

Cambridge Institute of Technology, Bengaluru An Autonomous Institution





	3rd Semester											
Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	Т	Р	Credits	CIE	SEE	Total	
1	BSC	Applied Mathematics- III	MM201	BS	3	2	0	4	50	50	100	
2	PCC	Computer Aided Machine Drawing	ME202	Mech	2	2	0	3	50	50	100	
3	PCCL	Material Testing Lab	ME203	Mech	0	0	2	1	50	50	100	
4	PCC	Mechanics of Materials	ME204	Mech	3	2	0	4	50	50	100	
5	PCCL	Workshop Practice Lab	ME205	Mech	0	0	2	1	50	50	100	
6	IPCC	Foundry, Forming and Joining Processes	ME206	Mech	2	0	2	3	50	50	100	
7	ESC	Engineering Science Course	ME22X	Mech	3	0	0	3	50	50	100	
8	UHV	Universal Human Values	HV207	Dept	2	0	0	2	50	50	100	
		NSS – Phase 1	NS208	NSS								
9	NCMC	Physical Education (PE) (Sports and Athletics) – Phase 1	PE208	PED	0	2	2 0	0 0	0	50	0	50
		Yoga for a Better Life - Phase 1	YG208	Yoga								
10	NCMC	Additional Mathematics	DM209	BS	2	0	0	0	50	50	100	
							6	21	500	450	950	

IBSC: Integrated Basic Science Course, PCC: Professional Core Course, PCCL: Professional Core Course laboratory, IPCC: Integrated Professional Core Course, ESC: Engineering Science Course, IESC: Integrated Engineering Science Course, IPEC, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, UHV: Universal Human Value Course, IPEC: Integrated Professional Elective Course, **IOEC:** Integrated Open Elective Course, CER : Certification Course, PROJ:Project, INT: Internship, NCMC: Non-Credit Mandatory Course

L: Lecture, T: Tutorial, P: Practical,

CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation,

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

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 Code								
1	Material Science and Metallurgy	ME221							
2	Smart Materials & Systems	ME222							
3	Waste handling and Management	ME223							
4	Internet of Things	ME224							



Cambridge Institute of Technology, Bengaluru An Autonomous Institution Affiliated to VTU



	4th Semester										
Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	Т	Р	Credits	CIE	SEE	Total
1	BSC	Applied Mathematics -IV	MM251	BS	2	2	0	3	50	50	100
2	PCC	Thermal Science Engineering	ME252	Mech	2	2	0	3	50	50	100
3	PCCL	Energy Conversion Lab	ME253	Mech	0	0	2	1	50	50	100
4	PCC	Theory of Machines	ME254	Mech	3	0	0	3	50	50	100
5	PCCL	Machine Shop Lab	ME255	Mech	0	0	2	1	50	50	100
6	IPCC	Mechanical Measurement and Metrology	ME256	Mech	2	0	2	3	50	50	100
7	ESC	Engineering Science Course	ME26X	Mech	3	0	0	3	50	50	100
8	AEC	Abitlty Enhancement Course	ME27X	Mech	2	0	0	2	50	50	100
9	BSC	Biology for Engineers	BG257	BS	2	0	0	2	50	50	100
		NSS – Phase 2	NS258	NSS							
10	NCMC	Physical Education (PE) (Sports and Athletics) – Phase 2	PE258	PED	0	2	0	0	50	0	50
		Yoga for a Better Life - Phase 2	YG258	Yoga							
11	NCMC	Social Connect and Responsibility	SC259	Any Dept.	0	0	2	0	50	0	50
					16	6	8	21	550	450	1000

IBSC: Integrated Basic Science Course, PCC: Professional Core Course, PCCL: Professional Core Course laboratory, IPCC : Integrated Professional Core Course, ESC: Engineering Science Course, IESC: Integrated Engineering Science Course, IPEC, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, UHV: Universal Human Value Course, IPEC: Integrated Professional Elective Course, IOEC: Integrated Open PROJ:Project, INT: Internship, NCMC: Non-Credit Mandatory Course

L: Lecture, T: Tutorial, P: Practical,

CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation,

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 coverd in the course. The expected outcome is students have to do the guided project related to the course.

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 Code								
1	Machining Science and Jigs and Fixtures	ME261							
2	Micro Electro Mechanical Systems	ME262							
3	Solar Energy	ME263							
4	Composite Materials	ME264							

	AEC								
Sl.No.	Course Title	Course Code							
1	Introduction to Artificial Intelligence and Machine Learning	ME271							
2	Digital Marketing	ME272							
3	Probability and Statistics for Engineers	ME273							



Cambridge Institute of Technology, Bengaluru An Autonomous Institution Affiliated to VTU



	5th Semester										
Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	Т	Р	Credits	CIE	SEE	Total
1	PCC	Fluid Mechanics	ME301	Mech	2	2	0	3	50	50	100
2	PCCL	Fluid Mechanics Lab	ME302	Mech	0	0	2	1	50	50	100
3	PCC	Machine Design	ME303	Mech	2	2	0	3	50	50	100
4	PCCL	Design Lab	ME304	Mech	0	0	2	1	50	50	100
5	IPCC	Computer Integrated Manufacturing	ME305	Mech	2	0	2	3	50	50	100
6	HSMC	Research Methodology and IPR/Project Management	ME306	Mech	2	0	0	2	50	50	100
7	HSMC	Environmental studies	CV307	Mech	0	2	0	1	50	50	100
8	AEC	BOS recommended ONLINE Courses	ME308	Mech				2		100	100
9	PEC-1	Professional Elective Course	ME32X	Mech	3	0	0	3	50	50	100
10	OEC-1	Open Elective Course	ME33X	Dept	3	0	0	3	50	50	100
		NSS – Phase 3	NS308	NSS							
11	NCMC	Physical Education (PE) (Sports and Athletics) – Phase 3	PE308	PED	0	2	0	0	50		50
		Yoga for a Better Life - Phase 3	YG308	Yoga							
				14	8	6	22	500	550	1050	

IBSC: Integrated Basic Science Course, PCC: Professional Core Course, PCCL: Professional Core Course laboratory, IPCC : Integrated Professional Core Course, ESC: Engineering Science Course, IESC: Integrated Engineering Science Course, IPEC, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, UHV: Universal Human Value Course, IPEC: Integrated Professional Elective Course, IOEC: Integrated Open PROJ:Project, INT: Internship, NCMC: Non-Credit Mandatory Course

L: Lecture, T: Tutorial, P: Practical,

2

CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation,

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 coverd in the course. The expected outcome is students have to do the guided project related to the course. **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 aproved by the respective Board of Studies (BOS). These courses shall not offered to the students of offering departent.

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

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 Semster grade card. Certification course: The students shall take up the relevant certification courses from NPTEL/Swayam, Coursera, Infosys Springboard, Courses offered by

3 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	Energy Engineering	ME321					
2	Non Traditional Machinig	ME322					
3	Robotics and Automation	ME323					
4	Industrial Engneering and Ergonomics	ME324					

OEC-1							
Sl.No.	Course Title	Course Code					
1	Mechatronics	ME331					
2	Advanced Manufacturing Process	ME332					
3	Non Destructive Testing	ME333					
4	Renewable Energy Sources	ME334					



Cambridge Institute of Technology, Bengaluru An Autonomous Institution



A .CC:	1:	J 4 -	
АП	nate	ατο	

	6th Semester											
Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	Т	Р	Credits	CIE	SEE	Total	
1	PCC	Turbomachines	ME351	Mech	2	2	0	3	50	50	100	
2	PCCL	Rotor Dynamics Lab	ME352	Mech	0	0	2	1	50	50	100	
3	PCC	Operations Research	ME353	Mech	2	2	0	3	50	50	100	
4	PCCL	Engineering Simulation Lab using Ansys Fluent	ME354	Mech	0	0	2	1	50	50	100	
5	IPCC	Heat and Mass Transfer	ME355	Mech	2	0	2	3	50	50	100	
6	HSMC	Research Methodology and IPR/Project Management	ME356	Mech	2	0	0	2	50	50	100	
7	AEC	Abitlty Enhancement Course	ME36X	Mech	0	2	2	2	50	50	100	
8	PROJ	Mini Project	ME357	Mech	0	0	2	1	50	50	100	
9	PEC-2	Professional Elective Course	ME37X	Mech	3	0	0	3	50	50	100	
10	OEC-2	Open Elective Course	ME38X	Dept	3	0	0	3	50	50	100	
		NSS – Phase 4	NS358	NSS								
11	NCMC	Physical Education (PE) (Sports and Athletics) – Phase 4	PE358	PED	0	2	2 0	0	50		50	
		Yoga for a Better Life - Phase 4	YG358	Yoga								
					14	8	10	22	550	500	1050	

IBSC: Integrated Basic Science Course, PCC: Professional Core Course, PCCL: Professional Core Course, IPEC: Integrated Professional Core Course, ESC: Engineering Science Course, IESC: Integrated Engineering Science Course, IPEC, HSMC: Humanity and Social Science & Management Course, AEC: Ability Enhancement Course, UHV: Universal Human Value Course, IPEC: Integrated Professional Elective Course, IOEC: Integrated Open Elective Course, CER : Certification Course, PROJ:Project, INT: Internship, NCMC: Non-Credit Mandatory Course

L: Lecture, T: Tutorial, P: Practical,

CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation,

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 coverd 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.

	PEC-2								
Sl.No.	Course Title	Course Code							
1	Refrigeration and Air Conitioning	ME371							
2	Modern Mobility and Automotive Mechanics	ME372							
3	Computational Fluid Dynamics	ME373							
4	Total Quality Management	ME374							
	AEC								
SI No	Course Title	Course Code							

Sl.No.	Course Title	Course Code
1	Advanced Python Programming	ME361
2	Spreadsheet for Engineers	ME362
3	Fundamentals of Virtual R	ME363
4	Tools in Scientific Computing	ME364

	OEC-2							
Sl.No.	Course Title	Course Code						
1	Additive Manufacturing	ME381						
2	Operation Research	ME382						
3	Fluid Power Engineering	ME383						
4	Power Plant Engineering	ME384						



Cambridge Institute of Technology, Bengaluru

An Autonomous Institution Affiliated to VTU



7th Semester											
Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	Т	Р	Credits	CIE	SEE	Total
1	PCC	Control Engineering	ME401	Mech	2	2	0	3	50	50	100
2	PCCL	Simulink Lab	ME402	Mech	0	0	2	1	50	50	100
3	IPCC	Computation Mechanics	ME403	Mech	2	0	2	3	50	50	100
4	PROJ-1	Project Phase-1 with Seminar	ME404	Mech	0	0	4	1	50		50
5	PEC-3	Professional Elective Course	ME42X	Mech	3	0	0	3	50	50	100
6	PEC-4	Professional Elective Course	ME43X	Mech	3	0	0	3	50	50	100
7	OEC-3	Open Elective Course	ME44X	Mech	3	0	0	3	50	50	100
					13	2	8	17	350	300	650

IBSC: Integrated Basic Science Course, **PCC:** Professional Core Course, **PCCL:** Professional Core Course laboratory, **IPCC :** Integrated Professional Core Course, **ESC:** Engineering Science Course, **IESC:** Integrated Engineering Science Course, **IPEC**, **HSMC:** Humanity and Social Science & Management Course, **AEC:** Ability Enhancement Course, **UHV:** Universal Human Value Course, **IPEC:** Integrated Professional Elective Course, **IOEC:** Integrated Open Elective Course, **CER :** Certification Course, **PROJ:**Project, **INT:** Internship, **NCMC:** Non-Credit Mandatory Course

L: Lecture, T: Tutorial, P: Practical,

CIE: Continuous Internal Evaluation, SEE: Semester End Evaluation,

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 coverd 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	Supply Chain Management and Introduction to SAP	ME421					
2	Tribology	ME422					
3	Hydraulics and Pneumatics	ME423					
4	Mechatronincs	ME424					

PEC-4						
Sl.No.	Course Title	Course Code				
1	Energy and Environment	ME431				
2	Mechanical Vibration	ME432				
3	Additive Manufacturing	ME433				
4	Geometrical Dimensioning and Tolerances	ME434				

OEC-3							
Sl.No.	Course Title	Course Code					
1	Energy and Environment	ME441					
2	Automation in Manufacturing	ME442					
3	Mechanical Vibration	ME443					
4	Total Quality Management	ME444					



Cambridge Institute of Technology, Bengaluru

An Autonomous Institution Affiliated to VTU



8th Semester											
Sl.No.	Course Type	Course Title	Course Code	Teaching Dept.	L	Т	Р	Credits	CIE	SEE	Total
1	INT	Research Internship	ME451	Mech				5	50	50	100
2	PROJ-2	Project Phase-2	ME452	Mech				10	50	50	100
3	AEC	BOS recommended ONLINE Courses	ME453	Mech				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 prersentation 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.

Certification course: The students shall take up the relevant certification courses from NPTEL/Swayam, Coursera, Infosys Springboard, Courses offered by Premier

4 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.