MIT Academy of Engineering

An Autonomous Institute affiliated to Savitribai Phule Pune University

CURRICULUM FRAMEWORK (ELECTRONICS & TELECOMMUNICATION ENGINEERING)

The BTECH Program shall be based on the following type of courses

SL. NO.	TYPE OF COURSE	ABBREVIATION
1.	Natural Science	NSC
2.	Engineering Science	ESC
3.	Program Core	PC
4.	Discipline Core	DC
5.	Department Elective	DE
6.	Open Elective	OE
7.	Humanities and Social Science	HSS
8.	Skill Development and Project	SDP

The Course and Credit Distribution shall be as under,

SL. NO.	TYPE OF COURSE	NO. OF COURSES	TOTAL CREDITS	
			NO.	%
1.	Natural Science	4	18	10.96
2.	Engineering Science	4	16	9.76
3.	Program Core	5	19	11.59
4.	Discipline Core	12	48	29.27
5.	Department Elective	2	6	3.66
6.	Open Elective	4	16	9.76
7.	Humanities and Social Science	8/9	17	10.37
8.	Skill Development and Project	10/9	24	14.63
	TOTAL	49	164	100

COURSE DISTRIBUTION : SEMESTER WISE										
SL. NO.	TYPE OF COURSE	NO. OF COURSES/SEMESTER								TOTAL
		1	2	3	4	5	6	7	8	
1.	Natural Science	2	2							**4**
2.	Engineering Science	2	2							**4**
3.	Program Core			3	2					**5**
4.	Discipline Core			2	2	3	3	1	1	**12**
5.	Department Elective							1	1	**2**
6.	Open Elective					1	1	1	1	**4**
7.	Humanities & Social Science	1	1		1	2	1	1/2	1	**8/9**
8.	Skill Development & Project	1	1	1	1	1	1	3/2	1	**10/9**
	TOTAL	**6**	**6**	**6**	**6**	**7**	**6**	**7**	**5**	**49**

CREDIT DISTRIBUTION : SEMESTER WISE										
1 Lecture hour = 1 Credit 2 Lab Hours = 1 Credit 1 Tutorial Hour = 1 Credit										
SL. NO.	TYPE OF COURSE	NO. OF CREDITS/SEMESTER								TOTAL
		1	2	3	4	5	6	7	8	
1.	Natural Science	9	9							**18**
2.	Engineering Science	8	8							**16**
3.	Program Core			11	8					**19**
4.	Discipline Core			8	8	12	12	4	4	**48**
5.	Department Elective							3	3	**6**
6.	Open Elective					4	4	4	4	**16**
7.	Humanities & Social Science	2	2		3	3	2	3	2	**17**
8.	Skill Development & Project	2	2	2	2	2	2	8	4	**24**
	TOTAL	**21**	**21**	**21**	**21**	**21**	**20**	**22**	**17**	**164**

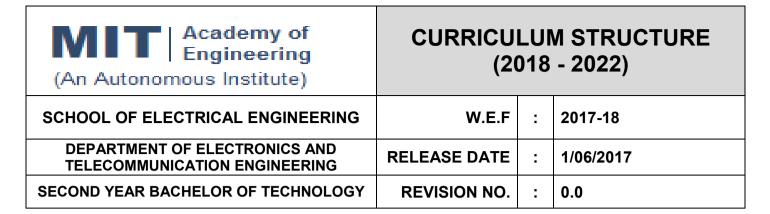| MIT | Academy of Engineering (An Autonomous Institute)	CURRICULUM STRUCTURE (2018 - 2022)		
SCHOOL OF ELECTRICAL ENGINEERING	W.E.F	:	2016-17
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING	RELEASE DATE	:	1/06/2016
FIRST YEAR BACHELOR OF TECHNOLOGY	REVISION NO.	:	0.0

SEMESTER: I

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	P/T*	CREDIT
1.	NSC1	AS101	Mathematics – 1	4	1	5
2.	NSC2	AS102 / AS103	Physics / Chemistry	3	2	4
3.	ESC1	EX101 / CV101	Electrical & Electronics Engg. / Applied Mechanics	3	2	4
4.	ESC2	ME101/ IT101	Engineering Graphics / Computer Programming	2	4	4
5.	HSS1	HP101	Language & Communication – I	1	2	2
6.	SDP1	ME102 / ME103	Experimental Tools & Techniques / Design Thinking	-	4	2
TOTAL				**13**	**15**	**21**

SEMESTER: II

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	P/T*	CREDIT
1.	NSC3	AS104	Mathematics – 2	4	1	5
2.	NSC4	AS103 / AS102	Chemistry / Physics	3	2	4
3.	ESC3	CV101 / EX101	Applied Mechanics / Electrical & Electronics Engg.	3	2	4
4.	ESC4	ME101/ IT101	Engineering Graphics / Computer Programming	2	4	4
5.	HSS2	HP102	Language & Communication – II	1	2	2
6.	SDP2	ME103 / ME102	Design Thinking / Experimental Tools & Techniques	-	4	2
TOTAL				**13**	**15**	**21**

L: Lecture, P: Practical, T: Tutorial, *Applicable for FY BTECH

MIT | Academy of Engineering (An Autonomous Institute)	CURRICULUM STRUCTURE (2018 - 2022)		
SCHOOL OF ELECTRICAL ENGINEERING	**W.E.F**	**:**	**2017-18**
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING	**RELEASE DATE**	**:**	**1/06/2017**
SECOND YEAR BACHELOR OF TECHNOLOGY	**REVISION NO.**	**:**	**0.0**

SEMESTER: III

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	**P**	**CREDIT**
1.	PC1	CH201	Environmental Science	2	2	3
2.	PC2	AS202	Applied Mathematics	3	2	4
3.	PC3	ET201	System Engineering	3	2	4
4.	DC1	ET202	Analog Electronics	3	2	4
5.	DC2	ET203	Digital Systems and Applications	3	2	4
6.	SDP3	ET206	Prototyping	-	4	2
TOTAL				**14**	**14**	**21**

SEMESTER:IV

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	**P**	**CREDIT**
1.	HSS3	HP201	Psychology	3	---	3
2.	PC4	IT201	Engineering Informatics	3	2	4
3.	PC5	ME201	Material Engineering	3	2	4
4.	DC3	ET211	Signals and Systems	2	2	3
5.	DC4	ET212	Network Analysis Techniques	3	2	4
6.	DC5	ET214	Data Structures and Algorithms	-	2	1
7.	SDP4	ET213	Minor Project	---	4	2
TOTAL				**14**	**14**	**21**

L: Lecture, P: Practical

MIT | Academy of Engineering
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CURRICULUM STRUCTURE (2018 - 2022)

SCHOOL OF ELECTRICAL ENGINEERING	W.E.F	:	2018-19
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING	RELEASE DATE	:	1/06/2018
THIRD YEAR BACHELOR OF TECHNOLOGY	REVISION NO.	:	0.0

SEMESTER:V

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	P	CREDIT
1.	DC6	ET301	Control Systems	3	2	4
2.	DC7	ET302	Analog Communication	3	2	4
3.	DC8	ET303	Microcontroller & Application	3	2	4
4.	OE1	ET31#	Open Elective - Refer Annexure	3	2	4
5.	HSS4	HP301	Project Management	1	2	2
6.	HSS6	HP303	Basics of Entrepreneurship	-	2	1
7.	SDP5	ET30#	Skill Development Lab - Refer Annexure	-	4	2
TOTAL				13	16	21

SEMESTER : VI

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	P	CREDIT
1.	DC9	ET321	Digital Communication	3	2	4
2.	DC10	ET322	Digital Signal Processing	3	2	4
3.	DC11	ET323	Antenna Theory & Design	3	2	4
4.	OE2	ET33#	Open Elective - Refer Annexure	3	2	4
5.	HSS5	HP302	Professional Skills	1	2	2
6.	SDP6	ET324	Mini Project	-	4	2
TOTAL				13	14	20

L: Lecture, P: Practical

MIT Academy of Engineering (An Autonomous Institute)	CURRICULUM STRUCTURE (2018 - 2022)		
SCHOOL OF ELECTRICAL ENGINEERING	W.E.F	:	2019-20
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING	RELEASE DATE	:	1/06/2019
FINAL YEAR BACHELOR OF TECHNOLOGY	REVISION NO.	:	0.0

SEMESTER:VII

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	P	CREDIT
1.	DC12	ET401	VLSI Design	3	2	4
2.	DE1	ET41#	Department Elective - Refer Annexure	3	-	3
3.	OE3	ET42#	Open Elective - Refer Annexure	3	2	4
4.	HSS7	HP401	Engineering Economics	2	-	2
5.	HSS8 / SDP7	HP403 / ET403	Business Strategies/ Programming in Java	-	2	1
6.	SDP8	ET402	Project – I	-	8	4
7.	SDP9	ET404	Summer Internship	-	-	4
TOTAL				**11**	**14**	**22**

SEMESTER:VIII

SL. No.	COURSE TYPE	COURSE CODE	COURSE	TEACHING SCHEME		
				L	P	CREDIT
1.	DC13	ET431	Advanced Communication Systems	3	2	4
2.	DE2	ET44#	Department Elective - Refer Annexure	3	-	3
3.	OE4	ET45#	Open Elective - Refer Annexure	3	2	4
4.	HSS9	HP402	Sociology	2	-	2
5.	SDP10	ET432	Project – II	-	8	4
TOTAL				**11**	**12**	**17**

L: Lecture, P: Practical

	CREDITS			
1 Lecture Hour = 1 Credit2 Lab Hours = 1 Credit   1 Tutorial Hour = 1 Credit

SL. NO.	YEAR	SEMESTER		TOTAL
		1	2	
1.	First Year	21	21	**42**
2.	Second Year	21	21	**42**
3.	Third Year	21	20	**41**
4.	Final Year	22	17	**39**
	TOTAL			**164**

	CONTACT HOURS			

SL. NO.	YEAR	SEMESTER		TOTAL
		1	2	
1.	First Year	28	28	**56**
2.	Second Year	28	27	**55**
3.	Third Year	29	27	**56**
4.	Final Year	25	23	**48**
	TOTAL			**215**

ANNEXURE

Natural Science (NSC) : 4 Courses		
1.	AS101	Mathematics – 1
2.	AS102	Mathematics – 2
3.	AS103	Physics
4.	AS104	Chemistry

Engineering Science (ESC) : 6 Courses		
1.	EX101	Electrical and Electronic Engineering
2.	CV101	Applied Mechanics
3.	ME101	Engineering Graphics
4.	IT101	Computer Programming
5.	ME104	Science of Nature or Model Making
6.	CS101	Logic Design

Program Core (PC) : 5 Courses		
1.	CH201	Environmental Science
2.	AS202	Applied Mathematics
3.	ET201	System Engineering
4.	IT201	Engineering Informatics
5.	ME201	Material Engineering

Discipline Core (DC) : 13 Courses		
1.	ET202	Analog Electronics
2.	ET203	Digital Systems & Applications
3.	ET211	Signals and Systems
4.	ET212	Network Analysis Techniques
5.	ET301	Control Systems
6.	ET302	Analog Communication
7.	ET303	Microcontroller & Application
8.	ET321	Digital Communication
9.	ET322	Digital Signal Processing
10.	ET323	Antenna Theory & Design
11.	ET401	VLSI Design
12.	ET431	Advanced Communication Systems
13.	ET214	Data Structures and Algorithms

Department Elective (DE) : 2 Courses		
1.	ET411	Digital Image Processing
	ET412	Microwave Engineering
	ET413	RISC Processors
	ET414	Machine Learning
2.	EX441	Biomedical Engineering
	ET442	Artificial Intelligence
	ET443	Wireless Sensor Network
	ET444	Speech Signal Processing

Open Elective (OE) : 4 Courses		
Sl. No.	**Course Code**	**Course**
1	ET311	Embedded System Programming (ESP)
2	ET331	Embedded Processor
3	ET421	Low-Power SoC Architecture & Applications
4	ET451	Real Time Embedded System
5	ET312	IoT Architecture and Sensors
6	ET332	IoT Network & Protocols
7	ET422	Privacy and Security in IoT
8	ET452	Energy Management for IoT Device
9	EX311	Fundamentals of Robotics
10	EX331	Kinematics and Dynamics of Robotics
11	EX421	Robotics Vision
12	EX451	Intelligent and High Performance Robotics

Open Elective (OE) :Term - I (List of courses)			
Chemical			
1	CH311	Process Modeling and Simulation.	
2	CH312	Piping Engineering	
Civil			
3	CV311	Construction Planning & Management	
Computer			
4	CS311	Descriptive Analytics	
5	CS312	Artificial Intelligence	
Electronics			
6	EX311	Fundamentals of Robotics	
E & TC			
7	ET311	Embedded System Programming (ESP)	
8	ET312	IoT Architecture and Sensors	
IT			
9	IT311	Cryptography & System Security	
Mechanical			
10	ME311	Geometric Modeling & Design	
11	ME312	Fundamentals of Robotics	
12	ME313	Work Process Assessment	

Open Elective (OE) :Term - II			
(List of courses)			
Chemical			
1	CH331	Process Engineering.	
2	CH332	Piping Layout	
Civil			
3	CV331	Operation Research	
Computer			
4	CS331	Predictive Analysis	
5	CS332	Machine Learning	
Electronics			
6	EX331	Kinematics and Dynamics of Robotics	
E & TC			
7	ET331	Embedded Processor	
8	ET332	IoT Network & Protocols	
IT			
9	IT331	Cyber Security	
Mechanical			
10	ME331	Finite Element Analysis	
11	ME332	Kinematics & Dynamics of Robots	
12	ME333	Facility Planning & Design	

Open Elective (OE) :Term - I			
(List of courses)			
Chemical			
1	CH421	Process Optimization	
2	CH422	Piping Design & Engineering	
Civil			
3	CV421	Financial Management	
Computer			
4	CS421	Big Data Analytics	
5	CS422	Deep Learning	
Electronics			
6	EX421	Robotics Vision	
E & TC			
7	ET421	Low-Power SoC Architecture & Applications (SoC&A)	
8	ET422	Privacy and Security in IoT	
IT			
9	IT421	Ethical Hacking & Cyber Laws	
Mechanical			
10	ME421	Computational Fluid Dynamics	
11	ME422	Robotics Vision and Control	
12	ME423	Operations Management	

Open Elective (OE) :Term - II (List of courses)			
Chemical			
1	CH451	Process Intensification & Integration	
2	CH452	Pipeline Engineering	
Civil			
3	CV451	Visualization and Information Exchange	
Computer			
4	CS451	Practitioner's approach for Data analytics	
5	CS452	Pattern Recognition	
Electronics			
6	EX451	Intelligent and High Performance Robotics	
E & TC			
7	ET451	Real-Time Embedded System (RES)	
8	ET452	Energy Management for IoT Devices	
IT			
9	IT451	Cyber Forensics	
Mechanical			
10	ME451	Advanced Analysis	
11	ME452	Intelligent and High Performance Robotics	
12	ME453	Supply Chain Management	

Humanities and Social Science (HSS) : 9 Courses

Sl. No.	Course	
1.	HP101	Language & Communication – I
2.	HP102	Language & Communication – II
3.	HP201	Psychology
4.	HP301	Project Management
5.	HP302	Professional Skills
6.	HP303	Basics of Entrepreneurship
7.	HP401	Engineering Economics
8.	HP402	Sociology
9.	HP403	Business Strategies

Skill Development and Project (SDP) : 10 Courses

Sl. No.	Course	
1.	ME102	Engineering Tools and Techniques
2.	ME103	Design Thinking
3.	ET206	Prototyping
4.	ET213	Minor Project
	ET304	Graphical Programming Lab
5.	ET305	MATLAB
	EX304	Embedded Linux
6.	ET324	Mini Project
7.	ET403	Programming in Java
8.	ET402	Project – I
9.	ET404	Summer Internship
10.	ET432	Project – II