COURSE STRUCTURE

B.TECH. PROGRAMMES

in

CIVIL ENGINEERING

COMPUTER SCIENCE & ENGINEERING

ELECTRICAL ENGINEERING

ELECTRONICS & COMMUNICATION ENGINEERING

ELECTRONICS & INSTRUMENTATION ENGINEERING

MECHANICAL ENGINEERING

Effective from AY: 2025-26

National Institute of Technology Silchar

Silchar, Assam

B.Tech. Course Structure

i. Total duration for B.Tech. Degree programme is eight (08) years.

ii. The Minimum Credit Point requirement for the B.Tech. degree is 170. However, a department may add extra credit point(s) with 170, if desires so.

iii. The total credit point requirements for the 1st & 2nd Semesters are 19 each. The total credit point requirements for the 3rd, 4th, 5th, & 6th Semesters are 25 each. The total credit point requirements for the 7th & 8th Semesters are 24 and 8, respectively.

iv. A student may be allowed to exit the programme either temporarily for a period of maximum 4 years or completely only after completion of first two years (first four semesters) of the programme. These students may be awarded the Diploma Certificate in respective discipline subject to fulfilment of the minimum credit requirements for it.

v. Students exiting after 4th Semester with a Diploma may come back to join the B.Tech. degree programme by surrendering the issued Diploma Certificate, but need to complete the remaining courses of study within six (06) years. However, the gap period can't exceed four (04) years considering the routine upgradation of the course structure and syllabi.

vi. Students exiting after 4th Semester with a Diploma Certificate need to take the "Internship Level-1" (instead of the "Mini Project" of same credit points) in order to have basic industry / research exposure. For that they may be allowed to undergo Internship programme at any time from the end of 2nd semester to the start of the 5th semester. The period for the Internship Level-1 is of four weeks (minimum) duration. However, a student may complete the duration at multiple periods at the same organization or at multiple organizations.

vii. All students need to carry out the compulsory Internship Level-2 (Summer/Winter Internship) for a period not less than 6 weeks during the summer and winter breaks within the time-window from the end of 4th semester to the start of 7th semester registration. Further, a student may complete the internship at multiple periods at the same organization or at multiple organizations. These internships may be with or without stipend/salary/pay from the organization(s).

viii. The opportunity for job/research internship in industry/research/corporate sectors is made available to the students at the 8th semester only. The duration for such internship should be at least 4 (four months). The job/research internship in industry/research/corporate sectors is considered as a course of 3 (three) credit points. The evaluation process for this course is mentioned under the syllabi section. The students, who are interested for job/research internship, must declare the same well within two weeks (maximum) from the date of their 8th semester registration.

ix. The students at the 8th semester is categorized into two groups – the students not opting for job/research internship are grouped in Category – I and the students opting for job/research internship are grouped in Category – II.

x. All the students at the 8th semester need to complete a total of 8 credit points, out of which the "Grand Viva – II" of 2 credit points.

xi. The students under Category – I need to register for courses of 6 credit points from Professional Breadth Course (PBC) Basket – II.

xii. The students under Category – II need to register for the internship of 3 credit points and one or more online courses as Professional Breadth (Open Elective) Courses equivalent to 3 credit points from Massive Open Online Courses (MOOCs) offered under SWAYAM and NPTEL by Indian institutions (IITs, IISc, etc.) based on respective DUPC recommendation. The earned grades/marks from the MOOCs shall be mapped to equivalent grade against the allocated 3 credit points.

xiii. The opportunity for opting online courses (MOOCs) is made available to all the students at the 7th & 8th semesters (4th year) only. The students may opt for MOOCs courses offered under SWAYAM/NPTEL by Indian institutions (IITs, IISc, etc.) based on respective DUPC recommendation for a maximum of 06 credit points. These courses may be either from Professional Depth (Departmental Elective) Courses or from Professional Breadth (Open Elective) Courses. The DUPC shall decide whether the chosen courses decision on whether these

xiv. The students opting for job/research internship, may avail the option for online courses (MOOCs) of 6 credit points in 7th semester in addition to the compulsory online courses (MOOCs) of 3 credit points during their internship.

xv. The students not opting for job/research internship, may also avail the option for the course "Capstone Project" of 3 credit points instead of theory course(s) of 3 credit points in 8th semester.

The Overall Credit Structure

Course Category		**Credits**
Basic Science Courses (BS)		17
Engineering Science Courses (ES)		15
Humanities & Social Sciences and Management Courses (HM)		11
Professional Core Courses [Theory + Lab] (PC)		82
Professional Depth (Departmental Elective) Courses (PD)		15
Professional Breadth (Open Elective) Courses (PB)		12 / 9* / 9^
Internship (IN)	Basic Internship (only for students opting for Diploma certificate)	2
	Summer/Winter Internship (Compulsory for all students)	1
	Job/Research Internship [Optional in lieu of one PB (Basket 2) course]	3*
Projects (PR)	Mini Project (for students not-opting for Diploma certificate)	2
	Major Project	9
	Capstone Project [Optional in lieu of one PB (Basket 2) course]	3^
Grand Viva (PC)	Level – 1	1
	Level – 2	2
Extra Academic Activities (EAA)		3
Total Credits		**170**

The Credit Points Distribution

Description		Semesters				Total Credits			Diploma Certificate in respective discipline of engineering
Course Types		I	II	III	IV	I-IV	V-VIII	I-VIII	
Basic Sciences (BS)		7	7	3		17			
Humanities & Management (HM)		3		3 0	0 3	6			
Engineering Sciences (ES)		5	8	0 2	2 0	15			
Professional Core (PC)	*Basic*	3	3	5.5	5.5	17			
	Main			13$ 14$	15$ 14$	28			
Either	Basic Internship (*for 2 yr Diploma Certificate*) (IN)				2	2			
Or	Mini Project (*for 4-yr B.Tech. Degree*) (PR)								
Extra Academic Activities (EAA)		1	1	0.5	0.5	3			
Total		**19**	**19**	**25**	**25**	**88**			
Minimum Credit Point Requirements for Diploma Certificate									**88**

Description		Semesters				Total Credits			Diploma Certificate in respective discipline of engineering
Course Types		V	VI	VII	VIII	I-IV	V-VIII	I-VIII	
Basic Sciences (BS)						17		17	
Humanities & Management (HM)		2$ 3$	3$ 2$			6	5	11	
Engineering Sciences (ES)						15		15	
Internship Level-1 (IN) / Mini Project (PR)						2		2	
Extra Academic Activities (EAA)						3		3	
Professional Core (PC)	*Basic*					17		17	
	Main	20$ 19$	13$ 14$	5	2	28	40	68	
Professional Depth (PD)		3	6	6			15	15	
Professional Breadth (PB)			3	3	6 3^ 3*		12 9^ 9*	12 9^ 9*	
Summer/Winter Internship (IN)				1			1	1	
Major Project (PR)				9			9	9	
Capstone Project (PR)					0 3^ 0		0 3^ 0	0 3^ 0	
Job/Research/Corporate Internship (IN)					0 0 3*		0 0 3*	0 0 3*	
Total		**25**	**25**	**24**	**8**	**88**	**82**	**170**	
Minimum Credit Point Requirements for B.Tech. Degree									**170**

Semesters	III	IV	V	VI	VII	VIII	Total Credits
Minor Degree Programme	**3**	**3**	**3**	**3**	**3**	**3**	**15**
	Minimum Credit Points for Minor Degree						**15**
Minimum Credit Point Requirements for B.Tech. with Minor Degree	**28**	**28**	**28**	**28**	**27**	**11**	**188**

$ → *Two groups – Group A consists of CE, CSE, & ME, and Group B consists of EE, ECE, & EI*

Course Structure :: B.Tech. Civil Engineering

Semester – I				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11001	Algebra and Calculus	3-0-0	3	3
PH11001	Wave Mechanics and Optics	3-0-0	3	3
CS11001	Programming and Data Structure	2-0-2	3	4
HS11001	English for Technical Communication	2-0-2	3	4
CE11001	Building Materials & Construction	3-0-0	3	3
CE12001	Computer Aided Drawing & Graphics	1-0-2	2	3
PH12001	Physics Lab	0-0-2	1	2
EA1700A*	EAA Course	0-0-0	1	--
		Total	**19**	**22**

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – II				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11002	Numerical and Mathematical Methods for Differential Equations	3-0-0	3	3
CY11002	Engineering Chemistry	3-0-0	3	3
ME11002	Engineering Mechanics	3-0-0	3	3
EE11002	Electrical & Electronics Science	3-0-0	3	3
CE11002	Engineering Survey	3-0-0	3	3
ME12002	Workshop Practice	0-0-3	1	3
EE12002	Electrical & Electronics Science Lab	0-0-2	1	2
CY12002	Chemistry Lab	0-0-2	1	2
EA1700B*	EAA Courses	0-0-0	1	--
		Total	**19**	**22**

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – III				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA21001	Applied Mathematical Analysis and Statistics	3-0-0	3	3
HS21001	Engineering Economics	3-0-0	3	3
CE21003	Fluid Mechanics	3-0-0	3	3
CE21005	Concrete Technology	3-0-0	3	3
CE21007	Highway Engineering	3-0-0	3	3
CE21009	Strength of Materials	3-0-0	3	3
CE22001	Functional Planning of Building	1-0-2	2	3
CE22003	Material Testing Lab	0-0-3	1.5	3
CE22005	Fluid Mechanics Lab	0-0-3	1.5	3
CE22007	Computer Programming Lab	0-0-3	1.5	3
EA2700A*	EAA Courses	0-0-0	0.5	--
		Total	**25**	

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – IV					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
CE21002		Environmental Science	2-0-0	2	2
CE21004		Structural Analysis-I	3-0-0	3	3
CE21006		Design of Structures-I	4-0-0	4	4
CE21008		Geotechnical Engineering-I	3-0-0	3	3
CE21010		Water Supply Engineering	3-0-0	3	3
CE21012		Hydraulic Engineering	3-0-0	3	3
CE22002		Field Surveying	0-0-4	2	4
CE22004		Highway Engineering Lab	0-0-3	1.5	3
Either	CE25002	Basic Internship	0-0-0	2	--
Or	CE26002	Mini Project			
CE25004		Grand Viva Level - 1	0-0-0	1	--
EA2700B*		EAA Courses	0-0-0	0.5	--
			Total	**25**	

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – V				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31001	Start-Up and IPR	2-0-0	2	2
CE31001	Structural Analysis-II	4-0-0	4	4
CE31003	Design of Structures-II	4-0-0	4	4
CE31005	Geotechnical Engineering-II	3-0-0	3	3
CE31007	Estimation & Costing	3-0-0	3	3
CE3300X*	Professional Depth Course -1	3-0-0	3	3
CE32001	Concrete Testing Lab	0-0-3	1.5	3
CE32003	Computational Structural Engineering Lab	0-0-3	1.5	3
CE32005	Environmental Engineering Lab	0-0-3	1.5	3
CE32007	Geotechnical Engineering Lab-I	0-0-3	1.5	3
		Total	**25**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Semester – VI				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31002	Business Management	3-0-0	3	3
CE31002	Railway & Airport Engineering	3-0-0	3	3
CE31004	Water Resources Engineering	4-0-0	4	4
CE3300Y*	Professional Depth Course -2	3-0-0	3	3
CE3300Y*	Professional Depth Course -3	3-0-0	3	3
DC3400Q^	Professional Breadth Course -1	3-0-0	3	3
CE32002	Water Resources Engineering Lab	0-0-3	1.5	3
CE32004	Computational Geotechnical Engineering Lab	0-0-3	1.5	3
CE32006	Traffic Engineering Lab	0-0-3	1.5	3
CE32008	Geotechnical Engineering Lab-II	0-0-3	1.5	3
		Total	**25**	

Y* → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-1**

DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VII				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
CE41001	Sanitation Engineering	3-0-0	3	3
CE4300X* / MOOCS-M*	Professional Depth Course -4	3-0-0	3	3
CE4300X* / MOOCS-M*	Professional Depth Course -5	3-0-0	3	3
DC4300P^ / MOOCS-M*	Professional Breadth Course -2	3-0-0	3	3
CE 42001	Computational Water Resources Engineering Lab	0-0-4	2	2
CE45001	Summer/Winter Internship	0-0-0	1	--
CE45003	Major Project	0-0-0	9	--
		Total	**24**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-2**
P^ → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
M* → 1/3/5/7/9/11/ …, based on the numbers of MOOCS courses taken in odd semester
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VIII					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
Category – I Students: Students not opting for Job / Research Internship					
DC4400Q^ / MOOCS-N*		Professional Breadth Course -3	3-0-0	3	3
Either	DC4400Q^ / MOOCS-N*	Professional Breadth Course -4	3-0-0	3	3
or	CE46002	Capstone Project	0-0-0	3	--
CE45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**
Category – II Students: Students opting for Job / Research Internship					
MOOCS-N*		Courses offered under SWAYAM and NPTEL	L-T-P	3	--
CE45002		Job/Research Internship	0-0-0	3	--
CE45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**

N* → 2/4/6/8/10/12/ …, based on the numbers of MOOCS courses taken in even semester
Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

N.B. → The MOOCs courses must be recommended by the DUPC of the Department before course registration

Extra Academic Activity (EAA) Courses

EAA Basket	Course Code				Credits
	1st Year		2nd Year		
	Odd Sem	Even Sem	Odd Sem	Even Sem	
NCC	EA17001	EA17002	EA27001	EA27002	1/0.5
NSS	EA17003	EA17004	EA27003	EA27004	1/0.5
Self-Defence	EA17005	EA17006	EA27005	EA27006	1/0.5
Yoga	EA17007	EA17008	EA27007	EA27008	1/0.5
Personality Development	EA17009	EA17010	EA27009	EA27010	1/0.5
Professional Ethics	EA17011	EA17012	EA27011	EA27012	1/0.5
Indian Knowledge System	EA17013	EA17014	EA27013	EA27014	1/0.5
Intellectual Property Rights	EA17015	EA17016	EA27015	EA27016	1/0.5
Indian Language (Sanskrit)	EA17017	EA17018	EA27017	EA27018	1/0.5
Foreign Language (German/ Spanish/ etc.)	EA17019	EA17020	EA27019	EA27020	1/0.5
Indian Constitution	EA17021	EA17022	EA27021	EA27022	1/0.5
Dance and Theatre	EA17023	EA17024	EA27023	EA27024	1/0.5
Music	EA17025	EA17026	EA27025	EA27026	1/0.5
Fine Arts	EA17027	EA17028	EA27027	EA27028	1/0.5
Entrepreneurship	EA17029	EA17030	EA27029	EA27030	1/0.5
Games & Sports	EA17031	EA17032	EA27031	EA27032	1/0.5
Healthcare for Professionals	EA17033	EA17034	EA27033	EA27034	1/0.5

N.B.: The course code for a particular EAA Course may change depending upon the year and semester in which that course is made available for choosing as an option.

Course Structure :: B.Tech. Computer Science & Engineering

Semester – I				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11001	Algebra and Calculus	3-0-0	3	3
PH11001	Wave Mechanics and Optics	3-0-0	3	3
CS11001	Programming and Data Structure	2-0-2	3	4
HS11001	English for Technical Communication	2-0-2	3	4
CS11003	Foundation of Data Science	3-0-0	3	3
CE12001	Computer Aided Drawing & Graphics	1-0-2	2	3
PH12001	Physics Lab	0-0-2	1	2
EA1700A*	EAA Course	0-0-0	1	--
		Total	**19**	**22**

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – II				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11002	Numerical and Mathematical Methods for Differential Equations	3-0-0	3	3
CY11002	Engineering Chemistry	3-0-0	3	3
ME11002	Engineering Mechanics	3-0-0	3	3
EE11002	Electrical & Electronics Science	3-0-0	3	3
CS11004	Discrete Structure	3-0-0	3	3
ME12002	Workshop Practice	0-0-3	1	3
EE12002	Electrical & Electronics Science Lab	0-0-2	1	2
CY12002	Chemistry Lab	0-0-2	1	2
EA1700B*	EAA Courses	0-0-0	1	--
		Total	**19**	**22**

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – III				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA21001	Applied Mathematical Analysis and Statistics	3-0-0	3	3
HS21001	Engineering Economics	3-0-0	3	3
CS21001	Data Structures and Algorithms	3-1-0	4	4
CS21003	Digital Logic and Microprocessor	3-1-0	4	4
CS21005	Object-Oriented Programming	2-0-2	3	4
CS21007	Introduction to Data Communication	2-0-2	3	4
CS22001	Data Structures and Algorithms Lab	0-0-3	1.5	3
CS22003	Digital Logic and Microprocessor Lab	0-0-3	1.5	3
CS22005	Computational Tools and Programming Lab	0-0-3	1.5	3
EA2700A*	EAA Courses	0-0-0	0.5	--
		Total	**25**	

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – IV					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
CE21002		Environmental Science	2-0-0	2	2
CS21002		Computer Architecture and Organisation	3-0-0	3	3
CS21004		Design and Analysis of Algorithms	3-1-0	4	4
CS21006		Database Management System	3-0-0	3	3
CS21008		Artificial Intelligence	3-0-0	3	3
CS22002		Design and Analysis of Algorithms Lab	0-0-3	1.5	3
CS22004		Database Management System Lab	0-0-3	1.5	3
CS22006		Artificial Intelligence Lab	0-0-3	1.5	3
CS22008		Applied Probability Theory Lab	0-0-3	1	3
CS22010		Web Application Development Lab	0-0-2	1	2
Either	CS25002	Basic Internship	0-0-0	2	--
Or	CS26002	Mini Project			
CS25004		Grand Viva Level - 1	0-0-0	1	--
EA2700B*		EAA Courses	0-0-0	0.5	--
			Total	**25**	

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – V				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31001	Start-Up and IPR	2-0-0	2	2
CS31001	Computer Network		4	
CS31003	Operating System		3	
CS31005	Formal Language Automata Theory		4	
CS31007	Software Engineering		3	
CS3300X*	Professional Depth Course -1	3-0-0	3	3
CS32001	Computer Network Lab		2	
CS32003	Operating System Lab		2	
CS32005	Multimedia Tools & Application Lab		2	
		Total	**25**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Semester – VI				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31002	Business Management	3-0-0	3	3
CS31002	Compiler Design		4	
CS31004	Machine Learning		3	
CS3300Y*	Professional Depth Course -2	3-0-0	3	3
CS3300Y*	Professional Depth Course -3	3-0-0	3	3
DC3400Q^	Professional Breadth Course -1	3-0-0	3	3
CS32002	Compiler Design Lab		2	
CS32004	Machine Learning Lab		2	
CS32006	Object-Oriented Design and Analysis Lab		2	
		Total	**25**	

Y* → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-1**

DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VII				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
CS41001	Computer Graphics		3	
CS4300X* / MOOCS-M*	Professional Depth Course -4	3-0-0	3	3 / --
CS4300X* / MOOCS-M*	Professional Depth Course -5	3-0-0	3	3 / --
DC4400P^ / MOOCS-M*	Professional Breadth Course -2	3-0-0	3	3 / --
CS42001	Computer Graphics Lab		2	
CS45001	Summer/Winter Internship	0-0-0	1	--
CS46001	Major Project	0-0-0	9	--
		Total	**24**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-2**
P^ → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
M* → 1/3/5/7/9/11/ …, based on the numbers of MOOCS courses taken in odd semester
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VIII					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
Category – I Students: Students not opting for Job / Research Internship					
DC4400Q^ / MOOCS-N*		Professional Breadth Course -3	3-0-0	3	3 / --
Either	DC4400Q^ / MOOCS-N*	Professional Breadth Course -4	3-0-0	3	3 / --
or	CS46002	Capstone Project	0-0-0	3	--
CS45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**
Category – II Students: Students opting for Job / Research Internship					
MOOCS-N*		Courses offered under SWAYAM and NPTEL	L-T-P	3	--
CS45002		Job/Research Internship	0-0-0	3	--
CS45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**

N* → 2/4/6/8/10/12/ …, based on the numbers of MOOCS courses taken in even semester
Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

N.B. → The MOOCs courses must be recommended by the DUPC of the Department before course registration

Extra Academic Activity (EAA) Courses

EAA Basket	Course Code				Credits
	1st Year		2nd Year		
	Odd Sem	Even Sem	Odd Sem	Even Sem	
NCC	EA17001	EA17002	EA27001	EA27002	1/0.5
NSS	EA17003	EA17004	EA27003	EA27004	1/0.5
Self-Defence	EA17005	EA17006	EA27005	EA27006	1/0.5
Yoga	EA17007	EA17008	EA27007	EA27008	1/0.5
Personality Development	EA17009	EA17010	EA27009	EA27010	1/0.5
Professional Ethics	EA17011	EA17012	EA27011	EA27012	1/0.5
Indian Knowledge System	EA17013	EA17014	EA27013	EA27014	1/0.5
Intellectual Property Rights	EA17015	EA17016	EA27015	EA27016	1/0.5
Indian Language (Sanskrit)	EA17017	EA17018	EA27017	EA27018	1/0.5
Foreign Language (German/ Spanish/ etc.)	EA17019	EA17020	EA27019	EA27020	1/0.5
Indian Constitution	EA17021	EA17022	EA27021	EA27022	1/0.5
Dance and Theatre	EA17023	EA17024	EA27023	EA27024	1/0.5
Music	EA17025	EA17026	EA27025	EA27026	1/0.5
Fine Arts	EA17027	EA17028	EA27027	EA27028	1/0.5
Entrepreneurship	EA17029	EA17030	EA27029	EA27030	1/0.5
Games & Sports	EA17031	EA17032	EA27031	EA27032	1/0.5
Healthcare for Professionals	EA17033	EA17034	EA27033	EA27034	1/0.5

N.B.: The course code for a particular EAA Course may change depending upon the year and semester in which that course is made available for choosing as an option.

Course Structure :: B.Tech. Electrical Engineering

Semester – I				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11001	Algebra and Calculus	3-0-0	3	3
CY11001	Applied Chemistry	3-0-0	3	3
ME11001	Engineering Mechanics	3-0-0	3	3
EC11001	Electrical and Electronics Technology	3-0-0	3	3
EE11001	Fundamentals of Electrical Engineering & Practices	3-0-0	3	3
ME12001	Workshop Practice	0-0-3	1	3
EC12001	Electrical and Electronics Technology Lab	0-0-2	1	2
CY12001	Chemistry Lab	0-0-2	1	2
EA1700A*	EAA Course	0-0-0	1	--
		Total	**19**	**22**

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – II				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11004	Differential Equations and Mathematical Methods	3-0-0	3	3
PH11002	Wave Mechanics and Solid State Physics	3-0-0	3	3
CS11002	Programming and Data Structure	2-0-2	3	4
HS11002	English for Technical Communication	2-0-2	3	4
EE11004	Electrical Measurement & Measuring Instruments	3-0-0	3	3
CE12002	Computer Aided Drawing & Graphics	1-0-2	2	3
PH12002	Physics Lab	0-0-2	1	2
EA1700B*	EAA Courses	0-0-0	1	--
		Total	**19**	**22**

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – III				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA21003	Mathematical Analysis and Probability Theory	3-0-0	3	3
CE21001	Environmental Science	2-0-0	2	2
EE21001	Circuit Theory	4-0-0	4	4
EE21003	Electrical Machines-I	4-0-0	4	4
EE21005	Signals & Systems	3-0-0	3	3
EE21007	Analog & Digital Electronics	4-0-0	4	4
EE22001	Programming & Simulation Lab	1-0-2	1.5	3
EE22003	Measuring Instruments Lab	0-0-2	1	2
EE22005	Circuit Lab	0-0-2	1	2
EE22007	Analog & Digital Electronics Lab	0-0-2	1	2
EA2700A*	EAA Courses	0-0-0	0.5	--
		Total	**25**	

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – IV					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
HS21002		Engineering Economics	3-0-0	3	3
EE21002		Classical Control Systems	4-0-0	4	4
EE21004		Electrical Machines-II	4-0-0	4	4
EE21006		Power Systems-I	4-0-0	4	4
EE21008		Microprocessor & Embedded Systems	3-0-0	3	3
EE22002		Power Electronic Devices & Fabrication Lab	1-0-2	1.5	3
EE22004		Electrical Machines-I Lab	0-0-2	1	2
EE22006		Microprocessor & Embedded Systems Lab	0-0-2	1	2
Either	EE25002	Basic Internship	0-0-0	2	--
Or	EE26002	Mini Project			
EE25004		Grand Viva Level - 1	0-0-0	1	--
EA2700B*		EAA Courses	0-0-0	0.5	--
			Total	**25**	

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – V				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31001	Business Management	3-0-0	3	3
EE31001	Power Electronics	4-0-0	4	4
EE31003	Power Systems-II	4-0-0	4	4
EE31005	Modern Control Systems	4-0-0	4	4
EE31007	Digital Signal Processing	3-0-0	3	3
EE3300X*	Professional Depth Course -1	3-0-0	3	3
EE32001	Electrical Machines-II Lab	1-0-2	1.5	3
EE32003	Control Systems Lab	1-0-2	1.5	3
EE32005	Power Converters Lab	0-0-2	1	2
		Total	**25**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Semester – VI				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31002	Start-Up and IPR	2-0-0	2	2
EE31002	Industrial Drives	4-0-0	4	4
EE31004	Switchgear & Protection	4-0-0	4	4
EE3300Y*	Professional Depth Course -2	3-0-0	3	3
EE3300Y*	Professional Depth Course -3	3-0-0	3	3
DC3400Q^	Professional Breadth Course -1	3-0-0	3	3
EE32002	Industrial Drives Lab	1-0-2	1.5	3
EE32004	Power Systems Lab	1-0-2	1.5	3
EE32006	Signal & Image Processing lab	1-0-2	1.5	3
EE32008	Technical Skills Lab	1-0-2	1.5	3
		Total	**25**	

Y* → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-1**

DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VII				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
EE41001	Analog & Digital Communication	3-0-0	3	3
EE4300X* / MOOCS-M*	Professional Depth Course -4	3-0-0	3	3
EE4300X* / MOOCS-M*	Professional Depth Course -5	3-0-0	3	3
DC4400P^ / MOOCS-M*	Professional Breadth Course -2	3-0-0	3	3
EE42001	Electrical System Design lab	0-0-1	1	1
EE42003	High Voltage Lab	0-0-1	1	1
EE45001	Summer/Winter Internship	0-0-0	1	--
EE46001	Major Project	0-0-0	9	--
		Total	**24**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-2**
P^ → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
M* → 1/3/5/7/9/11/ …, based on the numbers of MOOCS courses taken in odd semester
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VIII					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
Category – I Students: Students not opting for Job / Research Internship					
DC4400Q^ / MOOCS-N*		Professional Breadth Course -3	3-0-0	3	3 / --
Either	DC4400Q^ / MOOCS-N*	Professional Breadth Course -4	3-0-0	3	3 / --
or	EE46002	Capstone Project	0-0-0	3	--
EE45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**
Category – II Students: Students opting for Job / Research Internship					
MOOCS-N*		Courses offered under SWAYAM and NPTEL	L-T-P	3	--
EE45002		Job/Research Internship	0-0-0	3	--
EE45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**

N* → 2/4/6/8/10/12/ …, based on the numbers of MOOCS courses taken in even semester
Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

N.B. → The MOOCs courses must be recommended by the DUPC of the Department before course registration

Extra Academic Activity (EAA) Courses

EAA Basket	Course Code				Credits
	1st Year		2nd Year		
	Odd Sem	Even Sem	Odd Sem	Even Sem	
NCC	EA17001	EA17002	EA27001	EA27002	1/0.5
NSS	EA17003	EA17004	EA27003	EA27004	1/0.5
Self-Defence	EA17005	EA17006	EA27005	EA27006	1/0.5
Yoga	EA17007	EA17008	EA27007	EA27008	1/0.5
Personality Development	EA17009	EA17010	EA27009	EA27010	1/0.5
Professional Ethics	EA17011	EA17012	EA27011	EA27012	1/0.5
Indian Knowledge System	EA17013	EA17014	EA27013	EA27014	1/0.5
Intellectual Property Rights	EA17015	EA17016	EA27015	EA27016	1/0.5
Indian Language (Sanskrit)	EA17017	EA17018	EA27017	EA27018	1/0.5
Foreign Language (German/ Spanish/ etc.)	EA17019	EA17020	EA27019	EA27020	1/0.5
Indian Constitution	EA17021	EA17022	EA27021	EA27022	1/0.5
Dance and Theatre	EA17023	EA17024	EA27023	EA27024	1/0.5
Music	EA17025	EA17026	EA27025	EA27026	1/0.5
Fine Arts	EA17027	EA17028	EA27027	EA27028	1/0.5
Entrepreneurship	EA17029	EA17030	EA27029	EA27030	1/0.5
Games & Sports	EA17031	EA17032	EA27031	EA27032	1/0.5
Healthcare for Professionals	EA17033	EA17034	EA27033	EA27034	1/0.5

N.B.: The course code for a particular EAA Course may change depending upon the year and semester in which that course is made available for choosing as an option.

Course Structure :: B.Tech. Electronics & Communication Engineering

Semester – I				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11001	Algebra and Calculus	3-0-0	3	3
CY11001	Applied Chemistry	3-0-0	3	3
ME11001	Engineering Mechanics	3-0-0	3	3
EC11001	Electrical and Electronics Technology	3-0-0	3	3
EC11002	Semiconductor Devices and Applications	3-0-0	3	3
ME12001	Workshop Practice	0-0-3	1	3
EC12001	Electrical and Electronics Technology Lab	0-0-2	1	2
CY12001	Chemistry Lab	0-0-2	1	2
EA1700A*	EAA Course	0-0-0	1	--
		Total	**19**	**22**

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – II				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11004	Differential Equations and Mathematical Methods	3-0-0	3	3
PH11002	Wave Mechanics and Solid State Physics	3-0-0	3	3
CS11002	Programming and Data Structure	2-0-2	3	4
HS11002	English for Technical Communication	2-0-2	3	4
EC11004	Fundamentals of Analog and Digital Circuits	3-0-0	3	3
CE12002	Computer Aided Drawing & Graphics	1-0-2	2	3
PH12002	Physics Lab	0-0-2	1	2
EA1700B*	EAA Courses	0-0-0	1	--
		Total	**19**	**22**

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – III				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA21003	Mathematical Analysis and Probability Theory	3-0-0	3	3
CE21001	Environmental Science	2-0-0	2	2
EC21001	Digital System Design	3-0-0	3	3
EC21003	Electronic Materials and Devices	3-0-0	3	3
EC21005	Signals & Systems	3-0-0	3	3
EC21007	Analog Integrated Circuit Design	4-0-0	4	4
EC22001	Analog Integrated Circuit Design Lab	0-0-3	2.5	3
EC22003	Digital System Design Lab	0-0-2	2	2
EC22005	Signals & Systems Lab	0-0-2	2	2
EA2700A*	EAA Courses	0-0-0	0.5	--
		Total	**25**	

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – IV					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
HS21002		Engineering Economics	3-0-0	3	3
EC21002		Electromagnetic Theory and Wave Propagation	3-0-0	3	3
EC21004		Microprocessor and Micro-controller	3-0-0	3	3
EC21006		Communication Engineering	3-0-0	3	3
EC21008		Control Systems	3-0-0	3	3
EC22002		Microprocessor and Micro-controller Lab	0-0-3	2.5	3
EC22004		Control Systems Lab	0-0-2	2	2
EC22006		Communication Engineering Lab	0-0-2	2	2
Either	EC25002	Basic Internship	0-0-0	2	--
Or	EC26002	Mini Project			
EC25004		Grand Viva Level - 1	0-0-0	1	--
EA2700B*		EAA Courses	0-0-0	0.5	--
			Total	**25**	

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – V				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31001	Business Management	3-0-0	3	3
EC31001	Advanced Communication Engineering	3-0-0	3	3
EC31003	Probability Theory and Random Process	4-0-0	4	4
EC31005	VLSI Design	3-0-0	3	3
EC31007	Digital Signal Processing	3-0-0	3	3
EC3300X*	Professional Depth Course -1	3-0-0	3	3
EC32001	Digital Signal Processing Lab	0-0-2	2	2
EC32003	Advanced Communication Engineering Lab	0-0-2	2	2
EC32005	VLSI Design Lab	0-0-2	2	2
		Total	**25**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Semester – VI				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31002	Start-Up and IPR	2-0-0	2	2
EC31002	Data Communication Networks	2-0-0	2	2
EC31004	Embedded System and IOT	3-0-0	3	3
EC31006	VLSI Technology	3-0-0	3	3
EC3300Y*	Professional Depth Course -2	3-0-0	3	3
EC3300Y*	Professional Depth Course -3	3-0-0	3	3
DC3400Q^	Professional Breadth Course -1	3-0-0	3	3
EC32002	Electronic Design Lab	0-0-3	3	3
EC32004	Embedded System & IOT Lab	0-0-3	3	3
		Total	**25**	

Y* → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-1**

DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VII				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
EC41001	Optical Communication and Networks	3-0-0	3	3
EC4300X* / MOOCS-M*	Professional Depth Course -4	3-0-0	3	3 / --
EC4300X* / MOOCS-M*	Professional Depth Course -5	3-0-0	3	3 / --
DC4400P^ / MOOCS-M*	Professional Breadth Course -2	3-0-0	3	3 / --
EC42001	Optical Communication and Networks Lab	0-0-2	2	2
EC45001	Summer/Winter Internship	0-0-0	1	--
EC46001	Major Project	0-0-0	9	--
		Total	**24**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-2**
P^ → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
M* → 1/3/5/7/9/11/ …, based on the numbers of MOOCS courses taken in odd semester
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VIII					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
Category – I Students: Students not opting for Job / Research Internship					
DC4400Q^ / MOOCS-N*		Professional Breadth Course -3	3-0-0	3	3 / --
Either	DC4400Q^ / MOOCS-N*	Professional Breadth Course -4	3-0-0	3	3 / --
or	EC46002	Capstone Project	0-0-0	3	--
EC45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**
Category – II Students: Students opting for Job / Research Internship					
MOOCS-N*		Courses offered under SWAYAM and NPTEL	L-T-P	3	--
EC45002		Job/Research Internship	0-0-0	3	--
EC45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**

N* → 2/4/6/8/10/12/ …, based on the numbers of MOOCS courses taken in even semester
Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

N.B. → The MOOCs courses must be recommended by the DUPC of the Department before course registration

Extra Academic Activity (EAA) Courses

EAA Basket	Course Code				Credits
	1st Year		2nd Year		
	Odd Sem	Even Sem	Odd Sem	Even Sem	
NCC	EA17001	EA17002	EA27001	EA27002	1/0.5
NSS	EA17003	EA17004	EA27003	EA27004	1/0.5
Self-Defence	EA17005	EA17006	EA27005	EA27006	1/0.5
Yoga	EA17007	EA17008	EA27007	EA27008	1/0.5
Personality Development	EA17009	EA17010	EA27009	EA27010	1/0.5
Professional Ethics	EA17011	EA17012	EA27011	EA27012	1/0.5
Indian Knowledge System	EA17013	EA17014	EA27013	EA27014	1/0.5
Intellectual Property Rights	EA17015	EA17016	EA27015	EA27016	1/0.5
Indian Language (Sanskrit)	EA17017	EA17018	EA27017	EA27018	1/0.5
Foreign Language (German/ Spanish/ etc.)	EA17019	EA17020	EA27019	EA27020	1/0.5
Indian Constitution	EA17021	EA17022	EA27021	EA27022	1/0.5
Dance and Theatre	EA17023	EA17024	EA27023	EA27024	1/0.5
Music	EA17025	EA17026	EA27025	EA27026	1/0.5
Fine Arts	EA17027	EA17028	EA27027	EA27028	1/0.5
Entrepreneurship	EA17029	EA17030	EA27029	EA27030	1/0.5
Games & Sports	EA17031	EA17032	EA27031	EA27032	1/0.5
Healthcare for Professionals	EA17033	EA17034	EA27033	EA27034	1/0.5

N.B.: The course code for a particular EAA Course may change depending upon the year and semester in which that course is made available for choosing as an option.

Course Structure :: B.Tech. Electronics & Instrumentation Engineering

Semester – I				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11001	Algebra and Calculus	3-0-0	3	3
CY11001	Applied Chemistry	3-0-0	3	3
ME11001	Engineering Mechanics	3-0-0	3	3
EC11001	Electrical and Electronics Technology	3-0-0	3	3
EI11001	Measurement-I	3-0-0	3	3
ME12001	Workshop Practice	0-0-3	1	3
EC12001	Electrical and Electronics Technology Lab	0-0-2	1	2
CY12001	Chemistry Lab	0-0-2	1	2
EA1700A*	EAA Course	0-0-0	1	--
		Total	**19**	**22**

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – II				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11004	Differential Equations and Mathematical Methods	3-0-0	3	3
PH11002	Wave Mechanics and Solid State Physics	3-0-0	3	3
CS11002	Programming and Data Structure	2-0-2	3	4
HS11002	English for Technical Communication	2-0-2	3	4
EI11002	Measurement-II	3-0-0	3	3
CE12002	Computer Aided Drawing & Graphics	1-0-2	2	3
PH12002	Physics Lab	0-0-2	1	2
EA1700B*	EAA Courses	0-0-0	1	--
		Total	**19**	**22**

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – III				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA21003	Mathematical Analysis and Probability Theory	3-0-0	3	3
CE21001	Environmental Science	2-0-0	2	2
EI21001	Analog Electronics	3-0-0	3	3
EI21003	Digital Electronics	3-0-0	3	3
EI21005	Sensors & Transducers	3-0-0	3	3
EI21007	Signals & Systems	3-0-0	3	3
EI22001	Measurement Lab	0-0-2	1.5	2
EI22003	Analog Electronics Lab	0-0-2	1.5	2
EI22005	Digital Electronics Lab	0-0-2	1.5	2
EI22007	Sensors & Transducers Lab	0-0-2	1.5	2
EI22009	Computational & Simulation Lab	0-0-2	1.5	2
EA2700A*	EAA Courses	0-0-0	0.5	--
		Total	**25**	

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – IV					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
HS21002		Engineering Economics	3-0-0	3	3
EI21002		Circuits & Networks	3-0-0	3	3
EI21004		Control Systems	3-0-0	3	3
EI21006		Microprocessors & Microcontrollers	3-0-0	3	3
EI21008		Industrial Instrumentation	3-0-0	3	3
EI22002		Circuits & Networks Lab	0-0-2	1.5	2
EI22004		Control Systems Lab	0-0-2	1.5	2
EI22006		Microprocessors & Microcontrollers Lab	0-0-2	1.5	2
EI22008		Instrumentation Lab	0-0-2	1.5	2
EI22010		Design Thinking Lab	0-0-2	0.5	2
Either	EI25002	Basic Internship	0-0-0	2	--
Or	EI26002	Mini Project			
EI25004		Grand Viva Level - 1	0-0-0	1	--
EA2700B*		EAA Courses	0-0-0	0.5	--
			Total	**25**	

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – V				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31001	Business Management	3-0-0	3	3
EI31001	Power Electronics & Drives	4-0-0	4	4
EI31003	Communication & Telemetry	4-0-0	4	4
EI31005	Process Control & Automation	4-0-0	4	4
EI31007	Advanced Instrumentation	3-0-0	3	3
EI3300X*	Professional Depth Course -1	3-0-0	3	3
EI32001	Power Electronics Lab	0-0-2	1.5	2
EI32003	Communication & Telemetry Lab	0-0-2	1	2
EI32005	Process Control & Automation Lab	0-0-2	1.5	2
		Total	**25**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Semester – VI				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31002	Start-Up and IPR	2-0-0	2	2
EI31002	Digital Signal Processing	3-0-0	3	3
EI31004	State-Space Modelling and Control Design	3-0-0	3	3
EI3300Y*	Professional Depth Course -2	3-0-0	3	3
EI3300Y*	Professional Depth Course -3	3-0-0	3	3
DC3400Q^	Professional Breadth Course -1	3-0-0	3	3
EI32002	Virtual Instrumentation Lab	0-0-2	2	2
EI32004	Materials Science Lab	0-0-2	2	2
EI32006	Digital Logic Design with Verilog	0-0-2	2.5	2
EI32008	Digital Signal Processing Lab	0-0-2	1.5	2
		Total	**25**	

Y* → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**
Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-1**
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VII				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
EI41001	Biomedical Instrumentation	2-0-0	2	2
EI41003	Industrial Safety & Engineering Reliability	2-0-0	2	2
EI4300X* / MOOCS-M*	Professional Depth Course -4	3-0-0	3	3
EI4300X* / MOOCS-M*	Professional Depth Course -5	3-0-0	3	3
DC4400P^ / MOOCS-M*	Professional Breadth Course -2	3-0-0	3	3
EI42001	Biomedical Instrumentation Lab	0-0-2	1	2
EI45001	Summer/Winter Internship	0-0-0	1	--
EI46001	Major Project	0-0-0	9	--
		Total	**24**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-2**
P^ → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
M* → 1/3/5/7/9/11/ …, based on the numbers of MOOCS courses taken in odd semester
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VIII					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
Category – I Students: Students not opting for Job / Research Internship					
DC4400Q^ / MOOCS-N*		Professional Breadth Course -3	3-0-0	3	3 / --
Either	DC4400Q^ / MOOCS-N*	Professional Breadth Course -4	3-0-0	3	3 / --
or	EI46002	Capstone Project	0-0-0	3	--
EI45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**
Category – II Students: Students opting for Job / Research Internship					
MOOCS-N*		Courses offered under SWAYAM and NPTEL	L-T-P	3	--
EI45002		Job/Research Internship	0-0-0	3	--
EI45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**

N* → 2/4/6/8/10/12/ …, based on the numbers of MOOCS courses taken in even semester
Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

N.B. → The MOOCs courses must be recommended by the DUPC of the Department before course registration

Extra Academic Activity (EAA) Courses

EAA Basket	Course Code				Credits
	1st Year		2nd Year		
	Odd Sem	Even Sem	Odd Sem	Even Sem	
NCC	EA17001	EA17002	EA27001	EA27002	1/0.5
NSS	EA17003	EA17004	EA27003	EA27004	1/0.5
Self-Defence	EA17005	EA17006	EA27005	EA27006	1/0.5
Yoga	EA17007	EA17008	EA27007	EA27008	1/0.5
Personality Development	EA17009	EA17010	EA27009	EA27010	1/0.5
Professional Ethics	EA17011	EA17012	EA27011	EA27012	1/0.5
Indian Knowledge System	EA17013	EA17014	EA27013	EA27014	1/0.5
Intellectual Property Rights	EA17015	EA17016	EA27015	EA27016	1/0.5
Indian Language (Sanskrit)	EA17017	EA17018	EA27017	EA27018	1/0.5
Foreign Language (German/ Spanish/ etc.)	EA17019	EA17020	EA27019	EA27020	1/0.5
Indian Constitution	EA17021	EA17022	EA27021	EA27022	1/0.5
Dance and Theatre	EA17023	EA17024	EA27023	EA27024	1/0.5
Music	EA17025	EA17026	EA27025	EA27026	1/0.5
Fine Arts	EA17027	EA17028	EA27027	EA27028	1/0.5
Entrepreneurship	EA17029	EA17030	EA27029	EA27030	1/0.5
Games & Sports	EA17031	EA17032	EA27031	EA27032	1/0.5
Healthcare for Professionals	EA17033	EA17034	EA27033	EA27034	1/0.5

N.B.: The course code for a particular EAA Course may change depending upon the year and semester in which that course is made available for choosing as an option.

Course Structure :: B.Tech. Mechanical Engineering

Semester – I				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11001	Algebra and Calculus	3-0-0	3	3
PH11001	Wave Mechanics and Optics	3-0-0	3	3
CS11001	Programming and Data Structure	2-0-2	3	4
HS11001	English for Technical Communication	2-0-2	3	4
ME11003	Fundamentals of Mechanical Engineering	3-0-0	3	3
CE12001	Computer Aided Drawing & Graphics	1-0-2	2	3
PH12001	Physics Lab	0-0-2	1	2
EA1700A*	EAA Course	0-0-0	1	--
		Total	**19**	**22**

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – II				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA11002	Numerical and Mathematical Methods for Differential Equations	3-0-0	3	3
CY11002	Engineering Chemistry	3-0-0	3	3
ME11002	Engineering Mechanics	3-0-0	3	3
EE11002	Electrical & Electronics Science	3-0-0	3	3
ME11004	Engineering Thermodynamics	3-0-0	3	3
ME12002	Workshop Practice	0-0-3	1	3
EE12002	Electrical & Electronics Science Lab	0-0-2	1	2
CY12002	Chemistry Lab	0-0-2	1	2
EA1700B*	EAA Courses	0-0-0	1	--
		Total	**19**	**22**

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – III				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MA21001	Applied Mathematical Analysis and Statistics	3-0-0	3	3
HS21001	Engineering Economics	3-0-0	3	3
ME21001	Engineering Materials	3-0-0	3	3
ME21003	Mechanics of Solids	3-0-0	3	3
ME21005	Fluid Mechanics	3-0-0	3	3
ME21007	Applied Thermal Engineering	4-0-0	4	4
ME22001	Thermo-Fluid Lab-I	0-0-3	1.5	3
ME22003	Machine Drawing Lab	0-0-3	1.5	3
ME22005	Soft Skill Development	0-0-3	1	2
ME22007	Do It Yourself Lab	0-0-3	1.5	3
EA2700A*	EAA Courses	0-0-0	0.5	--
		Total	**25**	

A* → 1/3/5/7/9/11/ …, based on the courses opted from the EAA Basket

Semester – IV					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
CE21002		Environmental Science	2-0-0	2	2
ME21002		Mechanisms and Machines	4-0-0	4	4
ME21004		Mechatronics	3-0-0	3	3
ME21006		Casting and Joining Processes	3-0-0	3	3
ME21008		Forming Technology	2-0-0	2	2
ME21010		Applied Fluid Mechanics & Machineries	3-0-0	3	3
ME22002		Dynamics of Machines and Control Lab	0-0-3	1.5	3
ME22004		Material Testing Lab	0-0-2	1	2
ME22006		Manufacturing Lab	0-0-2	1	2
ME22008		Thermo-Fluid Lab-II	0-0-3	1	3
Either	ME25002	Basic Internship	0-0-0	2	--
Or	ME26002	Mini Project			
ME25004		Grand Viva Level - 1	0-0-0	1	--
EA2700B*		EAA Courses	0-0-0	0.5	--
			Total	**25**	

B* → 2/4/6/8/10/12/ …, based on the courses opted from the EAA Basket

Semester – V				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31001	Start-Up and IPR	2-0-0	2	2
ME31001	Machining Technology	4-0-0	4	4
ME31003	Heat Transfer	4-0-0	4	4
ME31005	Design of Machine Elements	3-0-0	4	3
ME31007	Robotics and Automation	3-0-0	3	3
ME3300X*	Professional Depth Course -1	3-0-0	3	3
ME32001	Industrial Lecture Series-I	0-0-2	1	2
ME32003	Machining Lab	0-0-3	1.5	3
ME32005	Mechatronics Lab	0-0-3	1	3
ME32007	Heat Transfer Lab	0-0-3	1.5	3
		Total	**25**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Semester – VI				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
MS31002	Business Management	3-0-0	3	3
ME31002	Smart Manufacturing Systems	4-0-0	4	4
ME31004	Design and Analysis of Mechanical Systems	4-0-0	4	4
ME3300Y*	Professional Depth Course -2	3-0-0	3	3
ME3300Y*	Professional Depth Course -3	3-0-0	3	3
DC3400Q^	Professional Breadth Course -1	3-0-0	3	3
ME32002	Industrial Lecture Series-II	0-0-2	1	2
ME32004	Design Lab	0-0-3	1.5	3
ME32006	Simulation Lab	0-0-3	1.5	3
ME32008	Robotics and Automation Lab	0-0-2	1	2
		Total	**25**	

Y* → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-1**

Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-1**

DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VII				
Course Code	**Course name**	**L-T-P**	**Credits**	**Contact Hours**
ME41001	Industrial Engineering and Operations Research	4-0-0	4	4
ME4300X* / MOOCS-M*	Professional Depth Course -4	3-0-0	3	3
ME4300X* / MOOCS-M*	Professional Depth Course -5	3-0-0	3	3
DC4400P^ / MOOCS-M*	Professional Breadth Course -2	3-0-0	3	3
ME42001	Operations Research and Management Lab	0-0-2	1	2
ME45001	Summer/Winter Internship	0-0-0	1	--
ME46001	Major Project	0-0-0	9	--
		Total	**24**	

X* → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Depth (PD) Course Basket-2**
P^ → 1/3/5/7/9/11/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
M* → 1/3/5/7/9/11/ …, based on the numbers of MOOCS courses taken in odd semester
DC → Discipline code of the courses offering Department (e.g., CE/ME/EE/ …)

Semester – VIII					
Course Code		**Course name**	**L-T-P**	**Credits**	**Contact Hours**
Category – I Students: Students not opting for Job / Research Internship					
DC4400Q^ / MOOCS-N*		Professional Breadth Course -3	3-0-0	3	3
Either	DC4400Q^ / MOOCS-N*	Professional Breadth Course -4	3-0-0	3	3
or	ME46002	Capstone Project	0-0-0	3	--
ME45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**
Category – II Students: Students opting for Job / Research Internship					
MOOCS-N*		Courses offered under SWAYAM and NPTEL	L-T-P	3	--
ME45002		Job/Research Internship	0-0-0	3	--
ME45004		Grand Viva Level – 2	0-0-0	2	--
			Total	**8**	**--**

N* → 2/4/6/8/10/12/ …, based on the numbers of MOOCS courses taken in even semester
Q^ → 2/4/6/8/10/12/ …, based on the courses opted from the **Professional Breadth (PB) Course Basket-2**
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Extra Academic Activity (EAA) Courses

EAA Basket	Course Code				Credits
	1st Year		2nd Year		
	Odd Sem	Even Sem	Odd Sem	Even Sem	
NCC	EA17001	EA17002	EA27001	EA27002	1/0.5
NSS	EA17003	EA17004	EA27003	EA27004	1/0.5
Self-Defence	EA17005	EA17006	EA27005	EA27006	1/0.5
Yoga	EA17007	EA17008	EA27007	EA27008	1/0.5
Personality Development	EA17009	EA17010	EA27009	EA27010	1/0.5
Professional Ethics	EA17011	EA17012	EA27011	EA27012	1/0.5
Indian Knowledge System	EA17013	EA17014	EA27013	EA27014	1/0.5
Intellectual Property Rights	EA17015	EA17016	EA27015	EA27016	1/0.5
Indian Language (Sanskrit)	EA17017	EA17018	EA27017	EA27018	1/0.5
Foreign Language (German/ Spanish/ etc.)	EA17019	EA17020	EA27019	EA27020	1/0.5
Indian Constitution	EA17021	EA17022	EA27021	EA27022	1/0.5
Dance and Theatre	EA17023	EA17024	EA27023	EA27024	1/0.5
Music	EA17025	EA17026	EA27025	EA27026	1/0.5
Fine Arts	EA17027	EA17028	EA27027	EA27028	1/0.5
Entrepreneurship	EA17029	EA17030	EA27029	EA27030	1/0.5
Games & Sports	EA17031	EA17032	EA27031	EA27032	1/0.5
Healthcare for Professionals	EA17033	EA17034	EA27033	EA27034	1/0.5

N.B.: The course code for a particular EAA Course may change depending upon the year and semester in which that course is made available for choosing as an option.