

Visvesvaraya Technological University, Belagavi													
Scheme of Teaching and Examinations-2022													
Outcome-Based Education(OBE) and Choice Based Credit System(CBCS)													
(Effective from the academic year 2022-23)													
I Semester (Electrical & Electronics Engineering and allied Stream)								(For Physics Group)					
Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination				Credits
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
					L	T	P	S					
1	*ASC(IC)	22MATE11	Mathematics for Electrical Engg Sciences Streams-I	Maths	2	2	2	0	03	50	50	100	04
2	#ASC(IC)	22PHYE12	Physics for EEE/ECE/ETC/BM/ML	PHY	2	2	2	0	03+02	50	50	100	04
3	ESC	22EEE13	# Element of Electrical Engineering	EEE/ECE/TCE	If offered as a theory Course				03	50	50	100	03
		OR			2	2	0	0					
		22BEE13	## Basic Electronics		If offered as an integrated Course								
					2	0	2	0					
4	ESC-I	22ESC14x	Engineering Science Course-I	Respective Engg Dept	3	0	0	0	03	50	50	100	03
5	ETC-I	22ETC15x	Emerging Technology Course-I	Any Engg Dept	3	0	0	0	03	50	50	100	03
	OR												
	PLC-I	22PLC15x	Programming Language Course-I		2	0	2	0	03+02				
6	AEC	22ENG16	Communicative English	Humanities	0	2	0	0	01	50	50	100	01
7	HSMC	22KSK17/ 22KKBK17	Sanskrutika Kannada/ Balake Kannada	Humanities	0	2	0	0	01	50	50	100	01
		OR											
		22IC017	Indian Constitution		0	2	0	0					
8	AEC/SDC	22IDT18	Innovation and Design Thinking	Any Dept	0	0	2	0	02	50	50	100	01
		OR											
		22SFH18	Scientific Foundations of Health		1	0	0	0	01				
<b>TOTAL</b>										<b>400</b>	<b>400</b>	<b>800</b>	<b>20</b>

# Electrical & Electronics Engineering Students have to study 22EEE13- Element of Electrical Engineering compulsorily ## Where as Electronics and allied stream students have to study 22BEE13 Basic Electronics compulsorily	
<p><b>SDA</b>-Skill Development Activities, <b>TD/PSB</b>- Teaching Department / Paper Setting Board, <b>ASC</b>-Applied Science Course, <b>ESC</b>- Engineering Science Courses, <b>ETC</b>- Emerging Technology Course, <b>AEC</b>- Ability Enhancement Course, <b>HSMS</b>-Humanity and Social Science and Management Course, <b>SDC</b>- Skill Development Course, <b>CIE</b>-Continuous Internal Evaluation, <b>SEE</b>- Semester End Examination, <b>IC</b> – Integrated Course (Theory Course Integrated with Practical Course)</p>	
<p><b>Credit Definition:</b>            1-hour Lecture (<b>L</b>) per week=<b>1Credit</b>            2-hoursTutorial(<b>T</b>) per week=<b>1Credit</b>            2-hours Practical / Drawing (<b>P</b>) per week=<b>1Credit</b>            2-hous Skill Development Actives (<b>SDA</b>) per week = <b>1 Credit</b></p>	<p>04-Credits courses are to be designed for 50 hours of Teaching-Learning Session            04-Credits (IC) are to be designed for 40 hours' theory and 12-14 hours of practical sessions            03-Credits courses are to be designed for 40 hours of Teaching-Learning Session            02- Credits courses are to be designed for 25 hours of Teaching-Learning Session            01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions</p>
<p><b>Student's Induction Program:</b> Motivating (Inspiring) Activities under the Induction program – The main aim of the induction program is to provide newly admitted students a broad understanding of society, relationships, and values. Along with the knowledge and skill of his/her study, students' character needs to be nurtured as an essential quality by which he/she would understand and fulfill the responsibility as an engineer. The following activities are to be covered in 21 days. Physical Activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to Local areas, Familiarization with Department/Branch and Innovation, etc. For details, refer the ANNEXURE-I of Induction Programs notification of the University published at the beginning of the 1<sup>st</sup> semester.</p>	
<p><b>AICTE Activity Points</b> to be earned by students admitted to BE/ B.Tech., / B. Plan day college program (For more details refer to Chapter 6, AICTE Activity Point Program, Model Internship Guidelines): Over and above the academic grades, everyday College regular student admitted to the 4 years Degree program and every student entering 4 years Degree programs through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Program. Students transferred from other Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, any time during the semester weekends, and holidays, as per the liking and convenience of the student from the year of entry to the program. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, an Eighth Semester Grade Card shall be issued only after earning the required activity points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.</p>	
<p>*-<b>22MATE11</b> Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers            #-<b>22PHYE12</b> SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination.  <b>ESC or ETC of 03 credits Courses</b> shall have only a theory component (L:T:P:S=3:0:0:0) or if the nature the of course required experimental learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0 ),. <b>All 01 Credit-</b> courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ</p>	

(ESC-I) Engineering Sciences Courses-I					(ETC-I) Emerging Technology Courses-I				
Code	Title	L	T	P	Code	Title	L	T	P
22ESC141	Introduction to Civil Engineering	3	0	0	22ETC15a	Smart Materials and Systems	3	0	0
22ESC142	Introduction to Electrical Engineering	3	0	0	22ETC15b	Green Buildings	3	0	0
22ESC143	Introduction to Electronics Engineering	3	0	0	22ETC15c	Operation and Maintenance of Solar Electric Systems	3	0	0
22ESC144	Introduction to Mechanical Engineering	3	0	0	22ETC15d	Introduction to Embedded System	3	0	0
22ESC145	Introduction to C Programming	2	0	2	22ETC15e	Introduction to Nano Technology	3	0	0
					22ETC15f	Introduction to Drone Technology	3	0	0
					22ETC15g	Introduction to Sustainable Engineering	3	0	0
					22ETC15h	Renewable Energy Sources	3	0	0
					22ETC15i	Waste Management	3	0	0
					22ETC15j	Emerging Applications of Biotechnology	3	0	0
					22ETC15k	Introduction to Internet of Things (IOT)	3	0	0
					22ETC15l	Introduction to Cyber Security	3	0	0
(PLC-I) Programming Language Courses-I									
Code	Title	L	T	P					
22PLC15a	Introduction to Web Programming	2	0	2					
22PLC15b	Introduction to Python Programming	2	0	2					
22PLC15c	Basics to JAVA programming	2	0	2					
22PLC15d	Introduction to C++ Programming	2	0	2					

- The student has to select one course from the ESC-I group.
- **EEE** Students shall opt for any one of the courses from the ESC-I group **except, 22ESC142-Introduction to Electrical Engineering** and **ECE/ETC/BM/ML** students shall opt any one of the courses from ESC-I **except 22ESC143 Introduction to Electronics Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1<sup>st</sup> or 2<sup>nd</sup> semester
- The students must select one course from either ETC-I or PLC-I group.
- If students study the subject from ETC-I in 1<sup>st</sup> semester he/she has to select the course from PLC-II in the 2<sup>nd</sup> semester and vice-versa

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II Semester (Electrical & Electronics Engineering Stream)							(For the students who attended 1 <sup>st</sup> semester under Physics Group)						
Sl. No	Course and Course Code		Course Title	TD/PSB	Teaching Hours/Week				Examination			Credits	
					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	*ASC(IC)	22MATE21	Mathematics for EES-II	Maths	2	2	2	0	03	50	50	100	04
2	#ASC(IC)	22CHEE22	Chemistry for EES	Chemistry	2	2	2	0	03+02	50	50	100	04
3	ESC	22CED23	Computer Aided Engineering Drawing	Civil/Mech Engg dept	2	0	2	0	03	50	50	100	03
4	ESC-II	22ESC24x	Engineering Science Course-II	Respective Engg Dept	3	0	0	0	03	50	50	100	03
5	PLC-II	22PLC25x	Programming Language Course-II	Any Engg Dept	2	0	2	0	03+02	50	50	100	03
	OR												
	ETC-II	22PLC25x	Emerging Technology Course-II		03	0	0	0	03				
6	AEC	22PWS26	Professional Writing Skills in English	Humanities	0	2	0	0	01	50	50	100	01
7	HSMS	22IC027	Indian Constitution	Humanities	0	2	0	0	01	50	50	100	01
		OR											
		22KSK27/ 22KBK27	Sanskrutika Kannada/ Balake Kannada										
8	HSMS	22SFH28	Scientific Foundations for Health	Any Dept.	1	0	0	0	01	50	50	100	01
		OR											
		22IDT28	Innovation and Design Thinking										
<b>TOTAL</b>										<b>400</b>	<b>400</b>	<b>800</b>	<b>20</b>

**SDA**-Skill Development Activities, **TD/PSB**- Teaching Department / Paper Setting Board, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**- Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSMS**-Humanity and Social Science and Management Course, **SDC**- Skill Development Course, **CIE** -Continuous Internal Evaluation, **SEE**- Semester End Examination, **IC** – Integrated Course (Theory Course Integrated with Practical Course)

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\*-22MATE21 Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers  
 #-22CHEE22- SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination  
**ESC or ETC of 03 credits Courses** shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required experimental learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0 )  
**All 01 Credit-** courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

<b>(ESC-II) Engineering Sciences Courses-II</b>					<b>(ETC-II) Emerging Technology Courses-II</b>				
<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>
22ESC241	Introduction to Civil Engineering	3	0	0	22ETC25a	Smart materials and Systems	3	0	0
22ESC242	Introduction to Electrical Engineering	3	0	0	22ETC25b	Green Buildings	3	0	0
22ESC243	Introduction to Electronics Engineering	3	0	0	22ETC25c	Operation and Maintenance of Solar Electric Systems	3	0	0
22ESC244	Introduction to Mechanical Engineering	3	0	0	22ETC25d	Introduction to Embedded System	3	0	0
22ESC245	Introduction to C Programming	2	0	2	22ETC25e	Introduction to Nano Technology	3	0	0
					22ETC25f	Introduction to Drone Technology	3	0	0
					22ETC25g	Introduction to Sustainable Engineering	3	0	0
					22ETC25h	Renewable Energy Sources	3	0	0
					22ETC25i	Waste Management	3	0	0
					22ETC25j	Emerging Applications of Biotechnology	3	0	0
					22ETC25k	Introduction to Internet of Things(IoT)	3	0	0
					22ETC25l	Introduction to Cyber Security	3	0	0
<b>(PLC-II) Programming Language Courses-II</b>									
<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>					
22PLC25a	Introduction to Web Programming	2	0	2					
22PLC25b	Introduction to Python Programming	2	0	2					
22PLC25c	Basics to JAVA programming	2	0	2					
22PLC25d	Introduction to C++ Programming	2	0	2					

- The student has to select one course from the ESC-II group.
- **EEE** Students shall opt for any one of the courses from the ESC-I group **except, 22ESC142-Introduction to Electrical Engineering and ECE/ETC/BM/ML** students shall opt any one of the courses from ESC-I **except 22ESC143 Introduction to Electronics** Engineering
- The students have to opt for the courses from ESC group without repeating the course in either 1<sup>st</sup> or 2<sup>nd</sup> semester
- The students must select one course from either ETC-II or PLC-II group.
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					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks		Total Marks
					L	T	P	S					
1	*ASC(IC)	22MATE11	Mathematics for EES-I	Maths	2	2	2	0	03	50	50	100	04
2	#ASC(IC)	22CHEE12	Chemistry for EES	Chemistry	2	2	2	0	03+02	50	50	100	04
3	ESC	22CED13	Computer-Aided Engineering Drawing	Mechanical	2	0	2	0	03	50	50	100	03
4	ESC-I	22ESC14x	Engineering Science Course-I	Respective Engg Dept	3	0	0	0	03	50	50	100	03
5	ETC-I	22ETC15x	Emerging Technology Course-I	Any Engg Dept	3	0	0	0	03	50	50	100	03
	OR												
	PLC-I	22PLC15x	Programming Language Course-I		2	0	2	0	03+02				
6	AEC	22PWS16	Professional Writing Skills in English	Humanities	0	2	0	0	01	50	50	100	01
7	HSMS	22IC017	Indian Constitution	Humanities	0	2	0	0	01	50	50	100	01
		OR											
		22KSK17/ 22KBK17	Sanskrutika Kannada/ Balake Kannada										
8	HSMS	22SFH18	Scientific Foundations for Health	Any Dept.	1	0	0	0	01	50	50	100	01
		OR											
		22IDT18	Innovation and Design Thinking										
<b>TOTAL</b>										<b>400</b>	<b>400</b>	<b>800</b>	<b>20</b>

**SDA**-Skill Development Activities, **TD/PSB**- Teaching Department / Paper Setting Board, **ASC**-Applied Science Course, **ESC**- Engineering Science Courses, **ETC**- Emerging Technology Course, **AEC**- Ability Enhancement Course, **HSMS**-Humanity and Social Science and Management Course, **SDC**- Skill Development Course, **CIE** -Continuous Internal

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Evaluation, <b>SEE</b> - Semester End Examination, <b>IC</b> – Integrated Course (Theory Course Integrated with Practical Course)	
<p>*-22<b>MATE11</b> Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers</p> <p>#-22<b>CHEE12</b>- SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination</p> <p><b>ESC or ETC of 03 credits Courses</b> shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required experimental learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0 ) however practical component will not have SEE, Questions from practical component shall be included in SEE</p> <p><b>All 01 Credit-</b> courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ</p>	
<p><b>Credit Definition:</b></p> <p>1-hour Lecture (<b>L</b>) per week=<b>1Credit</b></p> <p>2-hoursTutorial(<b>T</b>) per week=<b>1Credit</b></p> <p>2-hours Practical / Drawing (<b>P</b>) per week=<b>1Credit</b></p> <p>2-hous Skill Development Actives (<b>SDA</b>) per week = <b>1 Credit</b></p>	<p>04-Credits courses are to be designed for 50 hours of Teaching-Learning Session</p> <p>04-Credits (IC) are to be designed for 40 hours’ theory and 12-14 hours of practical sessions</p> <p>03-Credits courses are to be designed for 40 hours of Teaching-Learning Session</p> <p>02- Credits courses are to be designed for 25 hours of Teaching-Learning Session</p> <p>01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions</p>
<p><b>Student’s Induction Program:</b> Motivating (Inspiring) Activities under the Induction program – The main aim of the induction program is to provide newly admitted students a broad understanding of society, relationships, and values. Along with the knowledge and skill of his/her study, students’ character needs to be nurtured as an essential quality by which he/she would understand and fulfill the responsibility as an engineer. The following activities are to be covered in 21 days. Physical Activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to Local areas, Familiarization with Department/Branch and Innovation, etc. For details, refer the ANNEXURE-I of Induction Programs notification of the University published at the beginning of the 1<sup>st</sup> semester.</p>	
<p><b>AICTE Activity Points</b> to be earned by students admitted to BE/ B.Tech., / B. Plan day college program (For more details refer to Chapter 6, AICTE Activity Point Program, Model Internship Guidelines): Over and above the academic grades, everyday College regular student admitted to the 4 years Degree program and every student entering 4 years Degree programs through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Program. Students transferred from other Universities to the fifth semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student’s eighth semester Grade Card. The activities can be spread over the years, any time during the semester weekends, and holidays, as per the liking and convenience of the student from the year of entry to the program. However, the minimum hours’ requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, an Eighth Semester Grade Card shall be issued only after earning the required activity points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.</p>	

<b>(ESC-I) Engineering Sciences Courses-I</b>					<b>(ETC-I) Emerging Technology Courses-I</b>				
<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>
22ESC141	Introduction to Civil Engineering	3	0	0	22ETC15a	Smart Materials and Systems	3	0	0
22ESC142	Introduction to Electrical Engineering	3	0	0	22ETC15b	Green Buildings	3	0	0
22ESC143	Introduction to Electronics Engineering	3	0	0	22ETC15c	Operation and Maintenance of Solar Electric Systems	3	0	0
22ESC144	Introduction to Mechanical Engineering	3	0	0	22ETC15d	Introduction to Embedded System	3	0	0
22ESC145	Introduction to C Programming	2	0	2	22ETC15e	Introduction to Nano Technology	3	0	0
					22ETC15f	Introduction to Drone Technology	3	0	0
					22ETC15g	Introduction to Sustainable Engineering	3	0	0
					22ETC15h	Renewable Energy Sources	3	0	0
					22ETC15i	Waste Management	3	0	0
					22ETC15j	Emerging Applications of Biotechnology	3	0	0
					22ETC15k	Introduction to Internet of Things (IOT)	3	0	0
					22ETC15l	Introduction to Cyber Security	3	0	0
<b>(PLC-I) Programming Language Courses-I</b>									
<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>					
22PLC15a	Introduction to Web Programming	2	0	2					
22PLC15b	Introduction to Python Programming	2	0	2					
22PLC15c	Basics to JAVA programming	2	0	2					
22PLC15d	Introduction to C++ Programming	2	0	2					

- The student has to select one course from the ESC-I group.
- **EEE** Students shall opt for any one of the courses from the ESC-I group **except, 22ESC142-Introduction to Electrical Engineering and ECE/ETC/BM/ML** students shall opt any one of the courses from ESC-I **except 22ESC143 Introduction to Electronics Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1<sup>st</sup> or 2<sup>nd</sup> semester
- The students must select one course from either ETC-I or PLC-I group.
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<b>II Semester (Electrical &amp; Electronics Engineering Stream) (For students who attended 1<sup>st</sup> semester under Chemistry Group)</b>													
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					Theory Lecture	Tutorial	Practical/ Drawing	SDA	Duration in hours	CIE Marks	SEE Marks	Total Marks	
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3	ESC	22EEE13	# Elements of Electrical Engineering	EEE/ECE/TCE	If offered as a theory Course				03	50	50	100	03
		OR			2	2	0	0					
		22BEE13	## Basic Electronics		If offered as an integrated Course								
		2	0	2	0								
4	ESC-II	22ESC24x	Engineering Science Course-II	Respective Engg Dept.	3	0	0	0	03	50	50	100	03
5	PLC-II	22PLC25x	Programming language Course-II	Any Engg Dept	2	0	2	0	03+02	50	50	100	03
	OR												
	ETC-II	22ETC25x	Emerging Technology Course-II		3	0	0	0	03				
6	AEC	22ENG26	Communicative English	Humanities	0	2	0	0	01	50	50	100	01
7	HSMC	22KSK27 22KBK27	Sanskrutika Kannada/ Balake Kannada	Humanities	0	2	0	0	01	50	50	100	01
		OR											
		22ICO27	Indian Constitution		0	2	0	0					
8	AEC/SDC	22IDT18	Innovation and Design Thinking	Any Dept	0	0	2	0	02	50	50	100	01
		OR											
		22SFH28	Scientific Foundations of Health		1	0	0	0	01				

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<b>TOTAL</b>						<b>400</b>	<b>400</b>	<b>800</b>	<b>20</b>
<b># Electrical &amp; Electronics Engineering Students have to study 22EEE13- Elements of Electrical Engineering compulsorily</b> <b>## Whereas Electronics and allied stream students have to study 22BEE13 Basic Electronics compulsorily</b>									
<b>SDA</b> -Skill Development Activities, <b>TD/PSB</b> - Teaching Department / Paper Setting Board, <b>ASC</b> -Applied Science Course, <b>ESC</b> - Engineering Science Courses, <b>ETC</b> - Emerging Technology Course, <b>AEC</b> - Ability Enhancement Course, <b>HSMS</b> -Humanity and Social Science and Management Course, <b>SDC</b> - Skill Development Course, <b>CIE</b> -Continuous Internal Evaluation, <b>SEE</b> - Semester End Examination, <b>IC</b> – Integrated Course (Theory Course Integrated with Practical Course)									
<b>*-22MATE21</b> Shall have the 03 hours of theory examination(SEE), however, practical sessions question shall be included in the theory question papers <b>#-22PHYE22</b> SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination. <b>ESC or ETC of 03 credits Courses</b> shall have only a theory component (L:T :P:S=3:0:0:0) or if the nature the of course required experimental learning syllabus shall be designed as an Integrated course (L:T:P:S= 2:0:2:0 ),. <b>All 01 Credit-</b> courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ									

<b>(ESC-II) Engineering Sciences Courses-II</b>					<b>(ETC-II) Emerging Technology Courses-II</b>				
<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>
22ESC241	Introduction to Civil Engineering	3	0	0	22ETC25a	Smart materials and Systems	3	0	0
22ESC242	Introduction to Electrical Engineering	3	0	0	22ETC25b	Green Buildings	3	0	0
22ESC243	Introduction to Electronics Engineering	3	0	0	22ETC25c	Operation and Maintenance of Solar Electric Systems	3	0	0
22ESC244	Introduction to Mechanical Engineering	3	0	0	22ETC25d	Introduction to Embedded System	3	0	0
22ESC245	Introduction to C Programming	2	0	2	22ETC25e	Introduction to Nano Technology	3	0	0
					22ETC25f	Introduction to Drone Technology	3	0	0
					22ETC25g	Introduction to Sustainable Engineering	3	0	0
					22ETC25h	Renewable Energy Sources	3	0	0
					22ETC25i	Waste Management	3	0	0
					22ETC25j	Emerging Applications of Biotechnology	3	0	0
					22ETC25k	Introduction to Internet of Things(IoT)	3	0	0
					22ETC25l	Introduction to Cyber Security	3	0	0
<b>(PLC-II) Programming Language Courses-II</b>									
<b>Code</b>	<b>Title</b>	<b>L</b>	<b>T</b>	<b>P</b>					
22PLC25a	Introduction to Web Programming	2	0	2					
22PLC25b	Introduction to Python Programming	2	0	2					
22PLC25c	Basics to JAVA programming	2	0	2					
22PLC25d	Introduction to C++ Programming	2	0	2					

- The student has to select one course from the ESC-II group.
- **EEE** Students shall opt for any one of the courses from the ESC-I group **except, 22ESC142-Introduction to Electrical Engineering and ECE/ETC/BM/ML** students shall opt any one of the courses from ESC-I **except 22ESC143 Introduction to Electronics Engineering**
- The students have to opt for the courses from ESC group without repeating the course in either 1<sup>st</sup> or 2<sup>nd</sup> semester
- The students must select one course from either ETC-II or PLC-II group.
- If students study the subject from ETC-I in 1<sup>st</sup> semester he/she has to select the course from PLC-II in the 2<sup>nd</sup> semester and vice-versa