


B.Tech (CSE)										2018-2022 (Scheme of Studies)										SOET			
ODD SEMESTER										EVEN SEMESTER													
Year	SNo	Course Code	Course Title	L	T	P	C			SNo	Course Code	Course Title	L	T	P	C							
	1	SE ETMA 105	Applied Mathematics-I	3	1	-	4			1	SE ETMA 104	Applied Mathematics-II	3	1	-	4							
	2	SE ETPH 109	Applied Physics-I	3	1	-	4			2	SE ETPH 108	Applied Physics-II	3	1	-	4							
	3	SE ETEC 119	Electrical Science	3	1	-	4			3	SE ETCH 119	Engineering Chemistry	3	1	-	4							
	4	SE ETME 106	Engineering Mechanics	3	-	-	3			4	SE ETME 107	Manufacturing Process	3	-	-	3							
	5	SE ETCS103	Introduction to Computer System and Programming	3	1	-	4	Revision		5	CC ETCS 112	Object Oriented Programming	3	1	-	4	Revision						
	6	SE ETEL 101	Communication Skills	4	-	-	4			6	SE ETCH 125	Enviornmental Studies	3	-	-	3							
	7	SE ETPH 151	Applied Physics-I Lab	-	-	2	1			7	SE ETCH 152	Applied Physics-II Lab	-	-	2	1							
	8	SE ETEL171	Communication Skills Lab	-	-	2	1			8	SE ETEC159	Engineering Chemistry Lab	-	-	2	1							
	9	SE ETEC 161	Electrical Science Lab	-	-	2	1			9	CC ETCS 166	Object Oriented Programming Lab	-	-	2	1	Revision						
	10	SE ETCS153	Programming Lab	-	-	2	1	Revision		10	SE ETME 158	Engineering Graphics Lab	-	-	3	1.5							
	11	SE ETME 154	Engineering Mechanics Lab	-	-	2	1			11	SE ETME 157	Workshop Practice	-	-	3	1.5							
<b>TOTAL</b>				<b>19</b>	<b>4</b>	<b>10</b>	<b>28</b>			<b>TOTAL</b>				<b>18</b>	<b>4</b>	<b>12</b>	<b>28</b>						
Second	1	SE ETMA 201	Applied Mathematics-III	3	1	-	4			1	CC ETCS 202	Software Engineering	3	1	-	4							
	2	SE ETEC 233	Analog Electronics	3	1	-	4			2	SE ETMA 208	Numerical Analysis	3	1	-	4							
	3	SE ETEC 210	Digital Electronics	3	1	-	4			3	CC ETCS 307	Database Management Systems	3	1	-	4							
	4	CC ETCS 219	Foundation of Computer Systems	3	1	-	4			4	CC ETCS 220	Analysis and Design of Algorithm	3	1	-	4							
	5	CC ETCS 211	Operating Systems	3	1	-	4			5	SE ETEC 235	Communication Engineering	3	1	-	4							
	6	CC ETCS 217	Data Structures	3	1	-	4			6	CC ETMC 226	Fundamentals of Management	3	-	-	3							
	7	SE ETEC 263	Analog Electronics Lab	-	-	2	1			7	CC ETCS 252	Software Engineering Lab	-	-	2	1							
	8	SE ETEC 256	Digital Electronics Lab	-	-	2	1			8	SE ETEC 276	Communication Engineering Lab	-	-	2	1							
	9	CC ETCS 255	Operating Systems Lab	-	-	2	1			9	CC ETCS 355	Database Management Systems Lab	-	-	2	1							
	10	CC ETCS 257	Data Structures Lab	-	-	2	1			<b>TOTAL</b>				<b>18</b>	<b>5</b>	<b>6</b>	<b>26</b>						
<b>TOTAL</b>				<b>18</b>	<b>6</b>	<b>8</b>	<b>28</b>			<b>TOTAL</b>				<b>18</b>	<b>5</b>	<b>6</b>	<b>26</b>						
<b>Note: Practical training will be of four weeks duration at the end of fourth semester during summer break and the evaluation will be done at the end of fifth semester.</b>																							
Third	1	CC ETCS 323	Java Programming	3	1	-	4			1	CC ETCS412	Compiler Design	3	1	-	4							
	2	CC ETCS 304	Computer Networks	3	1	-	4			2	CC ETCS312	Information and Network Security	3	1	-	4							
	3	CC ETCS 206	Computer Graphics	3	1	-	4			3	CC ETCS314	Mobile Computing	3	1	-	4							
	4	SE ETCS 214	Theory of Computation	3	1	-	4			4	CC ETCS324	Advanced iOS Development	1	-	-	1							
	5	CC ETEC 311	Microprocessor Systems	3	1	-	4			5	CC ETCS222	Computer Systems Organization	3	1	-	4							
	6	CC ETCS315	Fundamentals of iOS Development	1	-	-	1			6	CC ETCS454	Compiler Design Lab	-	-	2	1							
	7	CC ETCS361	Java Programming Lab	-	-	2	1			7	CC ETCS366	Mobile Computing Lab	-	-	2	1							
	8	CC ETCS365	Computer Networks Lab	-	-	2	1			8	CC ETCS374	Advanced iOS Development Lab	-	-	2	1							
	9	CC ETCS363	Fundamentals of iOS development Lab	-	-	2	1			<b>Elective</b>													
	10	CC ETCS258	Computer Graphics Lab	-	-	2	1			(i)	CC ETCS318	Principles of Programming Languages	3	1	-	4							
	11	SE ETEC353	Microprocessor Systems Lab	-	-	2	1			(ii)	SE ETCS320	Distributed Computing Systems	3	1	-	4							
	12	SE ETCS381	Practical Training I	-	-	-	2			(iii)	SE ETCS322	E-Commerce and ERP	3	1	-	4							
<b>TOTAL</b>				<b>16</b>	<b>5</b>	<b>10</b>	<b>28</b>			<b>TOTAL</b>				<b>16</b>	<b>5</b>	<b>6</b>	<b>24</b>						
<b>Note: Practical training will be of six weeks duration at the end of sixth semester during summer break and the evaluation will be done at the end of seventh semester.</b>																							
Fourth	1	CC ETCS401	Artificial Intelligence	3	1	-	4			1	CC ETCS414	Neural Network	3	1	-	4							
	2	CC ETCS316	Web Technologies	3	1	-	4			2	CC ETCS464	Major Project	-	-	-	6							
	3	SE ETMC421	Entrepreneurship Development	3	-	-	3			<b>Open Elective (without Lab)</b>													
	4	CC ETCS368	Web Technologies Lab	-	-	-	3			(As specified by other schools)				4	-	-	4						
	5	CC ETCS451	Artificial Intelligence Lab	-	-	2	1																
	6	SE ETCS462	Minor Project	-	-	-	2																
	7	SE ETCS481	Practical Training II	-	-	-	2																
	8	<b>Elective (without Lab)</b>																					
	(i)	ETCS403	Distributed Algorithms	3	1	-	4																
	(ii)	ETCS421	Storage Systems	3	1	-	4																
	(iii)	ETCS423	Robotics	3	1	-	4																
	(iv)	ETCS415	Advanced Computer Architecture	3	1	-	4																
	(v)	ETCS420	Graph Theory	3	1	-	4																
	(vi)	ETCS422	Cloud Computing	3	1	-	4																
	9	<b>Elective (with Lab)</b>																					
(i)	ETCS425	Machine Learning	3	1	-	4																	
	ETCS471	Machine Learning Lab	-	-	2	1																	
(ii)	ETCS427	Mobile and Wireless Communication	3	1	-	4																	
	ETCS473	Mobile and Wireless Communication Lab	-	-	2	1																	
(iii)	ETCS306	Data Warehousing and Data Mining	3	1	-	4																	
	ETCS362	Data Warehousing and Data Mining Lab	-	-	2	1																	
<b>TOTAL</b>				<b>15</b>	<b>4</b>	<b>6</b>	<b>26</b>			<b>TOTAL</b>				<b>9</b>	<b>3</b>	<b>2</b>	<b>19</b>						
<b>Total Hours: Lect [L]+Prac [P]+Tut [T]</b>												<b>225</b>											
<b>Total Credits [C]</b>												<b>205</b>											

*JmD*

Registrar  
K.R. Mangalam University  
Sohna Road, Gurugram, (Haryana)

B.Tech (CSE) 2019-2023 (Scheme of Studies as per Choice-Based Credit System)										SOET									
ODD SEMESTER										EVEN SEMESTER									
Year	SNo	Course Code	Course Title	L	T	P	C	SNo	Course Code	Course Title	L	T	P	C					
1	SE	ETMA105A	Applied Mathematics-I	3	1	-	4	1	SE	ETMA104A	Applied Mathematics-II	3	1	-	4				
2	SE	ETPH109A	Engineering Physics	3	1	-	4	2	SE	EETEC101A	Basics of Electrical & Electronics Engineering	3	1	-	4				
3	SE	ETCH125A	Environmental Studies	3	-	-	3	3	CC	ETCS112A	Object Oriented Programming	3	1	-	4				
4	CC	ETCS103A	Programming for Problem Solving	3	1	-	4	4	SE	ETEL101A	Communication Skills	4	-	-	4				
5	SE	ETME101A	Basics of Mechanical Engineering	3	-	-	4	5	OE		Open Elective-II	4	-	-	4				
6	OE		Open Elective-I	4	-	-	4	6	SE	ETME155A	Engineering Graphics Lab	-	-	3	1.5				
7	SE	ETPH109A	Engineering Physics Lab	-	-	2	1	7	SE	EETEC151A	Basics of Electrical & Electronics Engineering Lab	-	-	2	1				
8	SE	ETME151A	Basics of Mechanical Engineering Lab	-	-	2	1	8	CC	ETCS166A	Object Oriented Programming Lab	-	-	2	1				
9	CC	ETCS153A	Programming for Problem Solving Lab	-	-	2	1	9	SE	ETEL171A	Communication Skills Lab	-	-	2	1				
<b>TOTAL</b>				<b>19</b>	<b>3</b>	<b>9</b>	<b>26</b>	<b>TOTAL</b>				<b>16</b>	<b>3</b>	<b>12</b>	<b>26</b>				
Second										Second									
1	SE	ETMA201A	Applied Mathematics-III	3	1	-	4	1	CC	ETCS222A	Computer Organization & Architecture	3	1	-	4				
2	SE	EETEC233A	Analog Electronics	3	1	-	4	2	SE	ETMA208A	Numerical Analysis	3	1	-	4				
3	SE	EETEC210A	Digital Electronics	3	1	-	4	3	SE	EETEC202A	Signals and Systems	3	1	-	4				
4	SE	ETCS219A	Foundation of Computer Systems	3	1	-	4	4	CC	ETCS220A	Analysis and Design of Algorithm	3	1	-	4				
5	CC	ETCS217A	Data Structures	3	1	-	4	5	CC	ETCS307A	Database Management Systems	3	1	-	4				
6	CC	ETCS211A	Operating Systems	3	1	-	4	6	SE	ETMC226A	Fundamentals of Management	3	-	-	3				
7	SE	EETEC263A	Analog Electronics Lab	-	-	2	1	7	CC	ETCS260A	Computer Organization & Architecture Lab	-	-	2	1				
8	SE	EETEC256A	Digital Electronics Lab	-	-	2	1	8	CC	ETCS355A	Database Management Systems Lab	-	-	2	1				
9	CC	ETCS257A	Data Structures Lab	-	-	2	1	9	CC	ETCS262A	Analysis and Design of Algorithm Lab	-	-	2	1				
10	OE	ETDM301A	Disaster Management	3	-	-	3	<b>TOTAL</b>				<b>18</b>	<b>5</b>	<b>6</b>	<b>26</b>				
<b>TOTAL</b>				<b>18</b>	<b>6</b>	<b>6</b>	<b>30</b>	<b>TOTAL</b>				<b>18</b>	<b>5</b>	<b>6</b>	<b>26</b>				
Note: Practical training will be of minimum six weeks duration at the end of fourth semester during summer break and the evaluation will be done at the end of fifth semester.																			
Third										Third									
1	CC	ETCS323A	Java Programming	3	1	-	4	1	CC	ETCS412A	Compiler Design	3	1	-	4				
2	CC	ETCS214A	Theory of Computation	3	1	-	4	2	CC	ETCS401A	Artificial Intelligence	3	1	-	4				
3	SE	EETEC311A	Microprocessor Systems	3	1	-	4	3	CC	ETCS202A	Software Engineering	3	1	-	4				
4	CC	ETCS206A	Computer Graphics	3	1	-	4	4	CC	ETCS454A	Compiler Design Lab	-	-	2	1				
5	CC	ETCS304A	Computer Networks	3	1	-	4	5	CC	ETCS451A	Artificial Intelligence Lab	-	-	2	1				
6	CC	ETCS365A	Computer Networks Lab	-	-	2	1	6	CC	ETCS374A	Advanced iOS Development Lab	-	-	3	1.5				
7	CC	ETCS361A	Java Programming Lab	-	-	2	1	7	CC	ETCS555A	Python Programming Lab	-	-	2	1				
8	CC	ETCS363A	Fundamentals of iOS Development Lab	-	-	3	1.5	8	SE	ETCS375A	Mini Project	-	-	8	4				
9	CC	ETCS258A	Computer Graphics Lab	-	-	2	1	9	<b>Elective</b>										
10	SE	ETCS381A	Practical Training I	-	-	-	1	(i)	DE	ETCS316A	Web Technologies	3	1	-	4				
<b>TOTAL</b>				<b>15</b>	<b>4</b>	<b>9</b>	<b>25.5</b>	(ii)	DE	ETCS320A	Distributed Computing Systems	3	1	-	4				
<b>TOTAL</b>				<b>15</b>	<b>4</b>	<b>9</b>	<b>25.5</b>	(iii)	DE	ETCS415A	Advanced Computer Architecture	3	1	-	4				
<b>TOTAL</b>				<b>15</b>	<b>4</b>	<b>9</b>	<b>25.5</b>	<b>TOTAL</b>				<b>12</b>	<b>4</b>	<b>17</b>	<b>24.5</b>				
Note: Practical training will be of eight weeks duration at the end of sixth semester during summer break and the evaluation will be done at the end of seventh semester.																			
Fourth										Fourth									
1	SE	ETMC310A	Chasing The Rainbow: The Entrepreneurial Struck	3	-	-	3	1	SE	ETCS464A	Major Project	-	-	12	6				
2	SE	ETCS462A	Minor Project	-	-	12	6	2	<b>Open Elective (without Lab)</b>										
3	SE	ETCS481A	Practical Training II	-	-	-	2	(As specified by other schools)											
4	<b>Elective (without Lab)</b>							3	-	-	3	3	<b>Elective (without Lab)</b>						
(i)	CC	ETCS312A	Information and Network Security	3	1	-	4	(i)	DE	ETCS428A	Natural Language Processing	3	1	-	4				
(ii)	CC	ETCS420A	Graph Theory	3	1	-	4	(ii)	DE	ETCS405A	Digital Image Processing	3	1	-	4				
(iii)	CC	ETCS430A	Advanced Database Management Sys	3	1	-	4	(iii)	DE	ETCS414A	Neural Network	3	1	-	4				
5	<b>Elective (with Lab)</b>							4	<b>Elective (with Lab)</b>										
(i)	CC	ETCS413A	Advanced Computer Networks	3	1	-	4	(i)	DE	ETCS422A	Cloud Computing	3	1	-	4				
(ii)	CC	ETCS459A	Advanced Computer Networks Lab	-	-	2	1	(ii)	DE	ETCA362A	Cloud Computing Lab	-	-	2	1				
(iii)	CC	ETCS427A	Mobile and Wireless Communication	3	1	-	4	(iii)	DE	ETCS306A	Data Warehousing and Data Mining	3	1	-	4				
(iv)	CC	ETCS473A	Mobile and Wireless Communication Lab	-	-	2	1	(iv)	DE	ETCS362A	Data Warehousing and Data Mining Lab	-	-	2	1				
(v)	CC	ETCS425A	Machine Learning	3	1	-	4	(v)	DE	ETCS480A	Internet of Things	3	1	-	4				
(vi)	CC	ETCS471A	Machine Learning Lab	-	-	2	1	(vi)	DE	ETCS482A	Internet of Things Lab	-	-	2	1				
<b>TOTAL</b>				<b>9</b>	<b>2</b>	<b>14</b>	<b>20</b>	<b>TOTAL</b>				<b>9</b>	<b>2</b>	<b>14</b>	<b>18</b>				
<b>Total Credits (C)</b>														<b>196</b>					

New Subjects introduced  
 Movement from semester to another semester  
 Subjects with revised syllabus and name

  
**Registrar**  
**K.R. Mangalam University**  
**Sohna Road, Gurugram, (Haryana)**

**B.Tech (CSE) Year 2021-2025 (Scheme of Studies as per Choice-Based Credit System (CBCS) and Learning Outcome-Based Curriculum Framework (LOCF) SOET**

ODD SEMESTER										EVEN SEMESTER									
Year	SNo	Category	Course Code	Course Title	L	T	P	C	EMP/ENT/SE/OP	SNo	Category	Course Code	Course Title	L	T	P	C	EMP/ENT/SE/OP	
	1	BS	ETMA105A	Applied Mathematics-I	3	1	-	4	SE	1	BS	ETMA104A	Applied Mathematics-II	3	1	-	4	SE/BS	
	2	BS	ETPH109A	Engineering Physics	3	1	-	4	SE	2	ESC	ETCS104A	Introduction to Computer Science and Programming in Python	3	1	-	4	SE/EMP/OP	
	3	MC	UCES125A	Environmental Studies	3	-	-	3	SE	3	BS	ETCH119A	Engineering Chemistry	3	1	-	4	SE	
	4	ESC	EETEC101A	Basics of Electrical & Electronics Engineering	3	1	-	4	OP	4	HSMC	UCCS 155A	Communication Skills	4	-	-	4	SE	
	5	ESC	ETME101A	Basics of Mechanical Engineering	3	1	-	4	SE	5	ESC	ETME 155A	Engineering Graphics Lab	-	-	3	1.5	SE	
	6	BS	ETPH151A	Engineering Physics Lab	-	-	2	1	SE	6	ESC	ETCS150A	Introduction to Computer Science and Programming in Python Lab	-	-	2	1	SE	
	7	ESC	EETEC151A	Basics of Electrical & Electronics Engineering Lab	-	-	2	1	SE	7	BS	ETCH159A	Engineering Chemistry Lab	-	-	2	1	SE	
	8	ESC	ETME151A	Basics of Mechanical Engineering Lab	-	-	2	1	SE	8	ESC	ETME 157A	Workshop Practices	-	-	3	1.5	SE / OP	
<b>TOTAL</b>					<b>15</b>	<b>4</b>	<b>6</b>	<b>22</b>		<b>TOTAL</b>					<b>13</b>	<b>3</b>	<b>10</b>	<b>21</b>	

1	GE	ETMA215A	PROBABILITY AND STATISTICS	4	-	-	4	SE	1	PCC	ETCS222A	Computer Organization & Architecture	3	1	-	4	SE		
2	PCC		Java Programming	3	1	-	4	SE/EMP/OP	2	PCC	ETCS210A	Web Programming with Python and JavaScript	3	-	-	3	EMP/ENT/OP		
3	PCC	ETCS231A	Discrete Mathematics	3	1	-	4	SE/OP	3	PCC	ETCS220A	Analysis and Design of Algorithms	3	1	-	4	SE/EMP		
4	PCC	ETCS217A	Data Structures	3	1	-	4	SE/EMP	4	PCC	ETCS307A	Database Management Systems	3	1	-	4	EMP/ENT/OP		
5	PCC	ETCS367A	Java Programming Lab	-	-	2	1	SE/EMP/OP	5	HSMC	ETMC 226A	Fundamentals of Management	3	-	-	3	ENT		
6	PCC	ETCS257A	Data Structures Lab	-	-	2	1	SE/EMP	6			Value Added Course	3	-	-	0	SE		
7	PCC	EETEC 210A	Digital Electronics	4	-	-	4	SE	7	PCC	ETCS 355A	Database Management Systems Lab	-	-	2	1	EMP/ENT/OP		
8	PCC	EETEC 256A	Digital Electronics Lab	-	-	2	1	SE	8	PCC	ETCS262A	Analysis and Design of Algorithms Lab	-	-	2	1	SE/EMP		
9	MC	UCDM301A	Disaster Management	3	-	-	3	SE	9	PCC	ETCS264A	Web Programming with Python and JavaScript Lab	-	-	2	1	EMP/ENT/OP		
<b>TOTAL</b>					<b>20</b>	<b>3</b>	<b>6</b>	<b>26</b>		<b>TOTAL</b>					<b>19</b>	<b>3</b>	<b>6</b>	<b>21</b>	

Note: Practical training will be of minimum six weeks duration at the end of fourth semester during summer break and the evaluation will be done at the end of fifth semester.


1	PCC	ETCS 214A	Theory of Computation	3	1	-	4	SE	1	PCC	ETCS412A	Compiler Design	3	1	-	4	SE/PCC		
2	PCC	ETCS211A	Operating Systems	3	1	-	4	SE	2	PCC	ETCS401A	Artificial Intelligence	3	1	-	4	EMP/ENT/PCC		
3	PCC	ETCS304A	Computer Networks	3	1	-	4	EMP/OP	3	PCC	ETCS 202A	Software Engineering	3	1	-	4	EMP/ENT/OP/PCC		
4	PCC	ETCS367A	iOS Development Lab	-	-	2	1	EMP/ENT	4	PCC	ETCS451A	Artificial Intelligence Lab	-	-	2	1	EMP/ENT/PCC		
5	PCC	ETCS365A	Computer Networks Lab	-	-	2	1	EMP/OP	5			Value Added Course	3	-	-	0	SE		
6	PCC	ETCS255A	Operating System Lab	-	-	2	1	SE	6	PCC	ETCA264A	Mobile Application Development Lab	-	-	2	1	EMP/ENT/PCC		
7	PROJ	ETCS381A	Practical Training I	-	-	-	1	EMP	7			Elective I	-	-	-	-			
8			Value Added Course	3	-	-	0	SE	(i)	PEC	ETCS420A	Graph Theory	3	-	-	3	SE/PEC		
9	PROJ	ETCS375A	Mini Project	-	-	-	3	EMP	(ii)	PEC	ETCS309A	Distributed Computing Systems	3	-	-	3	EMP/PEC		
10				-	-	-	3	EMP	(iii)	PEC	ETCS310A	Advanced Computer Architecture	3	-	-	3	EMP/PEC		
<b>TOTAL</b>					<b>12</b>	<b>3</b>	<b>6</b>	<b>19</b>		<b>TOTAL</b>					<b>15</b>	<b>3</b>	<b>4</b>	<b>22</b>	

Note: Practical training will be of eight weeks duration at the end of sixth semester during summer break and the evaluation will be done at the end of seventh semester.

1	PROJ	ETCS464A	Major Project	-	-	-	6	EMP/ENT	1	PROJ	ETCS490A	Industrial Internship	-	-	-	12	EMP/ENT			
2	POJ	ETCS481A	Practical Training II	-	-	-	2	EMP/ENT												
3			Elective - II																	
(i)	PEC	ETCS426A	Natural Language Processing	4	-	-	4	EMP/ENT												
	PEC	ETCS465A	Natural Language Processing Lab	-	-	2	1	EMP/ENT												
(ii)	PEC	ETCS424A	Data Warehousing and Data Mining	4	-	-	4	EMP/ENT												
	PEC	ETCS463A	Data Warehousing and Data Mining Lab	-	-	2	1	EMP/ENT												
(iii)	PEC	ETCS423A	Neural Network	4	-	-	4	EMP/ENT												
	PEC	ETCS460A	Neural Network Lab	-	-	2	1	EMP/ENT												
4			Elective - III																	
(i)	PEC	ETCS422A	Cloud Computing	4	-	-	4	EMP/ENT												
	PEC	ETCS362A	Cloud Computing Lab	-	-	2	1	EMP/ENT												
(ii)	PEC	ETCS421A	Internet of Things	4	-	-	4	EMP/ENT												
	PEC	ETCS457A	Internet of Things Lab	-	-	2	1	EMP/ENT												
(iii)	PEC	ETCS425A	Machine Learning	4	-	-	4	EMP/ENT												
	PEC	ETCS455A	Machine Learning Lab	-	-	2	1	EMP/ENT												
<b>TOTAL</b>					<b>8</b>	<b>-</b>	<b>4</b>	<b>18</b>		<b>TOTAL</b>					<b>-</b>	<b>-</b>	<b>-</b>	<b>12</b>		
										<b>Total Credits [C]</b>					<b>161</b>					

Electives can be offered as MOOC courses. The students has to appear in Swayam courses and appear for examinations to earn credits.

EMP	Employability
SE	Skill Enhancement
ENT	Entrepreneurship
OP	Open Elective
HSMC	Humanities, Social Science and Management Courses
BS	Basic Science
ESC	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer
MC	Mandatory Courses
OEC	Open Elective
PROJ	Projects / Industrial Training/ Seminar
PEC	Professional Elective Courses
PCC	Professional Core Courses

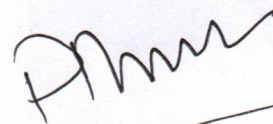
  
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ETCS464	MAJOR PROJECT	L	T	P	C
		-	-	-	6

Students are expected to prepare Major projects on topics of general importance using new software and presentation tools. Students will also prepare a project report along with implementation and present it for the final evaluation.



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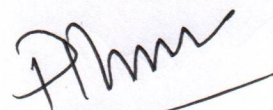
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		-	-	-	6

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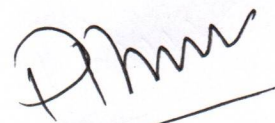
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ETCS464	MAJOR PROJECT	L	T	P	C
		-	-	-	6

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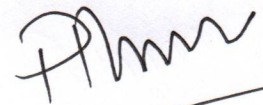
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ETCS464	MAJOR PROJECT	L	T	P	C
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ETCS464A	MAJOR PROJECT	L	T	P	C
		-	-	12	6

Students are expected to prepare Major projects on topics of general importance using new software and presentation tools. Students will also prepare a project report along with implementation and present it for the final evaluation.



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<b>ETCS490A</b>	<b>Industrial Internship</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>Version 1.0</b>		-	-	-	12
<b>Pre-requisites/Exposure</b>	--				
<b>Co-requisites</b>	--				

### Course Objectives

1. To learn how to carry out extensive research/study in the area of project implementation.
2. To be associated with an area of research/research project and contribute towards domain knowledge.
3. To learn technical report/project documentation writing.
4. To learn and implement the technology that in being used is the specific industry where the training is carried out.

### Course Outcomes

On completion of this course, the students will be able to

- CO1. Carry out the extensive literature survey/study in the area on internship provided.
- CO2. Write technical documentation for the project implement.
- CO3. Analyze and develop various methods and techniques applicable to the topic to study/area of implementation.
- CO4. Have practical knowledge on the applications of project of implementation on society.

### Catalog Description

The student will carry out a minimum of six months in industry or appropriate workplace/academic and research institutions in India/abroad. The internship should give exposure to the practical aspects of the discipline. In addition, the student may also work on a specified task or project which may be assigned to him/her. The outcome of the internship/industrial training should be presented in the form of a report.

### Course Content

The assignment will be defined by the organization where the student will carry of his industrial training.

  
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**Modes of Evaluation: Quiz/Assignment/ presentation/ extempore/ Written Examination Examination Scheme:**

Components	Quiz	Attendance	Mid Term Exam	Presentation/ Assignment/ etc.	End Term Exam
Weightage (%)	10	10	20	10	50

**Relationship between the Course Outcomes (COs) and Program Outcomes (POs)**

Mapping between COs and POs		
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Carry out the extensive literature survey/study in the area on internship provided.	PO2
CO2	Write technical documentation for the project implement.	PO5
CO3	Analyze and develop various methods and techniques applicable to the topic to study/area of implementation.	PO3
CO4	Have practical knowledge on the applications of project	PO6

ETCS 490A	Course Code	
Industrial Internship	Course Title	
	PO1	Engineering Knowledge
3	PO2	Problem analysis
3	PO3	Design/development of solutions

  
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	PO4	Conduct investigations of complex problems
3	P O 5	Modern tool usage
2	PO 6	The engineer and society
	PO7	Environment and sustainability
	P O 8	Ethics
	PO9	Individual or team work
	PO10	Communication
	PO11	Project management and finance
	PO12	Life-long Learning
3	PSO1	Application of Concepts
	PSO2	Innovation and Industry Friendly
2	PSO3	Ethics and Communication Skills

1=weakly mapped  
2= moderately mapped  
3=strongly mapped



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	PSO3	Ethics and Communication Skills
--	------	---------------------------------

1=weakly mapped  
2= moderately mapped  
3=strongly mapped



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