ech (C		STER		Teal 2022-2020. Scheme of Studies	as per C	noice	-Bas	ed Cre	edit System (CBC		Learning EN SEMES		Curriculum Framework (LOCF)	102322	-Var	so	ET	
r SN	No	Category	Course Code	Course Title	L	Т	P	С	EMP/ENT/SE/	_		Course Code	Course Title	II.	Т	P	С	EMP/ENT/SE/O
1	1	BS	ETMA105A	Applied Mathematics-I	3	1	0	4	SE	1	BS	ETMA104A	Applied Mathematics-II	3	-	-	4	SE
2	2	BS	ETPH109A	Engineering Physics	3	1	0	4	SE	2	ABCC	ETEC 215A	Embedded Robotics and IOT	4	1		4	SE
3	3	MC	UCES125A	Environmental Studies	3		0	3	SE	-	BS	ETCH119A						
4	-	ESC	ETME101A	Basics of Mechanical Engineering	3	1	-	4	EMP	4	ESC	ETME 155A	Engineering Chemistry Engineering Graphics Lab	0	-	-	1.5	SE
5		Carried Same									E-Ved Sis	LIME 133A						SE
Γ.	3	ESC	ETMEI51A	Basics of Mechanical Engineering Lab	0	0	2	1	EMP	5	BS	ETCH159A	Engineering Chemistry Lab	0	0	2	1	SE
6	6	ESC	ETEC101A	Basics of Electrical & Electronics Engineering	3	1	0	4	OP	6	PCC	ETCS120A	Software Craftsmanship	3	0	0	3	EMP
7	7	ESC	ETEC151A	Basics of Electrical & Electronics Engineering Lab	0	0	2	1	OP	7	ESC	ETME 157A	Workshop Practices		-	3	1.5	ESC
8	8	BS	ETPH151A	Engineering Physics Lab	0	0	2	1	SE	8	PCC	ETCS162A	Software Craftsmanship Using Python	0	0	2	1	EMP
9	9		2.774	Open Elective	4			4	EMP	9			Open Elective	4			4	OP
ТО	OTA	L			19	4	6	26		TOT	AL			17	2	10	24	
Ti	1	GE	ETMA215A	PROBABILITY AND STATISTICS	4		. 1	4	SE	Tı I	PCC	ETCS222A	Computer Organization & Architecture	12	1		4	CF.
2	2	PCC	ETCS225A	Front End Development with ReactJS	3		-	3	SE	2	PCC	ETCS222A ETCS220A	Computer Organization & Architecture Analysis and Design of Algorithms		1	-	4	SE/EMP
3	3	PCC	ETCS231A	Discrete Mathematics	3	1	-	4	SE/OP	3	PCC	ETCS307A	Database Management Systems		1	-	4	EMP/ENT/C
4	4	PCC	ETCS217A	Data Structures	3	1	-	4	SE/EMP	4	PCC	ETCS224A	Database Engineering with MongoDB	3		-	3	EMP/ENT
5	5	MC	UCDM301A	Disaster Management	3	-	-	3	MC	5	HSMC	ETMC602A	Essentials of Organizational Behaviour	3			3	ENT
6	6	PCC	ETCS227A	Backend Development using NodeJS	3		1	3	EMP	6	PCC	ETCS270A		-		-		
7	7	PCC	ETCS257A	Data Structures Lab	3	-	1			7			Database Engineering with MongoDB Lab	+	-	2	1	EMP/ENT
8	0	PCC	ETCS257A ETCS267A		-		2	1	SE/EMP	/	PCC	ETCS 355A	Database Management Systems Lab	-	-	2	1	EMP/ENT/C
9	-			Front End Development with ReactJS Lab Lab	-		2	1	SE	8	PCC	ETCS262A	Analysis and Design of Algorithms Lab	-	-	2	1	SE/EMP
1	9	PCC	ETCS269A	Backend Development using NodeJS Lab	-	-	2	1	EMP	9		ETCS228A	Communication and Analytical Skills-I	2		-	2	SE
\vdash	+				_					10		ETCS226A	Test Automation	3	-	-	3	
		1.45								11		ETCS272A	Test Automation Lab	-	-	2	1	2 / 3 / 3
TO	DTA	L			20	2	6	24		TOT	AL			20	3	8	27	
Pra	actic			imum six weeks duration at the end of fourth semester			ner b			n will b				_				
1	1	PCC	ETCS328A	Mobile Application Development	3	-	ner b	3	EMP/ENT	1	PCC	ETCS412A	Compiler Design	3	1	-	4	SE/PCC
1 2	1 2	PCC PCC	ETCS328A ETCS 214A	Mobile Application Development Theory of Computation	3	- 1	er b	3 4	EMP/ENT SE	1 2	PCC PCC	ETCS412A ETCS332A	Compiler Design CI/CD & Microservice	3	1 -		3	EMP/ENT/P
3	1 2 3	PCC PCC	ETCS328A ETCS 214A ETCS211A	Mobile Application Development Theory of Computation Operating Systems	3 3 3	1	er b	3 4 4	EMP/ENT SE SE	1 2 3	PCC PCC	ETCS412A ETCS332A ETCS340A	Compiler Design CU/CD & Microservice DevOps & Automation	3			3	EMP/ENT/P
3	1 2 3 4	PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A	Mobile Application Development Theory of Computation Operating Systems Computer Networks	3	- 1 1	-	3 4 4	EMP/ENT SE SE EMP/OP	1 2	PCC PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A	Compiler Design CU/CD & Microservice DevOps & Automation Artificial Intelligence	3	1 - 1	-	3 4	EMP/ENT/P EMP/ENT/P
3 4 5	1 2 3 4 5	PCC PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab	3 3 3	- 1 1	2	3 4 4 4	EMP/ENT SE SE EMP/OP	1 2 3 4 5	PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A	Compiler Design CU/CD & Microservice DevOps & Automation	3 3 -		2	3 3 4 1	EMP/ENT/P EMP/ENT/P
1 2 3 4 5	1 2 3 4 5 6	PCC PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS364A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab	3 3 3	- 1 1	2 2 2	3 4 4 4 1 1	EMP/ENT SE SE EMP/OP EMP/OP	1 2 3	PCC PCC PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III	3 3 3 - 2		-	3 3 4 1 2	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 7	1 2 3 4 5 6 7 7	PCC PCC PCC PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS364A ETCS367A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab	3 3 3	- 1 1 - -	- - 2 2 2	3 4 4 4 1 1	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT	1 2 3 4 5	PCC PCC PCC PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab	3 3 -		2	3 3 4 1 2	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ESC EMP/ENT/P
1 2 3 4 5 6 7 8	1 2 3 4 5 6 7 8 8	PCC PCC PCC PCC PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS364A ETCS367A ETCS255A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab	3 3 3	- 1 1 - -	2 2 2 2 2	3 4 4 4 1 1 1	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE	1 2 3 4 5 6 7 8	PCC PCC PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III	3 3 3 - 2		-	3 3 4 1 2	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ESC EMP/ENT/P
1 2 3 4 5 6 7 8	1 2 3 3 4 5 6 6 7 8 8 9	PCC PCC PCC PCC PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS365A ETCS367A ETCS255A ETCS381A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I	3 3 3	- 1 1 - -	- - 2 2 2	3 4 4 1 1 1 1	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE EMP	1 2 3 4 5 6 7 8	PCC PCC PCC PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective	Compiler Design CVCD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CVCD & Microservice Lab DevOps & Automation Lab	3 3 - 2		2	3 4 1 2 1	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 7 8	1 2 3 3 4 5 6 6 7 8 8 9	PCC PCC PCC PCC PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS364A ETCS367A ETCS255A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab	3 3 3	- 1 1 - -	2 2 2 2 2	3 4 4 4 1 1 1	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE	1 2 3 4 5 6 7 8 9 (i)	PCC PCC PCC PCC PCC PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A	Compiler Design Cl/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III Cl/CD & Microservice Lab DevOps & Automation Lab Graph Theory	3 3 - 2 3		2	3 4 1 2 1 1	EMP/ENT/PI EMP/ENT/PI EMP/ENT/PI EMP/ENT/PI EMP/ENT/PI EMP/ENT/PI EMP/ENT/PI EMP/ENT/PI
1 2 3 4 5 6 7 8	1 2 3 3 4 5 6 6 7 8 8 9	PCC PCC PCC PCC PCC PCC PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS365A ETCS367A ETCS255A ETCS381A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I	3 3 3	- 1 1 - -	2 2 2 2 2	3 4 4 1 1 1 1	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE EMP	1 2 3 4 5 6 7 8 9 (i) (ii)	PCC PCC PCC PCC PCC PCC PCC PCC PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS356A ETCS352A ETCS352A ETCS352A ETCS352A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems	3 3 - 2 3 3 3		2	3 4 1 2 1 1	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 7 8 9	1 2 3 3 4 5 6 6 7 8 8 9	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS365A ETCS367A ETCS255A ETCS381A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I	3 3 3	- 1 1 1 - -	2 2 2 2 2	3 4 4 1 1 1 1	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE EMP	1 2 3 4 5 6 7 8 9 (i)	PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A	Compiler Design Cl/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III Cl/CD & Microservice Lab DevOps & Automation Lab Graph Theory	3 3 - 2 3		- 2 2	3 4 1 2 1 1	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 7 8 8 9	1 2 3 3 4 4 5 6 6 7 7 8 8 9 0	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS367A ETCS367A ETCS255A ETCS381A ETCS325A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I Communication and Analytical Skills-II	3 3 3 3 2	1 1 1 3 3	2 2 2	3 4 4 4 1 1 1 1 1 2	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE EMP EMP	1 2 3 4 5 6 7 8 9 (i) (ii) (iii)	PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A ETCS310A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture	3 3 - 2 3 3 3 3 3		- 2 2	3 4 1 2 1 1 3 3 3	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 7 8 8 9	1 2 3 3 4 4 5 6 6 7 7 8 8 9 0	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS367A ETCS367A ETCS255A ETCS381A ETCS325A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I	3 3 3 3 2	1 1 1 3 3	2 2 2	3 4 4 4 1 1 1 1 1 2	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE EMP EMP	1 2 3 4 5 6 7 8 9 (i) (ii) (iii)	PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A ETCS310A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture	3 3 - 2 3 3 3 3 3		- 2 2	3 4 1 2 1 1 3 3 3	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 7 7 8 9 10 TO	1 2 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 0 0 DTA)	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS364A ETCS367A ETCS3581A ETCS325A ettcS325A ettcS325A ettcS325A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I Communication and Analytical Skills-II t weeks duration at the end of sixth semester during so	3 3 3 3 2	1 1 1 3 3	2 2 2	3 4 4 1 1 1 1 1 2 22	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT EMP/ENT SE EMP EMP	1 2 3 4 5 6 7 8 9 (i) (ii) (iii)	PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A ETCS310A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture	3 3 - 2 3 3 3 3 3		- 2 2	3 4 1 2 1 1 3 3 3	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 6 7 8 9 10 TO	1 2 2 3 3 4 4 5 5 5 6 6 7 7 7 8 8 9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS367A ETCS255A ETCS325A eTCS325A will be of eigh	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Operating System Lab Practical Training I Communication and Analytical Skills-II t weeks duration at the end of sixth semester during seminated to the computer Vision Major Project	3 3 3 3 2 14 ummer b	1 1 1 3 3	2 2 2 2 2 2 	3 4 4 1 1 1 1 2 22 the ev	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT SE EMP EMP EMP	1 2 3 4 5 6 7 8 9 (i) (ii) (iii)	PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A ETCS310A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture	3 3 - 2 3 3 3 3 3		- 2 2	3 4 1 2 1 1 3 3 3	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 6 7 7 8 8 9 10 TO	1 2 2 3 3 4 4 4 5 5 6 6 6 7 7 7 8 8 9 9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS367A ETCS325A ETCS325A ETCS325A ETCS325A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I Communication and Analytical Skills-II t weeks duration at the end of sixth semester during system Computer Vision Major Project Boot Camp (Training and Placement)	3 3 3 3 3 2 2 14 4 2 2 - 2 2	- 1 1 1	- 2 2 2 2 2 2 	3 4 4 1 1 1 1 2 22 the ev	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT SE EMP EMP EMP	1 2 3 4 5 6 7 8 9 (i) (ii) (iii)	PCC	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A ETCS310A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture	3 3 - 2 3 3 3 3 3		- 2 2	3 4 1 2 1 1 3 3 3	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P
1 2 3 4 5 6 6 7 7 8 8 9 10 TO	1 2 3 3 4 4 5 5 6 6 7 7 8 8 9 9 0 0	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS367A ETCS255A ETCS381A ETCS325A will be of eigh ETCS428A ETCS464A ETCS464A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I Communication and Analytical Skills-II t weeks duration at the end of sixth semester during system Lab Computer Vision Major Project Boot Camp (Training and Placement) Computer Vision Lab	3 3 3 3 2 14 ummer b	- 1 1 1	2 2 2 2 2 2 	3 4 4 1 1 1 1 2 22 22	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT SE EMP EMP EMP EMP EMP EMP	1 2 3 4 5 6 7 8 9 (i) (ii) (iii)	PCC PCC PCC PCC PCC PCC PCC PCC ACC PCC P	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A Elective ETCS420A ETCS310A	Compiler Design CI/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III CI/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture	3 3 - 2 3 3 3 3 3		- 2 2	3 3 4 1 2 1 1 1 3 3 3 2 2 2 2 2	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P SE/PEC EMP/PEC
1 2 3 4 5 6 6 7 7 8 8 9 10 TO	1 2 2 3 3 4 4 5 5 5 6 6 7 7 8 8 9 9 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS365A ETCS367A ETCS357A ETCS357A ETCS325A ewill be of eigh ETCS428A ETCS464A ETCS464A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I Communication and Analytical Skills-II t weeks duration at the end of sixth semester during system Computer Vision Major Project Boot Camp (Training and Placement) Computer Vision Lab Practical Training II	3 3 3 3 3 3 3 2 2 14 14 2 2 2 2	- 1 1 1	- 2 2 2 2 2 2 	3 4 4 1 1 1 1 2 22 22 21 22 22 20 20 20 20 20 20 20 20 20 20 20	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT SE EMP EMP EMP EMP EMP EMP EMP EMP EMP EM	1 2 3 4 5 6 6 7 8 9 (i) (iii) TOT	PCC PCC PCC PCC PCC PCC PCC PCC ACC PCC P	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A ETCS352A ETCS352A ETCS352A ETCS310A	Compiler Design Cl/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III Cl/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture r.	3 3 - 2 3 3 3 3 3		- 2 2	3 4 1 2 1 1 3 3 3	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P SE/PEC EMP/PEC
1 2 3 4 4 5 6 6 7 7 8 8 9 9 10 1 2 2 3 3 4 4 5 5 6 6	1 2 2 3 3 4 4 5 5 6 6 7 7 7 7 8 8 8 9 9 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	PCC PCC PCC PCC PCC PCC PCC PCC PCC PROJ PCC PROJ PCC PROJ PCC PROJ PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS367A ETCS357A ETCS358A ETCS358A ETCS325A will be of eigh ETCS464A ETCS464A ETCS464A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I Communication and Analytical Skills-II t weeks duration at the end of sixth semester during so Computer Vision Major Project Boot Camp (Training and Placement) Computer Vision Lab Practical Training II Data Visualization and Story Telling	3 3 3 3 3 2 2 14 4 2 2 - 2 2	1 1 1	2 2 2 2 2 2 	3 4 4 4 1 1 1 1 1 2 22 1 22 2	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT SE EMP EMP EMP EMP EMP EMP EMP EMP EMP EM	1 2 3 4 5 6 6 7 8 9 (i) (iii) TOT	PCC PCC PCC PCC PCC PCC PCC PCC ACC PCC P	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A ETCS352A ETCS352A ETCS352A ETCS310A	Compiler Design Cl/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III Cl/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture r.	3 3 - 2 3 3 3 3 3		- 2 2	3 3 4 1 2 1 1 1 3 3 3 2 2 2 2 2	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P SE/PEC EMP/PEC
1 2 3 4 5 6 6 7 7 TO	1 2 3 3 4 4 4 5 5 6 6 7 7 8 8 9 9 0 0 0 1 1 1 1 2 2 2 2 3 3 4 4 4 5 5 5 7 7 7 7 7 7 7 7 7 7 7 7 7 7	PCC	ETCS328A ETCS 214A ETCS211A ETCS304A ETCS365A ETCS367A ETCS325A ETCS325A ETCS325A ETCS428A ETCS428A ETCS448A ETCS464A	Mobile Application Development Theory of Computation Operating Systems Computer Networks Computer Networks Computer Networks Lab Mobile Application Development Lab iOS Development Lab Operating System Lab Practical Training I Communication and Analytical Skills-II t weeks duration at the end of sixth semester during system Major Project Boot Camp (Training and Placement) Computer Vision Lab Practical Training II Data Visualization and Story Telling Data Visualization and Story Telling Data Visualization and Story Telling	3 3 3 3 3 3 3 2 2 14 14 2 2 2 2	1 1 1	- 2 2 2 2 2 2 	3 4 4 1 1 1 1 2 22 22 21 22 22 20 20 20 20 20 20 20 20 20 20 20	EMP/ENT SE SE EMP/OP EMP/OP EMP/ENT SE EMP EMP EMP EMP EMP EMP EMP EMP EMP EM	1 2 3 4 5 6 6 7 8 9 (i) (iii) TOT	PCC PCC PCC PCC PCC PCC PCC PCC ACC PCC P	ETCS412A ETCS332A ETCS340A ETCS401A ETCS451A ETCS330A ETCS356A ETCS352A ETCS352A ETCS352A ETCS352A ETCS310A	Compiler Design Cl/CD & Microservice DevOps & Automation Artificial Intelligence Artificial Intelligence Lab Communication and Analytical Skills-III Cl/CD & Microservice Lab DevOps & Automation Lab Graph Theory Distributed Computing Systems Advanced Computer Architecture r.	3 3 - 2 3 3 3 3 3		- 2 2	3 3 4 1 2 1 1 1 3 3 3 2 2 2 2 2	EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P EMP/ENT/P SE/PEC EMP/PEC
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curves (without iab) can be offered as 50000 courses. The students has to appear in swayam courses and appear for examinations to earn cred

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

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Sohna Road, Gurugram, (Haryana)

ETCS464A	Major Project	I	T	P	C
Version 1.0		_	1-	-	6
Pre-requisites/Exposure					
Co-requisites					

The course is designed to provide an opportunity to students to demonstrate the ability to devise, select and use a range of methodologies and tools to the Chosen/Given project, applying the theoretical knowledge to a real life situation. Experiential Learning outside classroom through self-exploration, practical experience, Industry, field experience, live experience, research, design projects etc.

The learning process in the Project seeks out and focuses attention on many latent attributes, which do not surface in the normal class room situations. These experiential learning attributes through project includes Intellectual ability, Professional judgment and decision making ability, Inter-disciplinary approach, Skills for data handling, Ability in written and oral presentation, Sense of responsibility Developing professional Skills Application of theory, concepts in given industry /practical / field scenario.

Course Outcomes

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

- CO1. Use applied scientific knowledge to identify and implement relevant principles of mathematics and computer science.
- CO2. Use the relevant tools necessary for engineering practice.
- CO3. Define overall needs and constraints to solve a problem and develop/ design a prescribed engineering sub-system.
- CO4. Communicate effectively and learn to be a team player.

Catalog Description

Students are expected make a project based on the latest advancements related to the parent branch of Engineering. Students may opt for an in-disciplinary project (if feasible).

Registrar K.R. Mangalam University Sohna Road, Gurugram, (Harvana) The project may be a complete hardware or a combination of hardware and software under the guidance of a Supervisor from the Department. This is expected to provide a good training for the student(s) in technical aspects

Student will be continuously evaluated during the semester in form of Project Progress Seminars. At the end of the semester, assessment of the research/project work of each student will be made by the board of examiners including supervisors on the basis of a viva-voce examination and the report submitted by the student.

Course Content

The assignment to normally include:

- 1. Review and finalization of the Approach to the Problem relating to the assigned topic.
- 2. Preparing an Action Plan for conducting the investigation, including team work.
- 3. Detailed Analysis/Modelling/Simulation/Design/Problem Solving/Experiment as needed.
- 4. Final development of product/process, testing, results, conclusions and future directions.
- 5. Preparing a report in the standard format for being evaluated by the Department.
- 6. Final project presentation before a Departmental Committee.

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

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

	Mapping between COs and POs	
	Course Outcomes (COs)	Mapped Program Outcomes
CO1	Use applied scientific knowledge to identify and implement relevant principles of mathematics and computer science.	PO3
CO2	Use the relevant tools necessary for engineering practice.	PO5
CO3	Define overall needs and constraints to solve a problem and develop/ design a prescribed engineering sub-system.	PO3
CO4	Communicate effectively and learn to be a team player.	PO10

Cours	Course	Engineering Knowledge	Problem analysis	Design/development of solutions	Conduct investigations of complex problems	O w Modern tool usage	☐ The engineer and society	Environment and sustainability	O d Ethics	Individual or team work	Communication	Project management and finance	Life-long Learning	Application of Concepts	Innovation and Industry Friendly	Ethics and Communication Skills
Code	Title		102	103	104	5	6	107	8	109	FOIO	FOIT	FOIZ	1501	1502	1503
ETCS 462A	Major Project			3		2					3		*	3		

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K.R. Mangalam University

Sohna Road, Gurugram, (Hai) anal

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

Course Objectives

- 1. To learn how to carry out extensive research/study in the area of project implementation.
- 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.
- C02. 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	Attenda	Mid Term	Presentation/	End Term
		nce	Exam	Assignment/ etc.	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 of implementation on society.	PO6

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Cours e Code	Course Title	Engineering Knowledge	Problem analysis	Design/development of	Conduct investigations of complex problems	SOB Modern tool usage	9 d The engineer and society	Environment and sustainability	8 O d Ethics	Individual or team work	Communication	Project management and finance	Life-long Learning	Application of Concepts	Innovation and Industry Friendly	Ethics and Communication Skills
ETCS 490A	Industr ial Interns hip		3	3		3	2							3		2

1=weakly mapped

2= moderately mapped

3=strongly mapped

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