ID1200	Ecology and Environment	2	0	0	0	0	2	G
8	DA1200	Basics of Engineering Principles	3	0	0	0	6	9	E
9	ID1300	Recreation Course	0	0	0	0	2	2	G
		Total Credits :						**53**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DA1100	Introduction to Computational Chemistry	2	1	0	0	6	9	S
2	DA1004	Probability & Statistics for Engineers	3	1	0	0	6	10	S
3	DA1002	Optimization for Engineers	3	0	0	0	6	9	E
4	DA1302	Computational Methods for DS	3	1	0	0	6	10	P
5	DA1003	Optimization Lab	0	0	0	3	3	6	E
6	GN1102	Life Skills 2	0	0	0	2	0	2	G
7	ID1300	Recreation Course	0	0	0	0	2	2	G
8		NCC (NC1010)/NSO (NS1020)/NSO (NS1030) /NCA	0	0	0	0	2	2	G
		Total Credits :						**50**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DAXXXX	Machine Learning I	3	0	0	0	6	9	P
2	DAXXXX	Introduction to Computational Physics	2	1	0	0	6	9	S
3	DAXXXX	Introduction to Computational Biology	2	1	0	0	6	9	S
4	DAXXXX	Data Curation and Visualization	3	0	0	0	6	9	P
5	DAXXXX	Machine Learning Lab	0	0	0	3	3	6	P
7	MSXXXX	Entrepreneurship	3	0	0	0	6	9	M
		Total Credits :						**51**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DAXXXX	Algorithms for Data Science	3	0	0	0	6	9	P
2	DAXXXX	Introduction to Computer Systems	2	1	0	0	6	9	P
3	DAXXXX	Artificial Intelligence	3	0	0	0	6	9	P
4	DAXXXX/ PHXXXX	Physics Elective	3	0	0	0	6	9	S
5	FE1	Free Elective 1	3	0	0	0	6	9	E
6	DAXXXX	AI Lab	0	0	0	3	3	6	P
		Total Credits :						**51**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DAXXXX	Databases	3	0	0	0	6	9	P
2	DAXXXX	Machine Learning II	3	1	0	0	5	9	P
3	DAXXXX	Core Basket-I	3	0	0	0	6	9	P
4	DAXXXX	Deep Learning	3	1	0	0	5	9	P
5	PE1	Professional Elective 1	3	0	0	0	6	9	P
6	DAXXXX	MLOps Lab	0	0	0	3	3	6	P
7	DAXXXX	DL Lab	0	0	0	3	3	6	P
		Total Credits :						**58**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	FE1	Free Elective 1	3	0	0	0	6	9	E
2	FE2	Free Elective 2	3	0	0	0	6	9	E
3	FE3	Free Elective 3	3	0	0	0	6	9	E
4	FE4	Free Elective 4	3	0	0	0	6	9	E
5	HSE1	Humanities Elective 1	3	0	0	0	6	9	H
		Total Credits :						**45**	

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE2	Humanities Elective 2	3	0	0	0	6	9	H
2	DAXXXX	Responsible AI	3	0	0	0	6	9	P
3	DAXXXX	Core Basket II	3	0	0	0	6	9	P
4	DAXXXX	Online & Reinforcement Learning	3	1	0	0	5	9	P
5	DAXXXX	Project I	0	0	0	9	0	9	P
6	PE2	Professional Elective 2	3	0	0	0	6	9	P
		Total Credits :						**54**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HS3050	Professional Ethics	2	0	0	0	2	2	G
2	HSE3	Humanities Elective 3	3	0	0	0	6	9	H
3	DAXXXX	Project II / Elective	0	0	0	18	0	18	P
4	FE5	Free Elective 5	3	0	0	0	6	9	E
		Total Credits :						**38**	

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	53	50	51	51	58	45	54	38	400

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	42	0	152+36	27	64	18	9	54	**402**

B.Tech (Honours): (Total credit requirement: 402+27 = **429)**

- ***Eligibility***: minimum CGPA of 8.5 at the end of 5th sem without U or W grade in any course.
- Honours student should carry out a B.Tech. project /Professional Electives worth 27 credits

Exit Option for B.Tech : Requirements of Core + Elective credits for each category

	Total Credits	S+E+C credits	P Credits
3-year Engg. Exit Credits	241	70	124

EE - B.Tech. in Electrical Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Calculus	3	1	0	0	6	10	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	EE1102/ EE1103	Introduction to Programming/Numerical Methods	2	0	0	3	6	11	C
4	ME1100	Thermodynamics	3	1	0	0	6	10	E
5	PH1030	Physics Lab	0	0	0	3	1	4	S
6	WS1301	Workshop I	0	0	0	3	0	3	E
7	GN1101	Life Skills	0	0	0	0	4	4	G
8	ID1300	Recreation elective	0	0	0	2	0	2	G
9	GN	NCC (NC1010)/NSO (NS1020)/NSO (NS1030)/NCA	0	0	0	0	2	2	G
		Total Credits :						**56**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2101	Linear Algebra via Matrices	3	0	0	0	6	9	S
2	PH1020	Physics II (Electromagnetism)	3	1	0	0	6	10	S
3	EE2002	Digital Systems	3	1	0	0	6	10	P
4	EE2702	Digital Systems Lab	0	0	0	3	2	5	P
5	EE1101	Signals & Systems	3	1	0	0	6	10	E
6	WS1302	Workshop II	0	0	0	3	0	3	E
7	GN1102	Life Skills	0	0	0	0	2	2	G
8	ID1300	Recreation elective	0	0	0	2	0	2	G
9	GN	NCC (NC1010)/NSO (NS1020)/NSO (NS1030)/NCA	0	0	0	0	2	2	G
		Total Credits :						**53**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat

1	EE2021	Materials science for Electrical Engineers	3	1	0	0	6	10	S
2	EE2015	Electric Circuits & Networks	3	1	0	0	6	10	P
3	EE2016	Microprocessor Theory + Lab	2	0	0	3	6	11	P
4	EE2703	Applied Programming Lab	0	0	0	3	2	5	C
5	MA/ EE3110	Maths elective/Probability Foundations for Electrical Engineers	3	0	0	0	6	9	S
6	EE2025	Engineering Electromagnetics	3	1	0	0	6	10	P
7	ID1200	Ecology and Environment	0	0	0	0	2	2	G
		Total Credits :						**57**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EE2007	Analog Systems	3	1	0	0	6	10	P
2	EE2707	Analog Systems Lab	0	0	0	3	2	5	P
3	EE2004	Digital Signal Processing	3	1	0	0	6	10	P
4	EE2006	Electrical Machines	3	1	0	0	6	10	P
5	EE2706	Electrical Machines Lab	0	0	0	3	2	5	P
6	EE3001	Solid State Devices	3	1	0	0	6	10	P
7	Mxxxx	Management elective	3	0	0	0	6	9	M
		Total Credits :						**59**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EE3004	Control Engg	3	1	0	0	6	10	P
2	EE3006	Principles of Measurement & Lab	2	0	0	3	3	8	P
3	SE1	EE Stream Elective-1	3	1	0	0	6	10	P
4	SE2	EE Stream Elective-2	3	1	0	0	6	10	P
5	CY	Chemistry core	3	1	0	0	6	10	S
6	HSE1	Humanities Elective1	3	0	0	0	6	9	H
7	HS3050	Professional Ethics	2	0	0	0	0	2	G
		Total Credits :						**59**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	SE3	EE Stream Elective-3	3	1	0	0	6	10	P
2	SE4	EE Stream Elective-4	3	1	0	0	6	10	P
3	DEP1	EE dept Elective1	3	0	0	0	6	9	P
4	DEP2	EE dept Elective2	3	0	0	0	6	9	P
5	HSE2	Humanities Elective2	3	0	0	0	6	9	H
		Total Credits :						**47**	

Summer

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EE3500	Summer internship	0	0	0	0	20	0	

***Internship is optional and has no grades**

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE3	Humanities Elective 3	3	0	0	0	6	9	H
2	DEP3	EE dept Elective3	3	0	0	0	6	9	P
3	FE1	Free Elective1	3	0	0	0	6	9	ANY
4	FE2	Free Elective2	3	0	0	0	6	9	ANY
		Total Credits :						**36**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	FE3	Free Elective 3	3	0	0	0	6	9	ANY
2	FE4	Free Elective 4	3	0	0	0	6	9	ANY
3	FE5	Free Elective 5	3	0	0	0	6	9	ANY
4	FE6	Free Elective 6	3	0	0	0	6	9	ANY
		Total Credits :						**36**	

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	52*	49*	48*	50*	30*	0*	0*	0*	403

***Please note that the indicated credits are only for core courses. In addition, 174 credits of electives in different categories (as shown in the below table) have to be taken in semesters I-VIII.**

Category	Engineering (E) and Computing (C) Core+ Elective	Professional (P) Core+ Stream Elect.+ Dept Elective	Humanities (H) Core+ Elective	Sciences (S) Core+ Elective	Management (M) Core+ Elective	General (G) Core+ Elective	Un-allotted Credits Core+ Elective	Total
Credits	42 +0	114+40+27	0+27	63+9	0+9	10+8	0+54	403

Electives can be taken in any semester as long as the total credits taken in that semester is less than the maximum credits allowed per semester and if the course pre-requisites are met. One suggestion on how electives can be distributed in various semesters is given above in the semester wise table.

a) At least 9 credits should be from a Management course in M category

b) At least 27 credits should be from HSS courses. Humanities elective can be taken in the 6th semester if one isn't planning for semester exchange/long internship.

c) At least 4 courses that together carry at least 40 credits should be taken from courses in the following EE Stream elective basket. Courses in the stream elective basket other than those chosen to satisfy EE Stream elective requirement can also be taken as general EE electives to satisfy requirement in (d) below.

EE2003 Computer Organization	EE3007 RF and Optical Communication
EE3002 Analog Circuits	EE5180 Introduction to Machine Learning
EE3003 Power Systems	EE3203 Power Electronics
EE5312 VLSI Technology	EE3402 Sensing Techniques and Sensor Systems
EE5413 Linear Dynamical systems	EE3005 Communication Systems
EP3200 Photonics	EE5311 Digital IC Design

d) At least 27 elective credits should be from Electrical Engineering courses. All elective lab courses are also eligible.

e) At least 9 elective credits should be from one Maths/EE course in S category.

f) Remaining 54 credits can be from any dept. including Electrical Engineering. It may be noted that any combination of free electives should lead to 54 credits and not necessarily 6 courses.

g) Summer internship in the 3rd year is optional and not used to calculate CGPA

Project: An optional B.Tech project (BTP) can be taken in lieu of 27 elective credits. BTP can be done in any department including Electrical Engineering. If the BTP is done in the Electrical Engineering department, credits may be counted against the 27 Electrical Engineering department elective credits mentioned above. If the BTP is done with a non-EE faculty member, it will be considered as equivalent to 27 free elective credits.

UG Research Credits (UGRC): UGRC is not mandatory. BTech students can take 27 credit BTP + up to 27 (=3x9 credits) credits of UGRC. If the UGRC is taken under an EE faculty member, it will be placed under the P category. If it is taken in another dept, it will be given E/S/H/C/M category. Please note that the UGRC credits comes out of the 54 unallotted credits and hence cannot be used for fulfilling the 27 credits requirement of dept . electives (item e above)

On crediting NPTEL & online BS courses: - Students can do up to 36 credits from NPTEL and online BS programs. One could take all 36 credits from NPTEL or BS program.

- For NPTEL courses, only the credits are transferred. No grade is awarded.
- For online BS courses from IITM, the grades are awarded and counted for CGPA calculation.
- Up to 9 credits from NPTEL can be used for fulfilling H category requirements.
- All other NPTEL and online BS courses will be counted towards the 54 unallotted credits. They will not be used for fulfilling S, E, C, M or P category requirements.

BTech (Honours): (Total credit requirement: 403 + 27 = **430)**

- ***Eligibility***: minimum CGPA of 8.5 at the end of 5th sem without U or W grade in any course. They need to maintain these conditions until graduation.
- ***Extra credit requirement***: 54 department elective credits (instead of 27 for regular B.Tech) to be taken in the Electrical department; 27 of those credits to be at the 5000 level or above.
- ***BTP requirement***: B.Tech project worth 27 credits is mandatory for honors. BTP can be done in any department including Electrical Engineering. If the project is done in the Electrical Engineering department, 27 credits may be counted against the 54 Electrical Engineering department elective credits mentioned above.

Exit Option for B.Tech : Requirements of Core + Elective credits for each category

	Total Credits	**S+E+C credits**	**P Credits**
3-year Engg. Exit Credits	242	66+4	120(70 core)+4*

***ID1200(2)+HS3050(2)**

ME - B.Tech. in Mechanical Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	ME1480	Engineering Drawing	1	0	0	3	3	7	E
2	CY1001	Chemistry I: Structure, Bonding & Reactivity	3	1	0	0	6	10	S
3		Computing	2	0	0	3	4	9	C
4	ME1100	Thermodynamics	3	1	0	0	6	10	P
5	CY1002	Chemistry Lab I	0	0	0	3	0	3	S
6	GN1101	Life Skills I	0	0	0	0	4	4	G
7		NCC (NC1010)/NSO (NS1020)/NSO(NS1030)/NCA	0	0	0	0	2	2	G
8	ID1300	Recreation Course	0	0	0	0	2	2	G
9	WS1301	Workshop I	0	0	0	3	0	3	P
		Credits for semester 1						**50**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Calculus	3	1	0	0	6	10	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	PH1030	Physics Laboratory I	0	0	0	3	1	4	S
4	AM1100	Engineering Mechanics	3	1	0	0	6	10	E
5	HSE1	Humanities Elective 1	3	0	0	0	6	9	H
6	ID1200	Ecology and Environment	2	0	0	0	0	2	G
7	GN1102	Life Skills II	0	0	0	0	2	2	G
8		NCC (NC1010)/NSO (NS1020)/NSO(NS1030)/NCA	0	0	0	0	2	2	G
9	HS3050	Professional ethics	0	0	0	0	2	2	G
10	ID1300	Recreation Course	0	0	0	0	2	2	G
11	WS1302	Workshop II	0	0	0	3	0	3	P
		Credits for semester 2						**56**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	AM2200	Strength of materials	3	1	0	0	6	10	P
2	AM2530	Foundations of fluid mechanics	3	1	0	0	6	10	P
3	AM2540	Applied mechanics/ Fluid mechanics lab	0	0	0	3	0	3	P
4	EE1100	Basic electrical engineering	3	1	0	0	6	10	E
5	MA2102	Differential equations	3	0	0	0	6	9	S
6	ME2201	Kinematics and dynamics of machinery	3	1	0	0	6	10	P
7	MXXXX**	Entrepreneurship	3	0	0	0	6	9	M
		Credits for semester 3						**61**	

****MXXX – DCC has recommended to have a basket of courses offered by DoMS**

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA 2101/MA 2103/ MA 2104	Mathematics elective	3	0	0	0	6	9	S
2	ME2102	Foundations of Thermal Engineering-1	2	1	0	0	4	7	P
3	ME2200	Materials and design	3	1	0	0	6	10	P
4	ME2302	Manufacturing Technology-I	3	1	0	1	6	11	P
5	ME2400	Measurements and instrumentation	3	0	0	2	6	11	P
6	ME2482	Mechanical engineering lab 1	0	0	0	3	0	3	P
7	BT1010	Life sciences	3	0	0	0	6	9	S
		Credits for semester 4						**60**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	ME3101	Heat transfer	3	1	0	0	6	10	P
2	ME3105	Foundations of Thermal Engg-2	2	1	0	0	4	7	P
3	ME3203	Introduction to Machine Design	2	1	1	0	4	8	P
4	ME3305	Manufacturing Technology-II	3	1	0	1	6	11	P
5	ME3483	Mechanical engineering lab 2	0	0	0	3	0	3	P
6	ME3283	Computer Aided Machine Drawing	1	0	0	2	3	6	P
7	FE1	Free elective 1	3	0	0	0	6	9	E
		Credits for semester 5						**54**	
		Honors Elective 1	3	0	0	0	6	9	P
		Credits for Semester 5 for Honors						**63**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HS	Humanities Elective 2	3	0	0	0	6	9	H
2	ME	Professional Elective 1	3	0	0	0	6	9	P
3		Free Elective 2	3	0	0	0	6	9	
4		Free Elective 3	3	0	0	0	6	9	
5		Professional Elective 2	3	0	0	0	6	9	P
		Credits for Semester 6						**45**	
		Honors Elective 2	3	0	0	0	6	9	
		Credits for Semester 6 for Honors						**54**	

Comments to be included

Students can opt for an Internship for the entire semester

UGRC (9 Credits): Can be considered as "P" category only if ME/AE/AMBE faculty are guides

Summer

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	ME3500	Summer Internship	0	0	0	0	20	0	

Internship is optional and has no grade

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1		Professional Elective 3 /Unallocated Elective 4	3	0	0	0	6	9	
2		Professional Elective 4 /Unallocated Elective 5	3	0	0	0	6	9	
3		Professional Elective 5 /Unallocated Elective 6	3	0	0	0	6	9	
4	HS	Humanities Elective 3	3	0	0	0	6	9	H
		Credits for Semester 7						36	
		Honors Elective 3	3	0	0	0	6	9	
		Credits for Semester 8 for Honors						**45**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1		Unallocated Elective 4/Professional Elective 3	3	0	0	0	6	9	
2		Unallocated Elective 5 /Professional Elective 4	3	0	0	0	6	9	
3		Unallocated Elective 6 /Professional Elective 5	3	0	0	0	6	9	
4		Professional Elective 6	3	0	0	0	6	9	P
		Credits for Semester 8						**36**	

Note:

- ME 4492: BTP in ME in lieu of Professional Electives 3, 4 and 5
- ID 4092: BTP in any other department in lieu of Unallocated Electives 4,5 and 6 (E/H/S/M categories only based on the department where the project is undertaken)
- Students who do not opt for BTP must earn at least 36 out of the 54 P category credits from ME or ID courses taught by ME faculty; the remaining 18 should preferably be in AMBE/AE/ED departments and are subject to the approval of the Faculty Advisor
- Students who opt for a BTP (27 credits) in ME must earn at least 9 out of the 27 credits from ME or ID courses taught by ME faculty; the remaining 18 should preferably be in AMBE/AE/ED departments and are subject to the approval of the Faculty Advisor
- UGRC (9 Credits): Can be considered as "P" category only if ME/AE/AMBE faculty are guides
- B.Tech (Honors)= B.Tech (regular) + ME Electives (27 credits). **BTP in ME Department Compulsory for Honors**

Degree	B. Tech
Science (S)	64
Engg (E)	27
Computing (C)	9
Humanities (H)	27
Mgmt (M)	9
General (G)	18
Professional (P)	190
Unallocated	54

Total	**398**

Credit requirements for B. Tech, DD and early exit option

3-year Engg. exit credits	**Total credits**	**S+E+C credits**	**P credits**
Recommended by CTF	60% of BTech credits	67% of total S+E+C credits in BTech	67% of total P credits in BTech
Department recommendation (in credits)	**240**	**67**	**NA***

MM - B.Tech. in Metallurgical and Materials Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MM1004	Introduction to Mathematical Computing	0	0	0	3	3	6	C
2	MA1101	Calculus	3	1	0	0	6	10	S
3	MM1002	Structure of Materials	3	0	0	0	6	9	P
4	PH1030	Physics Lab I	0	0	0	3	1	4	S
5	GN1101	Life Skills I	0	0	0	0	4	4	G
6	ID1200	Ecology and Environment	2	0	0	0	0	2	G
7		NCC (NC1010)/NSO (NS1020)/NSO(NS1030) /NCA	0	0	0	0	2	2	G
8	ID1300	Recreation Course	0	0	0	0	2	2	G
9	WS1301	Workshop 1	0	0	0	3	0	3	E
		Credits for semester 1						**51**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	AM1100	Engineering Mechanics	3	1	0	0	6	10	E
2	PH1010	Physics I	3	1	0	0	6	10	S
3	ME1480	Engineering Drawing	1	0	0	3	3	7	E
4	MM1003	Thermodynamics of Materials	3	1	0	0	6	10	P
5	MA2101/ MA2102	Linear Algebra via Matrices/Differential Equations	3	0	0	0	6	9	S
6	CY1002	Chemistry Lab I	0	0	0	3	0	3	S
7	GN1102	Life Skills II	0	0	0	0	2	2	G
8		NCC (NC1010)/NSO (NS1020)/NSO(NS1030) /NCA	0	0	0	0	2	2	
9	ID1300	Recreation Course	0	0	0	0	2	2	G
10	WS1302	Workshop-II	0	0	0	3	0	3	E
		Credits for semester 2						**58**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MM2010	Principles of Physical Metallurgy	3	0	0	0	6	9	P
2	MM2XXX	Physical and Mechanical Metallurgy Lab	0	0	0	3	3	6	P
3	MM2020	Deformation and Failure of Materials	3	0	0	0	6	9	P
4	MM2041	Transport Phenomena in Materials	3	1	0	0	6	10	P
5	HSE1	Humanities Elective I	3	0	0	0	6	9	H
6		Elective under S category	3	0	0	0	6	9	S
7	MXXXX	Entrepreneurship	3	0	0	0	6	9	M
		Credits for semester 2						**61**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MM2080	Principles of Extractive Metallurgy	3	0	0	0	6	9	P
2	MM3010	Physics of Materials	3	0	0	0	6	9	P
3	MM3030	Materials Characterization	3	0	0	0	6	9	P
4	MM3100	Materials Characterisation Lab	1	0	0	3	2	5	P
5	HSE2	Humanities Elective II	3	0	0	0	6	9	H
5		Elective under 'S' cateogory	3	0	0	0	6	9	S
		Credits for semester 4						**50**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MM3330	Non-Metallic Materials	3	0	0	0	6	9	P
2	MM3090	Environmental Degradation of Materials	3	0	0	0	6	9	P
3	MT4110	Computational Methods in Materials Engg.	0	0	0	0	0	9	C
4	MM3110	Computational Materials Engineering Lab	0	0	0	3	2	5	C
5	PE1	Professional Elective 1	3	0	0	0	6	9	P
6	MM*****	Electronics and functional materials	3	0	0	0	6	9	P
		Credits for semester 5						**50**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HSE3	Humanities Elective III	3	0	0	0	6	9	H
2	MM3XXX	Materials Processing Elective 1 in P category*	3	0	0	0	6	9	P
3	MMXXXX	Materials processing Elective 2 in P category*	3	0	0	0	6	9	P
4	PE2	Professional Elective 2	3	0	0	0	6	9	P
		Credits for semester 6						**36**	

***Materals Processing Electives**

MM5012	Welding Processes
MM3041	Deformation processing and forming
MM5430	Advanced Powder Processing
MM5250	Additive Manufacturing
MM3070	Solidification processing and casting
MM5340	Surface Engineering
MM3020	Ironmaking and Steelmaking

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MMXXXX	Materials Selection and Design	3	0	0	0	6	9	P
2	MM3XXX	Material processing and NDE lab	0	0	0	3	2	5	P
2	MM4110	B.Tech Project Phase I#	0	0	3	0	6	9	P
		Total						23	

B.Tech Project Phase I is optional for B.Tech. programme.

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HS3050	Professional Ethics	2	0	0	0	0	2	G
2	MM4120	B.Tech Project Phase II@	0	0	6	0	12	18	P
3		**Total**						20	

@ B.Tech Project Phase I is pre-requisite for B.Tech Project Phase II which is optional for B.Tech programme

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	51	58	61	50	50	36	23	20	349

* Indicated credits are only for core program. In addition, B.Tech. students not opting for project are required to take 27 credits of elective courses from "P" category and 86 credits of free elective courses. B.Tech students opting for project need to take 54 credits of free elective courses.

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	23	20	126+63	27	63	18	9	54	**403**

B.Tech (Honours): (Total credit requirement: 403+27 = **430)**

- ***Eligibility***: minimum CGPA of 8.5 at the end of 5th sem without U or W grade in any course.
- Honours student should carry out a B.Tech. project worth 27 credits

NA - B.Tech. in Naval Architecture & Ocean Engineering
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA1101	Calculus	3	1	0	0	6	10	S
2	PH1010	Physics I	3	1	0	0	6	10	S
3	PH1030	Physics Lab	0	0	0	3	1	4	S
4	ME1100	Thermodynamics	3	1	0	0	6	10	E
5	OE1101	Introduction to Naval Architecture & Ocean Engineering	2	0	0	0	4	6	P
6	ID1300	Recreation	0	0	0	0	3	2	G
7	GN1101	Life Skills I	0	0	0	0	2	4	G
8	WS1301	Workshop I	0	0	0	3	0	3	E
		NCC (NC1010)/NSO (NS1020)/NSO(NS1030) /NCA	0	0	0	0	2	2	G
		Credits for semester 1						**51**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CS1100*	Introduction to Programming	3	0	0	3	6	12	C
2	CY1001	Chemistry I: Structure, Bonding & Reactivity	3	1	0	0	6	10	S
3	CY1002	Chemistry Lab	0	0	0	3	0	3	S
4	HSE1	Humanities Elective 1	3	0	0	0	6	9	H
5	OE1012	Ship Hydrostatics and Stability	3	1	0	0	6	10	P
6	GN1102	Life Skills II	0	0	0	0	1	2	G
7	ID1200	Ecology and Environment	2	0	0	0	1	2	G
8	ID1300	Recreation	0	0	0	0	3	2	G
9	WS1302	Workshop I	0	0	0	3	0	3	E
		NCC (NC1010)/NSO (NS1020)/NSO(NS1030) /NCA	0	0	0	0	3	2	G
		Credits for semester 2						**55**	

***OE1100 is offered to students from computing background in school**

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2101	Linear Algebra via Matrices	3	0	0	0	6	9	S
2	OE2015	Basic Electrical Circuits And Instruments	3	0	0	1	6	10	P
3	MXXXX	Management Elective	3	0	0	0	6	9	M
4	OE1011	Structural mechanics	3	0	0	0	6	9	E
5	OE2013	Ship Drawing and Calculations	1	3	0	3	3	10	P
6	OE2044	Ship Hydrodynamics	3	1	0	0	6	10	P
		Credits for semester 3						**57**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	MA2102	Differential Equations	3	0	0	0	6	9	S
2	OE2024	Analysis of Structures	3	1	0	3	3	10	P
3	OE3035	Motion of Ships & Floating Systems	3	1	0	0	6	10	P
4	OE2034	Ship Resistance and Propulsion	3	1	0	1	6	11	P
5	OE2054	Ocean Wave Hydrodynamics	3	1	0	0	6	10	P
		Credits for semester 4						**50**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	BT1010	LifeSciences	3	0	0	0	6	9	S
1	OE3015	Ship Structural Analysis	3	1	0	0	6	10	P
2	OE3016	Ship Design	3	0	0	1	6	10	P
3	OE3017	Dynamics of marine structures	3	0	0	0	6	9	P
4	OE2014	Marine Engineering	3	1	0	0	6	10	P
5	OE3190	Design of Ocean Structures	3	0	0	0	6	9	P
		Credits for semester 5						**57**	

Semester 6 (Optional Semester off programme)

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	FE1	Free Elective – I	3	0	0	0	6	9	F
2	FE2	Free Elective – II	3	0	0	0	6	9	F
3	FE3	Free Elective – III	3	0	0	0	6	9	F
4	FE4	Free Elective – IV	3	0	0	0	6	9	F
		Credits for semester 6						**36**	

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	OE3046	Ship Structural Design	3	1	0	0	6	10	P
2	OE3036	Maneuvering & Control of Marine Vehicles	3	1	0	0	6	10	P
3	FE5	Free Elective – V	3	0	0	0	6	9	F
4	OEXXXX	Professional Elective - I	3	0	0	0	6	9	P
5	OEXXXX	Professional Elective – II/Project	3	0	0	0	6	9	P
		Credits for semester 7						**47**	
		Honours Elective 1	3	0	0	0	6	9	
		Honours Elective 2	3	0	0	0	6	9	
		Totral credits for (Hons.) students						**65**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	HS3050	Professional Ethics	2	0	0	0	0	2	G
2	HSE2	Humanities Elective – II	3	0	0	0	6	9	H
3	OEXXXX	Project / Professional Elective – III	3	0	0	0	6	9	P
4	OEXXXX	Project / Professional Elective – IV	3	0	0	0	6	9	P
5	FE6	Free Elective – VI	3	0	0	0	6	9	F
6	FE7	Free Elective – VII	3	0	0	0	6	9	F
		Credits for semester 8						**47**	
		Honours Elective 3	3	0	0	0	6	9	
		Totral credits for (Hons.) students						**56**	

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	51	55	57	50	57	36	47	47	400

Students are required to take 63 FREE elective credits during semesters VI-VIII from any department including Ocean Engineering. Electives can be taken in semesters V-VIII, subject to maximum of 60 credits per semester or as suggested.

* Project: An optional B.Tech project can be taken in lieu of 27 elective credits as mentioned in Sem VII and Sem VIII. These 27 elective credits have to be against ocean engineering elective courses. If the student starts a project in VII Sem and cannot successfully continue then he has to substitute the same with departmental elective credits of 9 credits in the semester VIII.

BTech (Honours): (Total credit requirement: 400 + 27 = 427) ·

Eligibility: minimum CGPA of 8.5 at the end of 6th sem without U or W grade in any course. They need to maintain these conditions until graduation.

· BTech Project is not mandatory. Three Professional Elective courses (OE 5000 and above level courses) can be taken in place of the project.

· Extra credit requirement: BTech extra up to 9 credits in VII semester + 18 credits in VIII sem over and above the regular BTech requirement. These 27 credit (three) elective courses should be at OE 5000 level or higher.

LIST OF ELECTIVES

NOTE: More electives can be included from the list of courses offered by other departments

LIST OF ELECTIVES							
Course No	Course Title	L	T	E	P	O	C
	ELECTIVE (S) – Mathematics						
MA2030	Differential Equations	3	0	0	0	6	9
MA2040	Probability, Stochastic Process & Statistics	3	0	0	0	6	9
ELECTIVE (E) – Professional for NA&OE (BTech&DD)							
OE4300	Ocean Energy	3	0	0	0	6	9
OE4400	Drilling vessels and Support Crafts	3	0	0	0	6	9
OE4600	Advance ship Hydrodynamics	3	0	0	0	6	9
OE5011	Marine Robotics	3	0	0	0	6	9
OE5080	Marine Instrumentation	3	0	0	0	6	9
OE5170	Ocean Acoustics	3	0	0	0	6	9
OE5545	Marine Geotechnical Engineering	3	0	0	0	6	9
OE5310	Guidance and control of Marine Vehicles	3	0	0	0	6	9
OE5320	Nonlinear Problems in Ocean Engineering	3	0	0	0	6	9
OE5330	Advanced Marine Structures	3	0	0	0	6	9
OE5015	Design Of Fishing Vessels	3	0	0	0	6	9
OE5025	Design Of Ship Outfit Systems	3	0	0	0	6	9
OE5035	Design Of Submarine And Submersible	3	0	0	0	6	9
OE5650	Marine Corrosion Engineering	3	0	0	0	6	9
OE5045	Ship Electrical And Electronic Systems	3	0	0	0	6	9
OE5055	Ship Positioning Systems	3	0	0	0	6	9
OE5075	Warship Design	3	0	0	0	6	9
OE4080	Analysis And Design Tools In Marine Hydrodynamics	3	0	0	0	6	9
OE4111	Laboratory Modelling In Marine Hydrodynamics	3	0	0	0	6	9
OE6008	Design, Construction and Operation of LNG Carriers and Terminals	3	0	0	0	6	9
OE5450	Numerical Techniques in Ocean Hydrodynamics	3	0	0	0	6	9
OE5500	FEM Applied to Ocean Engineering	3	0	0	0	6	9
OE5600	Advanced Wave Dynamics	3	0	0	0	6	9
OE5800	Coastal Engineering	3	0	0	0	6	9
OE6005	Reliability of Offshore Structures	3	0	0	0	6	9
OE6020	Mesh-free Methods Applied to Hydrodynamics	3	0	0	0	6	9
OE6200	Design of Fixed Offshore Structures	3	0	0	0	6	9
OE6300	Plated Structures and Shells	3	0	0	0	6	9
OE6930	Modeling of Offshore and Coastal Processes	3	0	0	0	6	9
OE6980	Computer Aided Surface Development of Marine	3	0	0	0	6	9
OE6990	Advanced Marine Vehicles	3	0	0	0	6	9
OE5510	Machine Learning for Ocean Engineers	3	0	0	0	6	9

EP - B.Tech. in Engineering Physics
2024 Batch

Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH1050	Foundation of Computational Physics	2	0	0	3	4	9	C
2	MA1101	Calculus	3	1	0	0	6	10	S
3	PH1010	Physics I	3	1	0	0	6	10	S
4	PH1030	Physics Lab	0	0	0	3	1	4	S
5	PH1080	Thermodynamics & Kinetic Theory	3	1	0	0	6	10	E
6	GN1101	Life Skills I	0	0	0	0	4	4	G
7	ID1200	Ecology and Environment	2	0	0	0	0	2	G
8	ID1300	Recreation	0	0	0	0	2	2	G
9		NCC (NC1010)/NSO (NS1020)/NSO(NS1030)	0	0	0	0	2	2	G
10	WS1301	Workshop I	0	0	0	3	0	3	E
		Credits for semester 1						**56**	

Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CY1001	Chemistry I: Structure, Bonding & Reactivity	3	1	0	0	6	10	S
2	CY1002	Chemistry Lab	0	0	0	3	0	3	S
3	EE1101	Signals & Systems	3	1	0	0	6	10	E
4	EE2002	Digital Systems	3	1	0	0	6	10	P
5	EE2702	Digital Systems Lab	0	0	0	3	2	5	P
6	PH1020	Physics II	3	1	0	0	6	10	S
7	GN1102	Life Skills II	0	0	0	0	2	2	G
8		NCC (NC1010)/NSO (NS1020)/NSO(NS1030)	0	0	0	0	2	2	G
9	ID1300	Recreation	0	0	0	0	2	2	G
10	WS1302	Workshop II	0	0	0	3	0	3	E
		Credits for semester 2						**57**	

Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EE2015	Electric Circuits & Networks	3	0	0	0	6	10	E
2	EP2090	EP Lab 1	0	0	0	3	1	4	P
3	EP2102	Classical Dynamics	3	0	0	0	6	9	P
4	EP2110	Intro Math Phys.	3	1	0	0	6	10	P
5	HS	H Elec. 1	3	0	0	0	6	9	H
6	MA	Math.Elective	3	0	0	0	6	9	S
7	MXXXX	Management Elective	3	0	0	0	6	9	M
		Total						**60**	

Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EE2004	Digital Signal Processing	3	1	0	0	6	10	P
2	EE2007	Analog Systems	3	1	0	0	6	10	P
3	EE2707	Analog Systems Lab	0	0	0	3	2	5	P
4	EP2210	Quantum Mechanics	3	0	0	0	6	9	P
5	EP3190	EP Lab 2	0	0	0	3	1	4	P
9	BT1010	Life Sciences	3	0	0	0	6	9	S
7	EE3001	Solid State Devices	3	1	0	0	6	10	P
		Total						**57**	

Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EP3110	Electromagnetics and Applications	3	0	0	0	6	9	P
2	EP3120	Statistical Physics	3	0	0	0	6	9	P
3	EP3290	EP Lab 3	0	0	0	6	2	8	P
4	EP3220	Solid State Physics	3	0	0	0	6	9	P
5	EP/EE	P. Elec. 1	3	0	0	0	6	9	P
6	HS	H. Elec. 2	3	0	0	0	6	9	H
7	HS3050	Professional Ethics	2	0	0	0	0	2	G
		Total						**55**	

Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	FE1	F. Elec 1	3	0	0	0	6	9	F
2	FE2	F. Elec 2	3	0	0	0	6	9	F
3	EP/EE	P. Elec. 2	3	0	0	0	6	9	P
4	EP/EE	P. Elec. 3	3	0	0	0	6	9	P
		Total						**36**	

Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EP/EE	P. Elec. 4	3	0	0	0	6	9	P
2	EP4140 or EP/EE	Project * or P. Elec. 5	0 3	0 0	0 0	0 0	9 6	9* 9	P P
3	HS	H Elec. 3	3	0	0	0	6	9	H
4	FE3	F Elec. 3	3	0	0	0	6	9	F
5	FE4	F Elec. 4	3	0	0	0	6	9	F
		Total						**45**	

Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EP4150 or EP/EE EP/EE	Project * or P. Elec. 5 P. Elec. 6	0 3 3	0 0 0	0 0 0	0 0 0	18 6 6	18* (or) 9 9	 P
3	FE5	F Elec. 5	3	0	0	0	6	9	F
4	FE6	F Elec. 6	3	0	0	0	6	9	F
		Total						**36**	

*** B.Tech. project (EP4140 & EP4150) is optional. In lieu of the project the students may be allowed to opt for three professional electives worth 27 Physics credits. EP4140 will be a pre-requisite for EP4150**

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	56	57	60	57	55	36	45	36	402

Category	Engineering (E)	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
Credits	36	9	121+36+27	27	65	18	9	54	**402**

Total no. of S credits	**:**	56+9 = 65
Total no. of E credits	**:**	36
Total no. of C credits	**:**	9
Total no. of P credits	**:**	184 [*121 core + 36 electives + 27 project /electives*]
Total no. of F elective credits	**:**	54
Total no. of H elective credits	**:**	27
Total no. of M elective credits	**:**	9
Total no. of GN credits	**:**	10+8 = 18

Electives = 171/ 402 = 42.5 %

BTech (Honours): (Total credit requirement: 402 + 27 =**429)**

•**Eligibility**: minimum CGPA of 8.5 at the end of 5th sem. without U or W grade in any course. They need to maintain these conditions until graduation.

•**BTech Project is mandatory**.

•**Extra credit requirement**: 27 professional elective credits are to be taken in VI-VIII semester