Cambridge Institute of Technology, Bengaluru
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3rd Semester											
Sl.No.	**Course Type**	**Course Title**	**Course Code**	**Teaching Dept.**	**L**	**T**	**P**	**Credits**	**CIE**	**SEE**	**Total**
1	BSC	Applied Mathematics III for Electrical and Electronics Stream (ECE & EEE)	ML201	BS	3	2	0	4	50	50	100
2	PCC	Transformers and DC Machines	EE202	EEE	3	0	0	3	50	50	100
3	PCCL	Transformers and DC Machines Laboratory	EE203	EEE	0	0	2	1	50	50	100
4	PCC	Analog and Digital Electronic Circuits	EE204	EEE	3	2	0	4	50	50	100
5	PCCL	Analog and Digital Electronic Laboratory	EE205	EEE	0	0	2	1	50	50	100
6	IPCC	Electric Circuit Analysis	EE206	EEE	2	0	2	3	50	50	100
7	ESC	Engineering Science Course	EE22X	EEE	3	0	0	3	50	50	100
8	UHV	Universal Human Values	HV207	Any Department	2	0	0	2	50	50	100
9	NCMC	NSS – Phase 1	NS208	NSS	0	2	0	0	50	0	50
		Physical Education (PE) (Sports and Athletics) – Phase 1	PE208	PED							
		Yoga for a Better Life - Phase 1	YG208	Yoga							
10	NCMC	Additional Mathematics	DM209	BS	2	0	0	0	50	50	100
					18	**6**	**6**	**21**	**500**	**450**	**950**

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In **IPCC** courses, practical components shall be included, but not limited to the few experiments. IPCC courses shall have list few practice experiments and open ended

National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE) (Sports and Athletics)**, and Yoga (YG)** with the concerned coordinator of the course during the III semester. Activities shall be carried out between III semesters to the IV semester (for 2 semesters). Successful completion of the registered course and requisite **CIE score is mandatory for the award of the degree**. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.

ESC

Sl.No.	**Course Title**	**Course Code**
1	Physics of Electronic Devices	EE221
2	Electrical and Electronics Measurement and Instrumentation	EE222
3	Basic VLSI Design	EE223
4	PCB Design	EE224

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4th Semester

Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	T	P	Credits	CIE	SEE	Total
1	BSC	Applied Mathematics IV for Electrical and Electronics Stream (ECE & EEE)	ML251	BS	2	2	0	3	50	50	100
2	PCC	Induction Motor and Synchronous Generator	EE252	EEE	3	0	0	3	50	50	100
3	PCCL	Induction Motor and Synchronous Machines Laboratory	EE253	EEE	0	0	2	1	50	50	100
4	PCC	Power Electronics	EE254	EEE	3	0	0	3	50	50	100
5	PCCL	Power Electronics Laboratory	EE255	EEE	0	0	2	1	50	50	100
6	IPCC	Control Systems	EE256	EEE	2	0	2	3	50	50	100
7	ESC	Engineering Science Course	EE26X	EEE	2	0	2	3	50	50	100
8	AEC	Ability Enhancement Course	EE27X	EEE	2	0	0	2	50	50	100
9	BSC	Biology for Engineers	BG257	BS	2	0	0	2	50	50	100
10	NCMC	NSS - Phase 2	NS258	NSS	0	2	0	0	50		50
		Physical Education (PE) (Sports and Athletics) Phase -2	PE258	PED							
		Yoga for a Better Life - Phase 2	YG258	Yoga							
11	NCMC	Social Connect Responsibility	SC259	Any Dept	0	0	2	0	50	0	50
					16	**4**	**10**	**21**	**550**	**450**	**1000**

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ESC

Sl.No.	Course Title	Course Code
1	Electromagnetic theory	EE261
2	Digital Systems Design Using VHDL	EE262
3	Engineering Material	EE263
4	Computer Organization and Architecture	EE264

AEC

Sl.No.	Course Title	Course Code
1	Data Structures using C	EE271
2	Introduction to Python Programming	EE272
3	Operational Amplifiers and Linear ICs	EE273
4	Operating System	EE274

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5th Semester

Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	T	P	Credits	CIE	SEE	Total
1	PCC	Signals and DSP	EE301	EEE	2	2	0	3	50	50	100
2	PCCL	Signals and DSP Laboratory	EE302	EEE	0	0	2	1	50	50	100
3	PCC	Microcontroller	EE303	EEE	2	2	0	3	50	50	100
4	PCCL	Microcontroller Laboratory	EE304	EEE	0	0	2	1	50	50	100
5	IPCC	Power Generation, Transmission and Distribution	EE305	EEE	2	0	2	3	50	50	100
6	HSMC	Research Methodology and IPR/Project Management	EE306	EEE	2	0	0	2	50	50	100
7	HSMC	Environmental studies	CV307	CIVIL	0	2	0	1	50	50	100
8	AEC	BOS recommended ONLINE Course	EE308	EEE				2		100	100
9	PEC-1	Professional Elective Course	EE32X	EEE	3	0	0	3	50	50	100
10	OEC-1	Open Elective Course	EE33X	EEE	3	0	0	3	50	50	100
11	NCMC	NSS – Phase 3	NS308	NSS	0	2	0	0	50		50
		Physical Education (PE) (Sports and Athletics) – Phase 3	PE308	PED							
		Yoga for a Better Life - Phase 3	YG308	Yoga							
					14	**8**	**6**	**22**	**500**	**550**	**1050**

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Professional Elective Courses (PEC): A professional elective (PEC) course is intended to enhance the depth and breadth of educational experience in the Engineering and Technology curriculum. Multidisciplinary courses that are added supplement the latest trend and advanced technology in the selected stream of engineering.

Open Elective Course (OEC): These Courses will be offered by each department on the emerging technologies and Centre of Excellence to students of other branches. These courses may be online courses approved by the respective Board of Studies (BOS). These courses shall not offered to the students of offering department.

Note:

1. In place of Open Elective Course (OEC) students may carry out any industrial internship or societal internship or societal project leading to startups.
2. The eligible students **(having CGPA ≥ 7.5 without any backlogs)** may register for **Research work** leading a publication in reputed journal at the 5th semester in lieu of an Open elective. **The Credit for the same shall be reflected in the 8th Semester grade card.**
3. **Certification course:** The students shall take up the relevant certification courses from NPTEL/Swayam, Coursera, Infosys Springboard, **Courses offered by Premier Institute like IISC, IITs, MIT** etc. having a final score reflecting in the certificate. Students shall take up these courses from 1st semester and submit the certificate prior to last working of the 5th semester. **There will be no SEE**. **The score reflected in certificate shall be directly used for grade processing.**

PEC-1

Sl.No.	Course Title	Course Code
1	Introduction to Electric Vehicle Technologies	EE321
2	Introduction to Renewable Energy Technologies	EE322
3	Digital Sytem Design using Verilog	EE323
4	Advanced Control Systems	EE324

OEC-1

Sl.No.	Course Title	Course Code
1	Matlab for Engineers	EE331
2	Renewable Energy Sources	EE332
3	Energy Auditing and Conservation	EE333
4	Measurements and Instrumentation	EE334

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6th Semester											
Sl.No.	**Course Type**	**Course Title**	**Course Code**	**Teaching Dept.**	**L**	**T**	**P**	**Credits**	**CIE**	**SEE**	**Total**
1	PCC	Power System	EE351	EEE	2	2	0	3	50	50	100
2	PCCL	Power System Laboratory	EE352	EEE	0	0	2	1	50	50	100
3	PCC	Power System Protection and High Voltage Engineering	EE353	EEE	2	2	0	3	50	50	100
4	PCCL	Power System Protection and High Voltage Engineering Laboratory	EE354	EEE	0	0	2	1	50	50	100
5	IPCC	Electrical Machine Design and Computer Aided Engineering Drawing	EE355	EEE	2	0	2	3	50	50	100
6	HSMC	Research Methodology and IPR/Project Management	EE356	EEE	2	0	0	2	50	50	100
7	AEC	Ability Enhancement Course	EE36X	EEE	0	2	2	2	50	50	100
8	PROJ	Mini Project	EE357	EEE	0	0	2	1	50	50	100
9	PEC-2	Professional Elective Course	EE37X	EEE	3	0	0	3	50	50	100
10	OEC-2	Open Elective Course	EE38X	EEE	3	0	0	3	50	50	100
11	NCMC	NSS – Phase 4	NS358	NSS	0	2	0	0	50		50
		Physical Education (PE) (Sports and Athletics) – Phase 4	PE358	PED							
		Yoga for a Better Life - Phase 4	YG358	Yoga							
					14	**8**	**10**	**22**	**550**	**500**	**1050**

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Note:

1 In place of Open Elective Course (OEC) students may carry out any industrial internship or societal internship or societal project leading to startups.

PEC-2		
Sl.No.	**Course Title**	**Course Code**
1	Energy Storage and Battery Management	EE371
2	Solar and Wind Energy Systems	EE372
3	System Verilog	EE373
4	Industrial Drives	EE374

OEC-2		
Sl.No.	**Course Title**	**Course Code**
1	Introduction to Electric Vehicle Technologies	EE381
2	Introduction to PLC	EE382
3	Control Engineering	EE383
4	Sensors and Transducers	EE384

AEC

Sl.No.	**Course Title**	**Course Code**
1	Internet of Things	EE361
2	PCB Design with Proteus	EE362
3	Energy Estimation, Auditing and Demand Side Management	EE363
4	Introduction to PLC and SCADA	EE364

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7th Semester											
Sl.No.	**Course Type**	**Course Title**	**Course Code**	**Teaching Dept.**	**L**	**T**	**P**	**Credits**	**CIE**	**SEE**	**Total**
1	PCC	Industry Automation and Power System Control	EE401	EEE	2	2	0	3	50	50	100
2	PCCL	Industry Automation Laboratory	EE402	EEE	0	0	2	1	50	50	100
3	IPCC	Embedded Systems	EE403	EEE	2	0	2	3	50	50	100
4	PROJ-1	Project Phase-1 with Seminar	EE404	EEE			4	1	50		50
5	PEC-3	Professional Elective Course	EE42X	EEE	3	0	0	3	50	50	100
6	PEC-4	Professional Elective Course	EE43X	EEE	3	0	0	3	50	50	100
7	OEC-3	Open Elective Course	EE44X	EEE	3	0	0	3	50	50	100
					13	**2**	**8**	**17**	**350**	**300**	**650**

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In **IPCC** courses, practical components shall be included, but not limited to the few experiments. IPCC courses shall have list few practice experiments and open ended experiment based on the concepts covered in the course. The expected outcome is students have to do the guided project related to the course.

Note:

1. In place of Open Elective Course (OEC) students may carry out any industrial internship or societal internship or societal project leading to startups.
2. **Project Phase-1:** Includes Problem statement and Literature survey on the project to be submitted in 8th semester.

PEC-3		
Sl.No.	**Course Title**	**Course Code**
1	Soft Computing Techniques for Power Systems	EE421
2	Smart Grid Technology	EE422
3	Power Quality, HVDC & FACTS	EE423
4	Utilization of Electrical Power	EE424

PEC-4		
Sl.No.	**Course Title**	**Course Code**
1	Electric Vehicle Grid Connection and Communication	EE431
2	Hydrogen and Fuel Cell	EE432
3	Universal Verification Methodology	EE433
4	Artificial Intelligence and Machine Learning for Electrical Engineering	EE434

OEC-3		
Sl.No.	**Course Title**	**Course Code**
1	Energy Storage Systems	EE441
2	Special Electrical Machines	EE442
3	Utilization of Electrical Power	EE443
4	IoT and its Applications	EE444

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8th Semester											
Sl.No.	**Course Type**	**Course Title**	**Course Code**	**Teaching Dept.**	**L**	**T**	**P**	**Credits**	**CIE**	**SEE**	**Total**
1	INT	Research Internship	EE451	EEE				5	50	50	100
2	PROJ-2	Project Phase-2	EE452	EEE				10	50	50	100
3	AEC	BOS recommended ONLINE Course	EE453	EEE				2		100	100
								17	**100**	**200**	**300**

NOTE:

1. **INT :** Research Internship shall be carried out in the premier institutes or in the Research Institute for minimum period of 14 to 18 weeks.
2. **Project Phase-2:** Includes demonstration and prersenataion on the project and the final viva. A Technical paper submitted/published is desirable.
3. **Research work:** The credit for Research work opted during 5th semester shall be reflected in the 8th semester grade card upon submission of **proof for publishing in the research paper in reputed journal.**
4. **Certification course:** The students shall take up the relevant certification courses from NPTEL/Swayam, Coursera, Infosys Springboard, **Courses offered by Premier Institute like IISC, IITs, MIT** etc. having a final score reflecting in the certificate. Students shall take up these courses from 1st semester and submit the certificate prior to last working of the 8th semester. **There will no SEE. The score reflected in certificate shall be directly used for grade processing.**