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**MIT**

Academy of  
Engineering

(An Autonomous Institute Affiliated to Savitribai Phule Pune University)

**MIT ACADEMY OF ENGINEERING, ALANDI**

**Curriculum for  
Bachelor of Technology in  
Electronics &  
Telecommunication Engineering**

(Choice Based Credit System)

**REVISION 2019 (1.0)**

(Four Year Curriculum W.E.F., AY: 2019-2020)

**BoS Chairman  
E&TC Engineering**

**Member Secretary  
Academic Council  
Dean Academics**

**Chairman  
Academic Council  
Director MITAOE**



**MIT Academy of Engineering, Alandi, Pune**  
An Autonomous Institute affiliated to Savitribai Phule Pune University

**CURRICULUM FRAMEWORK (REVISION 2019)**

The Bachelor of Technology Program shall be based on the following type of courses.

<b>COURSE DISTRIBUTION : SEMESTER WISE</b>										
<b>S.N.</b>	<b>TYPE OF COURSE</b>	<b>NO. OF COURSES/SEMESTER</b>								<b>TOTAL</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	
1.	Natural Science (NSC)	2	2	1						<b>5</b>
2.	Engineering Science (ESC)	4	3		1					<b>8</b>
3.	Discipline Core (DC)			3	3	3	3	1	1	<b>14</b>
4.	Discipline Elective (DE)							1	1	<b>2</b>
5.	Open Elective (OE)					1	1	1		<b>3</b>
6.	Humanities and Social Science (HSS)		1		1	1	1		2	<b>6</b>
7.	Skill Development and Project (SDP)			3	2	2	2	3	1	<b>13</b>
<b>TOTAL</b>		<b>6</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>6</b>	<b>5</b>	<b>51</b>
<b>AUDIT COURSE</b>			<b>1</b>	<b>2</b>	<b>1</b>	<b>1</b>				<b>5</b>

<b>CREDIT DISTRIBUTION : SEMESTER WISE</b>											
<b>1 Lecture hour = 1 Credit</b>			<b>2 Lab Hours = 1 Credit</b>			<b>1 Tutorial Hour = 1 Credit</b>					
<b>S.N.</b>	<b>TYPE OF COURSE</b>	<b>NO. OF CREDITS/SEMESTER</b>								<b>TOTAL</b>	<b>%</b>
		<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>		
1.	Natural Science (NSC)	8	8	4						<b>20</b>	<b>12.5</b>
2.	Engineering Science (ESC)	13	9		4					<b>26</b>	<b>16.25</b>
3.	Discipline Core (DC)			12	12	11	11	4	4	<b>54</b>	<b>33.75</b>
4.	Discipline Elective (DE)							3	3	<b>6</b>	<b>3.75</b>
5.	Open Elective (OE)					4	4	4		<b>12</b>	<b>7.5</b>
6.	Humanities and Social Science (HSS)	0	2		2	2	2		4	<b>12</b>	<b>7.5</b>
7.	Skill Development and Project (SDP)			5	3	4	4	10	4	<b>30</b>	<b>18.75</b>
<b>TOTAL</b>		<b>21</b>	<b>19</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>21</b>	<b>15</b>	<b>160</b>	<b>100</b>

<b>CREDITS</b>				
<b>1 Lecture Hour = 1 Credit, 2 Lab Hours = 1 Credit, 1 Tutorial Hour = 1 Credit</b>				
<b>SL. NO.</b>	<b>YEAR</b>	<b>SEMESTER</b>		<b>TOTAL</b>
		<b>1</b>	<b>2</b>	
1.	First Year	21/19	19/21	<b>40</b>
2.	Second Year	21	20	<b>41</b>
3.	Third Year	22	22	<b>44</b>
4.	Final Year	21	15	<b>36</b>
<b>TOTAL</b>				<b>161</b>

<b>CONTACT HOURS</b>				
<b>SL. NO.</b>	<b>YEAR</b>	<b>SEMESTER</b>		<b>TOTAL</b>
		<b>1</b>	<b>2</b>	
1.	First Year	29/27	28/30	<b>57</b>
2.	Second Year	31	29	<b>60</b>
3.	Third Year	30	32	<b>62</b>
4.	Final Year	25	20	<b>45</b>
<b>TOTAL</b>				<b>224</b>

<b>ABBREVIATIONS</b>		
1.	MSE	Mid Semester Exam
2.	ESE	End Semester Exam
3.	IA	Internal Assessment
4.	T/P	Term Work / Practical
5.	DM	Demonstration
6.	L	Lecture
7.	P	Practical
8.	T	Tutorial
9.	Lab	Laboratory

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**MIT ACADEMY OF ENGINEERING, ALANDI**

**Curriculum for  
First Year  
Bachelor of Technology**


**REVISION 2019 (1.0)**

**(First Year Curriculum W.E.F., AY: 2019-2020)**

 <b>Academy of Engineering</b> <small>(An Autonomous Institute Affiliated to Savitribai Phule Pune University)</small>	<b>COURSE STRUCTURE (REVISION 2019)</b>			
	<b>SCHOOL OF HUMANITIES AND ENGINEERING SCIENCES</b>	<b>W.E.F</b>	<b>:</b>	<b>2019-2020</b>
<b>FIRST YEAR BACHLEOR OF TECHNOLOGY</b>	<b>RELEASE DATE</b>	<b>:</b>	<b>01/07/2019</b>	
	<b>REVISION NO.</b>	<b>:</b>	<b>1.0</b>	

<b>SEMESTER: I (PART A)</b>												
<b>INDUCTION PROGRAM: 3 WEEKS</b>												
<b>COURSE</b>			<b>TEACHING SCHEME</b>			<b>EXAMINATION SCHEME AND MARKS</b>					<b>CREDIT</b>	
<b>TYPE</b>	<b>CODE</b>	<b>NAME</b>	<b>Hour/Week</b>			<b>THEORY</b>			<b>PRACT</b>			<b>TOTAL</b>
			<b>L</b>	<b>P</b>	<b>T</b>	<b>MSE</b>	<b>ESE</b>	<b>IA</b>	<b>T/P</b>	<b>DM</b>		
NSC1	AS105	Calculus and Differential Equations	3	-	1	20	40	40	50	-	150	4
NSC2	AS106	Engineering Physics	3	2	-	20	40	40	50	-	150	4
ESC1	EX102	Electrical and Electronics Engineering	3	2	-	20	40	40	50	-	150	4
ESC2	ME104	Engineering Graphics	2	4	-	-	60	40	100	-	200	4
ESC3	CS101	Logic Development-C Programming	1	4	-	-	40	-	100	-	140	3
ESC4	ME105	Experimental Tools and Techniques	-	4	-	-	-	-	40	60	100	2
<b>TOTAL</b>			<b>12</b>	<b>16</b>	<b>1</b>	<b>60</b>	<b>220</b>	<b>160</b>	<b>390</b>	<b>60</b>	<b>890</b>	<b>21</b>

<b>SEMESTER: II (PART A)</b>												
<b>COURSE</b>			<b>TEACHING SCHEME</b>			<b>EXAMINATION SCHEME AND MARKS</b>					<b>CREDIT</b>	
<b>TYPE</b>	<b>CODE</b>	<b>NAME</b>	<b>Hour/Week</b>			<b>THEORY</b>			<b>PRACT</b>			<b>TOTAL</b>
			<b>L</b>	<b>P</b>	<b>T</b>	<b>MSE</b>	<b>ESE</b>	<b>IA</b>	<b>T/P</b>	<b>DM</b>		
NSC3	AS107	Statistics and Integral Calculus	3	-	1	20	40	40	50	-	150	4
NSC4	CH101	Science of Nature	3	2	-	20	40	40	50	-	150	4
ESC4	CV102	Applied Mechanics	3	2	-	20	40	40	50	-	150	4
HSS1	HP103/4/5	English for Engineers //(German/Japanese)	0	4	-	-	-	-	100	-	100	2
ESC6	CS102	Applications Programming -Python	1	4	-	-	40	-	100	-	140	3
ESC7	ME106	Design Thinking	-	4	-	-	-	-	40	60	100	2
HSS2	HP106	Indian Constitution	1	-	-	-	-	-	-	-	<b>Audit</b>	
<b>TOTAL</b>			<b>11</b>	<b>16</b>	<b>1</b>	<b>60</b>	<b>160</b>	<b>120</b>	<b>390</b>	<b>60</b>	<b>790</b>	<b>19</b>

 <b>Academy of Engineering</b> <small>(An Autonomous Institute Affiliated to Savitribai Phule Pune University)</small>	<b>COURSE STRUCTURE (REVISION 2019)</b>			
	<b>SCHOOL OF HUMANITIES AND ENGINEERING SCIENCES</b>	<b>W.E.F</b>	<b>:</b>	<b>2019-2020</b>
<b>FIRST YEAR BACHLEOR OF TECHNOLOGY</b>	<b>RELEASE DATE</b>	<b>:</b>	<b>01/07/2019</b>	
	<b>REVISION NO.</b>	<b>:</b>	<b>1.0</b>	

SEMESTER: I (PART B)												
INDUCTION PROGRAM: 3 WEEKS												
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS						CREDIT
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT		TOTAL	
			L	P	T	MSE	ESE	IA	T/P	DM		
NSC1	AS105	Calculus and Differential Equations	3	-	1	20	40	40	50	-	150	4
NSC4	CH101	Science of Nature	3	2	-	20	40	40	50	-	150	4
ESC4	CV102	Applied Mechanics	3	2	-	20	40	40	50	-	150	4
HSS1	HP103/4/5	English for Engineers (German/Japanese)	0	4	-	-	-	-	100	-	100	2
ESC3	CS101	Logic Development-C Programming	1	4	-	-	40	-	100	-	140	3
ESC7	ME106	Design Thinking	-	4	-	-	-	-	40	60	100	2
<b>TOTAL</b>			<b>10</b>	<b>16</b>	<b>1</b>	<b>60</b>	<b>160</b>	<b>120</b>	<b>390</b>	<b>60</b>	<b>790</b>	<b>19</b>

SEMESTER: II (PART B)												
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS						CREDIT
PE	CODE	NAME	Hour/Week			THEORY			PRACT		TOTAL	
			L	P	T	MSE	ESE	IA	T/P	DM		
NSC3	AS107	Statistics and Integral Calculus	3	-	1	20	40	40	50	-	150	4
NSC2	AS106	Engineering Physics	3	2	-	20	40	40	50	-	150	4
ESC1	EX102	Electrical and Electronics Engineering	3	2	-	20	40	40	50	-	150	4
ESC2	ME104	Engineering Graphics	2	4	-	-	60	40	100	-	200	4
ESC5	CS102	Applications Programming -Python	1	4	-	-	40	-	100	-	140	3
ESC4	ME105	Experimental Tools and Techniques	-	4	-	-	-	-	40	60	100	2
HSS2	HP106	Indian Constitution	1	-	-	-	-	-	-	-	-	<b>Audit</b>
<b>TOTAL</b>			<b>13</b>	<b>16</b>	<b>1</b>	<b>60</b>	<b>220</b>	<b>160</b>	<b>390</b>	<b>60</b>	<b>890</b>	<b>21</b>

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**MIT ACADEMY OF ENGINEERING, ALANDI**

**Curriculum for  
Second Year  
Bachelor of Technology**

**REVISION 2019 (1.0)**

(Second Year Curriculum W.E.F., AY: 2020-2021)



**SCHOOL OF ELECTRONICS &  
TELECOMMUNICATION ENGINEERING**
**W.E.F**
**:**
**2020-2021**
**SECOND YEAR BACHLEOR OF TECHNOLOGY  
IN ELECTRONICS & TELECOMMUNICATION  
ENGINEERING**
**RELEASE DATE**
**:**
**01/06/2020**
**REVISION NO.**
**:**
**1.0**
**SEMESTER: III**
**SUMMER INTERNSHIP**

COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS					CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT			TOTAL
			L	P	T	MSE	ESE	IA	T/P	DM		
NSC5	AS204	Applied Mathematics	3	2	-	35	35	30	50	0	150	4
DC01	ET221	Electronic Devices and Circuits	3	2	-	35	35	30	50	0	150	4
DC02	ET222	Digital Systems and Applications	3	2	-	35	35	30	50	0	150	4
DC03	ET223	Signals & Systems	3	2	-	35	35	30	50	0	150	4
SDP1	ET224	Digital Prototyping	0	4	-	0	0	25	0	50	75	2
SDP2	ET230	Minor Project Design	0	2	-	0	0	0	0	50	50	1
SDP3	ET225	Skill Development Course-Data Structures & Algorithms	0	4	-	0	0	25	0	50	75	2
ESC9	CV203	Environmental Sciences	1	0	-	-	-	-	-	-	Audit	
<b>TOTAL</b>			<b>13</b>	<b>18</b>	<b>0</b>	<b>140</b>	<b>140</b>	<b>170</b>	<b>200</b>	<b>150</b>	<b>800</b>	<b>21</b>

**SEMESTER: IV**

COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS					CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT			TOTAL
			L	P	T	MSE	ESE	IA	T/P	DM		
ESC8	IT221	Engineering Informatics	3	2	-	35	35	30	50	0	150	4
DC04	ET231	Electromagnetic Theory	3	0	-	35	35	30	0	0	100	3
DC05	ET232	Network Analysis Techniques	3	2	-	35	35	30	50	0	150	4
DC06	ET233	Microcontroller & Interfacing	3	2	-	35	35	30	50	0	150	4
SDP4	ET235	Rapid Prototyping	0	4	-	0	0	25	0	50	75	2
SDP5	ET240	Minor Project Implementation	0	2	-	0	0	0	0	50	50	1
HSS3	HP202	Professional Skill	0	4	-	0	0	25	0	50	75	2
HSS4	HP203	Liberal Learning	1	0	-	-	-	-	-	-	Audit	
<b>TOTAL</b>			<b>13</b>	<b>16</b>	<b>0</b>	<b>140</b>	<b>140</b>	<b>170</b>	<b>150</b>	<b>150</b>	<b>750</b>	<b>20</b>

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**MIT ACADEMY OF ENGINEERING, ALANDI**

**Curriculum for  
Third Year  
Bachelor of Technology**

**REVISION 2019 (1.0)**

(Third Year Curriculum W.E.F., AY: 2021-2022)

 <b>Academy of Engineering</b> Autonomous Institute Affiliated to SPPU	<b>COURSE STRUCTURE (REVISION 2019)</b>			
	<b>SCHOOL OF ELECTRONICS &amp; TELECOMMUNICATION ENGINEERING</b>	<b>W.E.F</b>	<b>:</b>	<b>2021-2022</b>
<b>THIRD YEAR BACHLEOR OF TECHNOLOGY IN ELECTRONICS &amp; TELECOMMUNICATION ENGINEERING</b>	<b>RELEASE DATE</b>	<b>:</b>	<b>01/06/2020</b>	
	<b>REVISION NO.</b>	<b>:</b>	<b>1.0</b>	

SEMESTER: V													
SUMMER INTERNSHIP													
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS						CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT		TOTAL		
			L	P	T	MSE	ESE	IA	T/P	DM			
DC07	ET341	Control Systems	3	2	-	35	35	30	50	0	150	4	
DC08	ET342	Digital Signal Processing	3	2	-	35	35	30	50	0	150	4	
DC09	ET343	Embedded Systems Design	3	2	-	35	35	30	50	0	150	4	
OE01	ET35# / EX35#	Open Elective	3	2	-	35	35	30	50	0	150	4	
HSS5	CS361	Project Management	2	0	-	0	50	25	0	0	75	2	
SDP6	ET34#	Skill Development - Data Science	0	4	-	0	0	25	50	0	75	2	
SDP7	ET350	Project Design	0	4	-	0	0	25	0	50	75	2	
<b>TOTAL</b>			<b>14</b>	<b>16</b>	<b>0</b>	<b>140</b>	<b>190</b>	<b>195</b>	<b>250</b>	<b>50</b>	<b>825</b>	<b>22</b>	

SEMESTER: VI													
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS						CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT		TOTAL		
			L	P	T	MSE	ESE	IA	T/P	DM			
DC10	ET361	Power Electronics	3	2	-	35	35	30	50	0	150	4	
DC11	ET362	Principles of Communication Systems	3	2	-	35	35	30	50	0	150	4	
DC12	ET363	Soft Computing	3	2	-	35	35	30	50	0	150	4	
OE02	ET37# / EX37#	Open Elective	3	2	-	35	35	30	50	0	150	4	
SDP8	ET36#	Skill Development course	0	4	-	0	0	25	50	0	75	2	
SDP9	ET360	Project Implementation	0	4	-	0	0	25	0	50	75	2	
HSS6	HP305	Employability Skills	0	4	-	0	0	25	0	50	75	2	
<b>TOTAL</b>			<b>12</b>	<b>20</b>	<b>0</b>	<b>140</b>	<b>140</b>	<b>195</b>	<b>250</b>	<b>100</b>	<b>825</b>	<b>22</b>	

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**MIT ACADEMY OF ENGINEERING, ALANDI**

**Curriculum for  
Final Year  
Bachelor of Technology**

**REVISION 2019 (1.0)**

**(Final Year Curriculum W.E.F., AY: 2022-2023)**

 <b>Academy of Engineering</b> Autonomous Institute Affiliated to SPPU	<b>COURSE STRUCTURE (REVISION 2019)</b>		
	<b>SCHOOL OF ELECTRONICS &amp; TELECOMMUNICATION ENGINEERING</b>	<b>W.E.F</b>	<b>: 2022-2023</b>
	<b>FINAL YEAR BACHLEOR OF TECHNOLOGY IN ELECTRONICS &amp; TELECOMMUNICATION ENGINEERING</b>	<b>RELEASE DATE</b>	<b>: 01/06/2020</b>
		<b>REVISION NO.</b>	<b>: 1.0</b>

SEMESTER: VII													
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS						CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT		TOTAL		
			L	P	T	MSE	ESE	IA	T/P	DM			
DC13	ET461	HDL-Digital Circuit Design	3	2	-	35	35	30	50	0	150	4	
DE01	ET48# / EX48#	Discipline Elective	3	-	-	35	35	30	0	0	100	3	
OE03	ET47# / EX47#	Open Elective	3	2	-	35	35	30	50	0	150	4	
SDP10	ET46#	Skill Development Course	0	4	-	0	0	25	50	0	75	2	
SDP11	ET470	Project Evaluation	0	8	-	0	0	50	0	100	150	4	
SDP12	ET400	Summer Internship	-	-	-	-	-	-	-	150	150	4	
<b>TOTAL</b>			<b>9</b>	<b>16</b>	<b>0</b>	<b>105</b>	<b>105</b>	<b>165</b>	<b>150</b>	<b>250</b>	<b>775</b>	<b>21</b>	

SEMESTER: VIII (PART A)													
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS						CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT		TOTAL		
			L	P	T	MSE	ESE	IA	T/P	DM			
DC14	ET462	Process Automation	3	2	-	35	35	30	50	0	150	4	
DE01	ET49# / EX49#	Discipline Elective*	3	-	-	35	35	30	0	0	100	3	
SDP13	ET480	Capstone Work	-	8	-	0	0	75	0	75	150	4	
HSS7	HP405	Engineering Economics	2	-	-	0	50	25	0	0	75	2	
HSS8	HP406	Psychology	2	-	-	0	50	25	0	0	75	2	
<b>TOTAL</b>			<b>10</b>	<b>10</b>	<b>0</b>	<b>70</b>	<b>170</b>	<b>185</b>	<b>50</b>	<b>75</b>	<b>550</b>	<b>15</b>	

\*Swayam Credit Transfer Scheme

SEMESTER: VII												
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS					CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT			TOTAL
			L	P	T	MSE	ESE	IA	T/P	DM		
DC13	ET461	HDL-Digital Circuit Design	3	2	-	35	35	30	50	0	150	4
DE01	ET48# / EX48#	Discipline Elective	3	-	-	35	35	30	0	0	100	3
OE03	ET47# / EX47#	Open Elective	3	2	-	35	35	30	50	0	150	4
SDP10	ET46#	Skill Development Course	0	4	-	0	0	25	50	0	75	2
SDP11	ET470	Project Evaluation	0	8	-	0	0	50	0	100	150	4
SDP12	ET400	Summer Internship	-	-	-	-	-	-	-	150	150	4
<b>TOTAL</b>			<b>9</b>	<b>16</b>	<b>0</b>	<b>105</b>	<b>105</b>	<b>165</b>	<b>150</b>	<b>250</b>	<b>775</b>	<b>21</b>

SEMESTER: VIII (PART B SEMESTER LONG INTERNSHIP)												
COURSE			TEACHING SCHEME			EXAMINATION SCHEME AND MARKS					CREDIT	
TYPE	CODE	NAME	Hour/Week			THEORY			PRACT			TOTAL
			L	P	T	MSE	ESE	IA	T/P	DM		
DE02	ET49# / EX49#	Discipline Elective*	3	-	-	35	35	30	0	0	100	3
SDP13	ET480	Capstone Work	-	8	-	0	0	75	0	75	150	4
SDP14	ET467	Semester Long Internship Design	-	-	-	-	-	-	-	150	150	4
SDP15	ET468	Semester Long Internship Implementation	-	-	-	-	-	-	-	150	150	4
<b>TOTAL</b>			<b>6</b>	<b>2</b>	<b>0</b>	<b>70</b>	<b>70</b>	<b>60</b>	<b>50</b>	<b>300</b>	<b>550</b>	<b>15</b>

\*Swayam Credit Transfer Scheme

<b>Discipline Elective (DE) : 2 Courses and 6 Credits</b>			
<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Credits</b>
1.	ET481	Deep Learning	3
	ET482	Digital Image Processing	
	ET483	Electric Vehicles	
	ET484	RTOS	
2.	ET491	ASIC Design	3
	ET492	Network Security	
	ET493	Signal Detection and Estimation Techniques	
	ET494	Biomedical Engineering	
	ETSWAYAM01	Discipline Elective Swayam MOOC Course	
	ETSWAYAM02	Discipline Elective Swayam MOOC Course	
	ETSWAYAM03	Discipline Elective Swayam MOOC Course	

<b>Natural Science (NSC) : 5 Courses and 20 Credits</b>			
<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Credits</b>
1.	AS105	Calculus and Differential Equations	4
2.	AS106	Engineering Physics	4
3.	CH101	Science of Nature	4
4.	AS107	Statistics and Integral Calculus	4
5.	AS204	Applied Mathematics	4

<b>Engineering Science (ESC) : 8 Courses and 26 Credits</b>			
<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Credits</b>
1.	EX102	Electrical and Electronics Engineering	4
2.	CV102	Applied Mechanics	4
3.	ME104	Engineering Graphics	4
4.	CS101	Logic Development	3
5.	CS102	Application Programming	3
6.	ME221	Material Engineering	4
7.	CV203	Environmental Sciences	Audit
8.	IT221	Engineering Informatics	4

<b>Humanities and Social Science (HSS) : 06 Courses and 12 Credits</b>			
<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Credits</b>
1.	HP103	English for Engineers	2
	HP104	German	
	HP105	Japanese	
Audit	HP106	Indian Constitution	Audit
2.	HP202	Professional Skill	2
Audit	HP203	Liberal Learning	Audit
3.	CS361	Project Management	2
4.	HP305	Professional Skills	2
5.	HP405	Engineering Economics	2
6..	HP406	Psychology	2

<b>Discipline Core (DC) : 14 Courses and 55 Credits</b>			
<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Credits</b>
1.	ET221	Electronic Devices and Circuits	4
2.	ET222	Digital Systems and Applications	4
3.	ET223	Signals & Systems	4
4.	ET231	Electromagnetic Theory	3
5.	ET232	Network Analysis Techniques	4
6.	ET233	Microcontroller & Interfacing	4
7.	ET341	Control Systems	4
8.	ET342	Digital Signal Processing	4
9.	ET343	Embedded Systems Design	4
10.	ET361	Power Electronics	4
11.	ET362	Principles of Communication Systems	4
12.	ET363	Soft Computing	4
13.	ET461	HDL-Digital Circuit Design	4
14.	ET462	Process Automation	4



<b>Skill Development and Project (SDP) : 15 Courses and 30 Credits</b>			
<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Credits</b>
1.	ET224	Digital Prototyping	2
2.	ET230	Minor Project Design	1
3.	ET225	Skill Development Course - Data Structures & Algorithms	2
4.	ET235	Rapid Prototyping	2
5	ET240	Minor Project Implementation	1
6. A	ET344	Skill Development course – Data Science	2
6. B	ET345	Skill Development - Infosys Springboard : Foundation in Data Science	2
7	ET350	Project Design	2
8. A	ET364	Skill Development Course - Networking	2
8. B	ET365	Skill Development Course – MATLAB Based System Modeling	2
8. C	ET366	Skill development Course - Digital Image Processing and Computer vision	2
9	ET360	Project Implementation	2
10. A	ET463	Skill Development Course – Embedded Linux	2
10. B	ET464	Skill Development Course – Cloud Computing	2
10. C	ET465	Skill Development Course – System Verilog	2
11	ET470	Project Evaluation	4
12	ET400	B Tech Summer Internship	4
12	ET480	Capstone Work	4
14	ET467	Semester Long Internship Design (Elective)	4
15	ET468	Semester Long Internship Implementation (Elective)	4
Audit	ET200	SY Summer Internship	Audit
Audit	ET300	TY Summer Internship	Audit

<b>List of Skill Development Courses</b>				
<b>Programme Name</b>	<b>Skill Development Course 1</b>	<b>Skill Development Course 2</b>	<b>Skill Development Course 3</b>	<b>Skill Development Course 4</b>
<b>Electronics Engineering and ENTC</b>	Data Structures and Algorithms	OOP JAVA / C++	Networking / Data Science	EMB Linux / Cloud Computing / System Verilog

**SEMESTER: VIII (PART B SEMESTER LONG INTERNSHIP)****NPTEL / SWAYAM COURSES RECOMMENDED BY SEE**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Duration in Week</b>	<b>Offering Institute</b>
1	ETSW01	Deep Learning for Computer Vision	3	12	IIT Hyderabad
2	ETSW02	Natural Language Processing	3	12	IIT Kharagpur
3	ETSW03	Modern Digital communication Techniques	3	12	IIT Kharagpur
4	ETSW04	Digital Speech Processing	3	12	IIT Kharagpur
5	ETSW05	Introduction To Industry 4.0 And Industrial Internet of Things	3	12	IIT Kharagpur
6	ETSW06	Introduction To Cloud Computing	3	12	IIT KGP
7	ETSW07	Introduction To Biomedical Imaging System	3	12	IIT Madras
8	EXSW01	Introduction to Robotics	3	12	IIT Madras
9	ETSW08	Data Analytics with Python	3	12	IIT Roorkee
10	ETSW09	Artificial Intelligence: Knowledge Representation And Reasoning	3	12	IIT Madras

**SEMESTER: VIII (PART B SEMESTER LONG INTERNSHIP)****NPTEL / SWAYAM COURSES RECOMMENDED BY SEE**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credits</b>	<b>Duration in Week</b>	<b>Offering Institute</b>
11	ETSW10	Computer Networks and Internet Protocol	3	12	IIT Kharagpur
12	ETSW11	Programming in Java	3	12	IIT Kharagpur
13	ETSW12	Introduction To Internet of Things	3	12	IIT Kharagpur
14	ETSW13	Microprocessors and Interfacing	3	12	IIT Guwahati
15	ETSW14	Digital System Design	3	12	IIT Ropar
16	ETSW15	Computer Vision and Image Processing - Fundamentals and Applications	3	12	IIT Guwahati

Open Electives (OE): 03 Courses and 12 Credits							
Programme Name	Minor Track Name	Semester V		Semester VI		Semester VII	
		Course Code	Course Name	Course Code	Course Name	Course Code	Course Name
<b>Chemical Engineering</b>	Process Engineering	CH351	Process Engineering	CH371	Process Modeling and Simulation	CH471	Process Intensification and Integration
	Piping Design and engineering	CH352	Piping Engineering	CH372	Piping Layout	CH472	Piping Design & Engineering
<b>Civil Engineering</b>	Construction Project Management	CV325	Construction Planning and Management	CV332	Operation Research	CV422	Financial Management
	Environmental Engineering	CV326	Solid Waste Management	CV333	Unit Operations for Liquid Waste/Effluent Treatment	CV423	Environmental Impact assessment and Climate Change
	Structural Engineering	CV327	Advanced mechanics of Solids	CV334	Advanced Structural Analysis	CV424	Advanced RC design
<b>Computer Engineering</b>	Data science	CS351	Descriptive Analytics	CS353	Predictive Analysis	CS461	Big Data Analytics
	Machine Learning	CS352	Artificial Intelligence	CS354	Machine Learning	CS462	Deep Learning
<b>Electronics Engineering</b>	Robotics	ME352	Robot fundamentals and Kinematics	EX371	Robot Dynamics and Control	EX471	AI in Robotics

Open Electives (OE): 03 Courses and 12 Credits							
Programme Name	Minor Track Name	Semester V		Semester VI		Semester VII	
		Course Code	Course Name	Course Code	Course Name	Course Code	Course Name
<b>Electronics &amp; Telecommunication Engineering</b>	Internet of Things	ET352	IoT Architecture and Sensors	ET372	IoT Network & Protocols	ET472	Data Management and Analytics
	Healthcare Technology	ET351	Fundamentals of Healthcare Technology	ET371	Healthcare Informatics	E471	AI in Healthcare
<b>Information Technology</b>	Computer Security	ET471	Cryptography and System Security	ET471	Cyber Security and Forensics	IT461	Ethical Hacking & Cyber Laws
<b>Mechanical Engineering</b>	Computer Aided Engineering	ME351	Finite Element Analysis	ME361	Computational Fluid Dynamics	ME491	Advanced Analysis
	Robotics and Automation	ME352	Fundamentals of Robotics	ME362	Kinematics & Dynamics of Robots	ME492	Electrical and Electronics Systems of Robots
	Industrial Engineering & Management	ME353	Industrial Engineering	ME363	Operations Management	ME493	Supply Chain Management
	Automobile Engineering	ME354	Automobile System Design	ME364	Vehicle Dynamics	ME494	Autotronics and e-Vehicles
<b>Entrepreneurship Cell</b>	Innovation, Entrepreneurship & Venture Development	HP311	Foundational Course in Entrepreneurship	HP312	Advanced Course in Entrepreneurship	HP411	Startup and Incubation