

Department of Computer Science and Engineering

Bengaluru-560107

COURSE OUTCOMES (2018-19)

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS32	COURSE ID	C202
COURSE TITLE		Analog a	nd D	igital Electr	onics		
COURSE OUTCO	OME	Afte	er stud	COURSE OUT lying this cou	COME STAT rse, stude	EMENTS nts will be a	ble to:
C202.1		Illustrate tl logic circui	ne wo ts, D/A	rking of FET, o A & A/D conve	pamp, cor rters.	ibinational &	sequential
C202.2		Design and develop the combinational circuits applying Boolean equation minimization techniques and write HDL code to simulate the same.					
C202.3		Design and develop the combinational circuits applying Boolean equation minimization techniques and write HDL code to simulate the same					
C202.4	C202.4 Write the HDL code to simulate working of flip-flops, registers a counters						

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS33	COURSE ID	C203		
COURSE TITLE		Data Structures and Applications							
COURSE OUTCO	OME	_		COURSE OUT	COME STATI	EMENTS			
NO		Afte	er stud	lying this cou	rse, stude	nts will be a	ble to:		
C203.1		Describe va	Describe various linear and non-linear data structures.						
C203.2		Choose appropriate data structure to be applied to specific problem definition							
C203.3		Apply basic operations like sorting, searching, insertion, deletion,							
C203.4		Write programs for applications of Data structures in a high-level language.							



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DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS34	COURSE ID	C204	
COURSE TITLE		Computer O	Computer Organization					
COURSE OUTCO	DME	Afte	er stud	COURSE OUT lying this cou	COME STAT rse, stude	EMENTS nts will be a	ble to:	
C204.1		Describe the basic structure of computer, I/O organization, memory performance issues, bus standards & embedded systems.						
C204.2		Illustra floating units.	Illustrate the working of fast adders' multipliers, division, floating point units hardwired & micro programmed control units.					
C204.3		Illustrate the working of stacks, queues, memory, I/O data transfers, memory management techniques, interrupt handling mechanisms, control signal generators using assembly language programs						
C204.4		Design	simpl	e memory unit	s, I/O inter	faces & contr	ol units.	

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS35	COURSE ID	C205	
COURSE TITLE Unix Shell Programming								
COURSE OUTCO	OME	COURSE OUTCOME STATEMENTS After studying this course, students will be able to:						
C205.1		Understand the UNIX environment and its basic commands utility.						
C205.2		Demonstrate functioning of vi editor, file attribute manipulation and UNIX filter commands.						
C205.3		Apply Regular expression to perform pattern matching using UNIX utilities						
C205.4		Analyze Sh	Analyze Shell and Process life cycles.					
C205.5		Implement	Shell	scripts and Pe	rl scripts fo	or simple app	lications.	

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS36	COURSE ID	C206
COURSE TITLE		Discrete Ma	thema	tical Strcutures			



COURSE OUTCOME	COURSE OUTCOME STATEMENTS
NO	After studying this course, students will be able to:
C206.1	Apply the knowledge of set theory, mathematical logic, quantifiers, principles of counting, to Solve computer science related problems.
C206.2	Apply the knowledge of, binary relations between two sets, relations, graphs and trees to solve problems.
C206.3	Apply the techniques of Probability theory, principles of inclusion/exclusion to solve real time problems
C206.3	Analyze basics knowledge gained by mathematical logic, mathematical induction, functions and relation and apply them on real time problems.

DEPARTMENT CS	SEMESTER	3	COURSE CODE	17CSL37	COURSE ID	C207		
COURSE TITLE	Analog a	Analog and Digital Electronics Laboratory						
COURSE OUTCOME	COURSE OUTCOME STATEMENTS							
NO	Afte	er stud	lying this cou	rse, stude	nts will be a	ble to:		
C207.1	Describe operation of opamp application circuits, and combinational logic circuits							
C207.2								
	Design various combinational logic circuits, data processing circuits,							
	counters and D/A converters							
C207.3	Demonstrat	e the s	imulation of vai	rious analog	; and digital cir	rcuits		

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CSL38	COURSE ID	C208		
COURSE TITLE		Data Structures Laboratory							
COURSE OUTCO	DME	COURSE OUTCOME STATEMENTS After studying this course, students will be able to:							
C208.1		Describe various linear and non-linear data structures							
C208.2		Choose the appropriate data structure for solving real world problems.							
C208.3 Develop and analyze various types of data structures and their applications						nd their			



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DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS42	COURSE ID	C212		
COURSE TITLE		Object O	Object Oriented Concepts						
COURSE OUTCO	DME	Afte	er stud	COURSE OUT lying this cou	COME STAT rse, stude	EMENTS nts will be a	ble to:		
C212.1		Explain th various cor	Explain the fundamentals of Object oriented programming and various constructs of Java programming language.						
C212.2		Implement robust console based and GUI based java programs wit suitable object oriented concepts for a given scenario							
C212.3		Demonstrate user-defined classes with thread capability and concurrent issues with thread programming.							
C212.4 Develop GUI application using Applets and Swings.									

DEPARTMENT	CS	SEMESTER	4	COURSE	17CS43	COURSE ID	C213		
				CODE					
COURSE TITLE									
	Design & Analysis of Algorithms								
COURSE OUTCO	OME			COURSE OUT	COME STAT	EMENTS			
NO		Afte	r ctu	dving this cou	rea etuda	nte will ho a	blo to:		
NO		Alte	Alter studying this course, students will be able to:						
C212.1		TIL. strate a							
C213.1		illustrate a	boutv	arious concep	ts of algori	tnms.			
C213.2									
		Write the different types of algorithms							
C213.3		Apply the functionality of various algorithms to solve problems.							
C213.4	C213.4								
Analyze the working methodology of different algorithms.						ms.			
		That the working methodology of unferent digorithms.							

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS44	COURSE ID	C214
COURSE TITLE		Micropro	ocess	or & Microo	controlle	r	



COURSE OUTCOME	COURSE OUTCOME STATEMENTS
NO	After studying this course, students will be able to:
C214.1	Analyze the architectural difference between Microprocessor and Microcontroller
C214.2	Develop Assembly Language Programs using instructions 8086 micro-processor and ARM micro-controller.
C214.3	Demonstrate ability to design IO and Memory interface with 8086 micro-processor and ARM micro-controller
C214.4	Illustrate usage of addressing modes and software interrupts present in instruction set of 8086 micro-processor and ARM micro-controller

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS45	COURSE ID	C215	
COURSE TITLE		Software Engineering						
COURSE OUTCO	OME	Afte	er stud	COURSE OUTCOME STATEMENTS Idving this course, students will be able to:				
C215.1		Illustrate the process of requirement gathering, classification, specification and validation in software engineering process.						
C215.2		Demonstrate an ability to design the software by applying softwa engineering design principles.						
C215.3 Apply design patterns, agile methodologies for developments software and also use tools such as SRUM. UML for designing the software and also use tools such as SRUM.						oment of signing		
C215.4		Illustrate project planning, cost estimation, quality management techniques and be aware of ethics.						

DEPARTMENT	CS	SEMESTER	4	COURSE	17CS46	COURSE ID	C216			
				CODE						
COURSE TITLE										
COURSE OUTCO	OME			COURSE OUT	COME STATI	EMENTS				
NO		Afte	er stud	lying this cou	rse, stude	nts will be a	ble to:			
C216.1		Illustrate the operation of various wireless network technologies								



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C216.2	Apply techniques used for channel capacity utilization, data									
	transmission, error control, and subnet masking in order to solve									
	networking issues.									
C216.3	Analyze and compare various data transmission techniques,									
	switching techniques, error and flow control techniques, and									
	Internet protocols.									
C216.4	Analyze and compare different wired and wireless network standards.									

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CSL47	COURSE ID	C217	
COURSE TITLE		Design and Analysis of Algorithms Lab						
COURSE OUTCOMECOURSE OUTCOME STATEMENTSNOAfter studying this course, students will be able to be able							ble to:	
C217.1		Design algorithms using appropriate design techniques.						
C217.2		Develop variety of algorithms such as sorting, graph related combinatorial, etc., in a high level language.						
C217.3		Analyze an language fe	d com ature:	pare the perfo s.	rmance of	algorithms u	sing	
C217.4		Apply and implement learned algorithm design techniques and data structures to solve real-world problems.						

DEPARTMENT	CS	SEMESTER	4	COURSE	17CSL48	COURSE ID	C218		
				CODE					
COURSE TITLE Microprocessor and Microcontroller Lab									
COURSE OUTCO	OME	COURSE OUTCOME STATEMENTS							
NO		Afte	er stud	lying this cou	rse, stude	nts will be a	ble to:		
		Demonstrate the ability to write, assemble, upload, run, debug							
C218.1		download	lownload results using relevant toolchain/IDE [MASM toolchain in						
		case 80x86 or Keil IDE in case of ARM] and report the findings.							



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C218.2	Write Assembly Language Programs using 8086 instructions to sort
	numbers, read input from key board, handle strings, display result
	and perform mathematical computations.
C218.3	Demonstrate ability to write modular programs and file handling programs in 80x86 assembly language
C218.4	Demonstrate ability to interface IO modules (such as keyboard, logic controller, 7-segment display, stepper motor and DAC) for 8086 and ARM and write assembly language program for transferring of data.

DEPARTMENT	CS	SEMESTER	5		15CS51	COURSE ID	C301		
COURSE TITLE		Management and Entrepreneurship (15CS51)							
COURSE OUTCO	DME	Afte	er stud	COURSE OUT lying this cou	COME STAT rse, stude	EMENTS nts will be a	ble to:		
C301.1		Describe the concepts of managerial skills that includes the functional areas of management,preparation of project,+ ERP							
C301.2		Illustrate the stages in entrepreneurial process, industrial policies to set up small scale industry and intellectual property rights.							
C301.3		Analyze the different management functions and entrepreneurial process in real time scenarios							
C301.4		Understand the institut	d the i ional	mportance of i support	ntellectual	property rig	hts and relate		
DEPARTMENT	CS	SEMESTER	5	COURSE CODE	15CS52	COURSE ID	C302		
COURSE TITLE		Computer N	etwork	s					
COURSE OUTCO	OME			COURSE OUT	COME STAT	EMENTS			
NO		Afte	er stud	lying this cou	rse, stude	nts will be a	ble to:		
		Illustrate the working of different protocols set in application,							
C302.1		transport a	nd ne	twork layer.					
C302.2		Interpret tl its use.	ne var	ious services p	provided by	computer n	etwork and		
C302.3		Explain the	struc	ture and comp	onents of o	different type	es of network.		
C302.4		Describe th	ie feat g	ures of wireles	ss, mobile a	and multimed	lia		



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DEPARTMENT	CS	SEMESTER	5	COURSE CODE	15CS53	COURSE ID	C303				
COURSE TITLE		Database Ma	Database Management Systems								
COURSE OUTCO	ME			COURSE OUT	COME STAT	EMENTS					
NO						-					
C303.1		Define Dat	tabase	e Objects, E-R	model an	d relational	model				
C303.2											
		Explain Normalization and basic Structural Query Language (So									
C303.3		Write the S Transaction	QL co n Proc	mmands, Norr cessing	nalization	Algorithms a	nd				
DEPARTMENT	CS	SEMESTER	5	COURSE	15CS54	COURSE ID	C304				
				CODE							
COURSE TITLE		Automat	a Th	eory and Co	mnutahi	lity					
	MF	Tutomat	u 111		COME STAT	EMENTS					
		Recognize	diffo	rent types of	automata	models from	m the verbal				
C204 1		Recognize	ume	Tent types of	automata	mouels no	In the verbar				
0.504.1	description of the real system.										
C204.2											
0.504.2		Design any applications in terms of appropriate deterministic or									
		besign any applications in terms of appropriate deterministic of									
		nondeterministic Models.									
C304.3		Apply diffe	rent n	nethods of form	nal languag	e like Regula	r Expressions				
				••••••			F				
		and contex	t free	e grammar in	solving p	roblems on	mathematical				
		programmi	ing								
C304.4		Analyze ar	nd sol	ve many pro	hlems with	most nowe	erful abstract				
		Thirdy Ze un		ve many pro							
		machine w	ith str	ategic conside	erations and	d decision ma	aking, classify				
		decidable a	ind un	decidable pro	blems of fo	rmal languag	jes.				
DEPARTMENT	CS	SEMESTER	5	COURSE	15CS56	COURSE ID	C306				
				CODE							
COURSE TITLE		Artificial	Inte	lligence							
COURSE OUTCO	ME			COURSE OUT	COME STAT	EMENTS					
NO											
C306.1		Illustrate various techniques for solving issues related to knowledge representation and Game playing									
C306.2		Describe th	ie var	ious searching	g, reasonin	g and learnir	ng techniques				
		for AI based problems.									
C306.3		Solve the k	nowle	dge represent	ation and (Game playing	problems by				
		using appropriate AI algorithms									



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C306.4		Apply appr	opriat	te searching, r	easoning a	nd learning a	lgorithms for		
		solving var	ious p	roblems.					
DEPARTMENT	CS	SEMESTER	5	COURSE CODE	15CSL57	COURSE ID	C307		
COURSE TITLE		Compute	er Net	tworks Lab					
COURSE OUTCO	DME			COURSE OUT	COME STATI	EMENTS			
C307.1 Demonstrate the working principle of various comm data transfer between nodes, error detection, data e and decryption algorithm, congestion control algori				munication ncept of encryption rithm.					
C307.2		Implement networking protocols using NS2 / NS3 and netw							
		concepts using java language.							
DEPARTMENT	CS	SEMESTER	5	COURSE	15CSL58	COURSE ID	C308		
COURSE TITLE		Database	Mar	agement S	veteme I	ah			
COURSE OUTCO	Databast	, Mai	COURSE OUT	COME STATI	EMENTS				
NO									
C308.1		Write SQL	queri	es for manip	ulation of	data			
C308.2	C308.2			Design suitable applications using databases					
C308.3		Implement SQL queries and applications, document the results.							
DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CS61	COURSE ID	C311		
COURSE TITLE		Cryptogr	aphy	, Network S	Security a	and Cyber	Law		
COURSE OUTCO	DME	COURSE OUTCOME STATEMENTS							
C311.1		Illustrate of security, a	conce nd ne	pts of cryptog ed for cyber l	graphy, seo aw.	curity proto	cols, cyber		
C311.2		Apply the knowledge of various cryptographic algorithms to secure							
		informatio	n.						
C311.3		Apply key i	nanag	ement technic	ues to ens	ure authentio	cation		
C311.4		Analyze various network security threats, cyber-attacks counter measures in computer network							
DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CS62	COURSE ID	C312		
COURSE TITLE		Compute	er Gra	nhics & Vie	ualizatio	n			
COURSE OUTCO	OME	Joinputt	1 010	COURSE OUT	COME STATI	EMENTS			
NO									



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		Design alg	orith	ms for 2D and	3D graph	ics primitive	es, attributes		
C312.1		and geome	etric t	ransformatio	ns.				
C312.2		Analyze di	ifferer	nt input inte	raction de	evices, differ	ent graphics		
		primitives a	primitives and animations in Open GI Graphics system						
C312.3		Apply conc	Apply concepts of polygon fill areas, area detection, clipping and						
		visible surface detection, Geometric transformations on 2D and 3D							
		primitives and for viewing and illumination							
				U					
C312.4		Illustrate G	eome	tric transform	ations on b	oth 2D and 3	D objects.		
C312.5		Write inpu	it int	eractions and	animatio	n programs	in Open GL		
		Graphics system							
DEPARTMENT	CS	SEMESTER	6	COURSE	15CS63	COURSE ID	C313		
		Sustam C	often	CODE	nnilon Da	aian			
	MF	System Software and Compiler Design							
NO									
C313.1		Interpret v	variou s loa	is types of sys	stem softw and macro	vare such as	compilers,		
C313.2		Design any	type	of scanners &	k parsers	by using diffe	erent parsing		
		techniques	for th	e given specifi	cations.				
C313.3		Illustrate th	ne abil	lity to write sy	ntax direct	ed translatio	ns of simple		
		statements	and t	he working of	procedure	calls.	•		
C313.4		Illustrate Ir	nplen	nent Transition	n diagrams	, intermediat	e code, target		
		code, flow	graph	s for the giver	n input pro	ogram and ge	nerate object		
		code.							
DEPARTMENT	CS	SEMESTER	6	COURSE	15CS64	COURSE ID	C314		
COURSE TITLE		Oneratin	σςνο	stems					
COURSE OUTCO	ME	operatin	<u>g by s</u>	COURSE OUT	COME STAT	EMENTS			
NO									
C314.1		Identify va	rious	SOS technique	es and pro	tection mec	hanism.		
C314.2		Apply the concepts of process scheduling and multithreading o					threading on		
		various issues of process management.							
C314.3		Demonstrate Process synchronization & deadlocks							
C314.4		Analyze t	he d	ifferent appr	oaches of	f memory	and storage		
		manageme	nt.						



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DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CS65	COURSE ID	C315		
COURSE TITLE		Operatio	n Re	search	L				
	OME	COURSE OUTCOME STATEMENTS							
C315 1		Illustrato	vario	is OR problem	n-solving t	tochniques			
C315.1		Apply OP t	ochnic	us to colvo th	a givon pro	blom			
		Apply OK technique to solve the given problem.							
C315.3		Analyze OF	R meth	od applicable	to given pr	oblem.			
C315.4		Formulate	OR mo	odel suitable t	o the specif	fic problem			
DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CS66	COURSE ID	C316		
COURSE TITLE		Python A	ppli	cation Prog	ramming	E			
	OME			COURSE OUT	COME STATI	EMENTS			
6216.1		Illustrate	Pytho	n programmi	ng concep	ts like condi	itional		
C316.1		execution, data structures, and regular expressions.							
C316.2		Write Python code for concepts like classes and objects, iterations,							
		strings, file handling etc.							
C316.3		Implement a Python application using web services and database concepts.							
C316.4		Design sol	utions	s to given pr	oblems us	ing Python j	programming		
		language							
DEPARTMENT	CS	SEMESTER	6	COURSE	15CSL67	COURSE ID	C317		
			-	CODE					
COURSE IIILE		System S	oftw	are & Opera	ating Sys	tems Lab			
COURSE OUTCO	OME			COURSE OUT	COME STATI	EMENTS			
C317.1		Demonstr	ate to	ken generati	on using L	ex tool			
C317.2		Demonstra	te par	sing using Yac	c tool				
C317.3		Implement	opera	ating system co	oncept like	scheduling, c	leadlock and		
		page replac	cemen	t algorithm					
C317.4		Demonstra	te tec	hnical informa	tion by me	ans of oral re	presentation.		
DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CSL68	COURSE ID	C318		
COURSE TITLE		CGV Lab	with	mini proje	ct				
COURSE OUTCO	OME	E COURSE OUTCOME STATEMENTS							
C318.1		Implement computer graphics primitives and algorithms using OpenGL API's							



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C318.2		Write programs on 2D/3D objects using modeling, transformation						
		and illumir	nation	concepts.				
C318.3		Design gra	phics	applications us	sing OpenG	L API's.		
C318.4		Demonstra	ite tec	hnical informa	ation by m	eans of oral j	presentations	
		and writte	n repo	orts as a team.				
DEPARTMENT	CS	SEMESTER	7	COURSE CODE	15CS71	COURSE ID	C401	
COURSE TITLE		Web Tec	hnol	ogy and its	Applicati	ions		
COURSE OUTCO	DME			COURSE OUT	COME STAT	EMENTS		
NO				-				
C401.1		lllustrate elements, handling.	web p styles	orogramming sheets, client-	concepts l server mo	ike various del and exce	HTML eption	
C401.2		Implement	mark	-up language c	ode for pre	esenting the i	nformation in	
		web pages.						
C401.3		Write client-side scripts to create interactive web pages.					·S.	
C401.4		Design serv	Design server-side programs to generate dynamic web pages.					
DEPARTMENT	CS	SEMESTER	7	COURSE CODE	15CS72	COURSE ID	C402	
COURSE TITLE		Advanced Computer Architecture						
COURSE OUTCO	DME			COURSE OUT	COME STAT	EMENTS		
C402.1		Illustrate the concepts of parallel computing like Super Scalar, VLIW , and multi-core and multi-cpu systems.						
C402.2		Interpret various Bus, memory and processor technologies						
		pipelines, c	pipelines, dynamic scheduling, branch prediction, caches, and vector					
		processors	-					
C402.3		Compare d	ifferei	nt hardware ar	nd software	e parallel arcl	hitectures	
C402.4		Docign ha	cic o	nd intermedi	ata DISC	ninolinos	ncluding the	
		Design Da	isit d			pipennes, I	altar l	
		instruction	i set, d	ata paths, and	ways of dea	aling with pip	eline hazards	
DEPARTMENT	CS	SEMESTER	7	COURSE CODE	15CS73	COURSE ID	C403	
COURSE TITLE		Machine Learning						
COURSE OUTCO	COURSE OUTCOME STATEMENTS							



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C403.1	Describe the terminologies, definitions and basic concepts of machine learning						
C403.2		Explain the different supervised and unsupervised machine learning					
		algorithms in detail					
C403.3		Apply the r	nachii	ne learning alg	orithms or	a given data	set.
						0	
C403.4		Design the	differ	ent machine le	arning app	lications usir	ng the state of
		art Python	librar	ies/tools.			
DEPARTMENT	DEPARTMENT CS		7	COURSE CODE	15CS74	COURSE ID	C404
COURSE TITLE		Informat	tion a	nd Networ	k Securit	y	
COURSE OUTCO	OME			COURSE OUT	COME STAT	EMENTS	
NO							
		Discuss th	e tern	ninologies & o	concepts o	of cryptograp	ohy, hash
C404.1		function, zero knowledge mechanism, public key management					
C404.2		and crypto	ograp	ny protocols.	on rondor	a number as	nonation bou
C404.2		Describe C	ipners	s, hash runcu	on, randon	i number ge	neration, key
		management, and different cryptography applications.					
C404.3		Apply the cryptographic techniques to secure the data.					
C+0+.3		inpply the t	rypto	graphic techni	ques to set	ule the uata.	
C404.4		Compare c	ryptog	graphic technic	ques to set ques & gen	erators to sec	cure the data
C404.3 C404.4 DEPARTMENT	CS	Compare constants	ryptog 7	graphic technic course CODE	ques to sec ques & gen 15CS75	erators to sec	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE	CS	Compare construction of the compare	ryptog 7 Area	graphic technic graphic technic COURSE CODE	ques to set ques & gen 15CS75	erators to sec	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO	CS DME	Compare construction of the compare	ryptog 7 Area	graphic technic graphic technic COURSE CODE Networks COURSE OUT	ques to see ques & gen 15CS75 COME STAT	COURSE ID	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO	CS DME	SEMESTER	ryptog 7 Area	course COURSE CODE Networks COURSE OUT	ques to sec ques & gen 15CS75	erators to sec COURSE ID	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO	CS DME	Compare constraints of the compare o	ryptog 7 Area arious	course course code Networks course out concepts and	ques to see ques & gen 15CS75 COME STAT	ETATORS TO SEC	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1	CS DME	SEMESTER Storage A Discuss va of data cer	ryptog 7 Area arious nter, v	raphic technic course code Networks course out concepts and virtualization.	ques to see ques & gen 15CS75 COME STAT	COURSE ID EMENTS	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2	CS DME	SEMESTER SEMESTER Discuss va of data cer Identify va	ryptog 7 Area arious ater, v	COURSE CODE Networks COURSE OUT COURSE OUT COURSE OUT COURSE OUT COURSE OUT	ques to see ques & gen 15CS75 COME STAT I terminol Compone	ETATORS TO SEC COURSE ID EMENTS ogy of SAN li nts of intelli	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2	CS DME	SEMESTER SEMESTER Discuss va of data cer Identify va system, Fib	ryptog ryptog 7 Area arious arious ore Cha	graphic technic graphic technic COURSE CODE Networks COURSE OUT concepts and virtualization. RAID Levels, annel SAN.	ques to see ques & gen 15CS75 COME STAT I terminol Compone	EMENTS Ogy of SAN li	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3	CS DME	Apply the c Compare c SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the	ryptog ryptog 7 Area arious arious ore Cha	graphic technic course code Networks course out concepts and virtualization. RAID Levels, annel SAN. epts of NAS, CA	ques to see ques & gen 15CS75 COME STAT I terminol Compone	EMENTS Ogy of SAN li nts of intelli	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3	CS DME	SEMESTER SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the securing &	ryptog ryptog 7 Area arious arious ore Cha e conce mana	graphic technic graphic technic COURSE CODE Networks COURSE OUT concepts and virtualization. RAID Levels, annel SAN. epts of NAS, CA ging Storage In	COME STAT	EMENTS Ogy of SAN li nts of intelli omputing & te re.	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3 C405.4	CS DME	Apply the c Compare c SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the securing & Describe va	ryptog ryptog 7 Area arious ore Cha ore Cha e conce mana arious	graphic technic course code Networks course out concepts and virtualization. RAID Levels, annel SAN. epts of NAS, CA ging Storage In backup, archiv	questo sec questo sec questa gen 15CS75 COME STAT I terminol Compone AS, cloud confrastructure ve & replic	EMENTS Ogy of SAN li omputing & tere. ation method	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3 C405.4 DEPARTMENT	CS DME CS	Apply the C Compare cr SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the securing & Describe va SEMESTER	ryptog ryptog 7 Area arious ore Char e conce mana arious 7	graphic technic graphic technic COURSE CODE Networks COURSE OUT concepts and virtualization. RAID Levels, annel SAN. epts of NAS, CA ging Storage In backup, archiv COURSE COURSE	ques to see ques & gen 15CS75 COME STAT COME STAT I terminol Compone AS, cloud confrastructu ve & replic 15CSL76	EMENTS COURSE ID EMENTS ogy of SAN li nts of intelli omputing & te re. ation method COURSE ID	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3 C405.3 C405.4 DEPARTMENT COURSE TITLE	CS DME CS	SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the securing & Describe va SEMESTER Machine	ryptog ryptog 7 Area Area arious arious arious 7 Lear	graphic technic course code Networks course out concepts and rirtualization. RAID Levels, annel SAN. epts of NAS, CA ging Storage In backup, archit COURSE code	ques to see ques & gen 15CS75 COME STAT I terminol Compone AS, cloud confrastructu ve & replic 15CSL76	EMENTS Ogy of SAN li omputing & tere. ation method COURSE ID	cure the data C405 ke elements igent storage echniques for ology C406
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3 C405.4 DEPARTMENT COURSE TITLE COURSE TITLE	CS DME CS CS	SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the securing & Describe va SEMESTER Machine	ryptog ryptog 7 Area arious ore Char e conce mana arious 7 Lear	graphic technic graphic technic COURSE CODE Networks COURSE OUT concepts and virtualization. RAID Levels, annel SAN. epts of NAS, CA ging Storage In backup, archiv COURSE CODE rning Lab COURSE OUT	ques to see ques & gen 15CS75 COME STAT I terminol Compone AS, cloud confrastructu ve & replic 15CSL76 COME STAT	EMENTS COURSE ID EMENTS ogy of SAN li nts of intelli omputing & te re. ation method COURSE ID EMENTS	cure the data C405
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3 C405.3 C405.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO	CS DME CS DME	SEMESTER SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the securing & Describe va SEMESTER Machine	ryptog ryptog 7 Area Area arious arious arious 7 Lear	COURSE COURSE CODE Networks COURSE OUT COURSE OUT COURSE OUT RAID Levels, annel SAN. epts of NAS, CA ging Storage In backup, archiv COURSE CODE ming Lab COURSE OUT	ques to see ques & gen 15CS75 COME STAT I terminol Compone AS, cloud confrastructu ve & replic 15CSL76 COME STAT	EMENTS Ogy of SAN li onputing & tere. ation method COURSE ID EMENTS	cure the data C405 ike elements igent storage echniques for ology C406
C404.3 C404.4 DEPARTMENT COURSE TITLE COURSE OUTCO NO C405.1 C405.2 C405.3 C405.4 DEPARTMENT COURSE TITLE COURSE TITLE COURSE OUTCO NO	CS DME CS DME	SEMESTER Storage A Discuss va of data cer Identify va system, Fib Explain the securing & Describe va SEMESTER Machine Describe t	ryptog ryptog 7 Area arious ore Char e conce mana arious 7 Lear he dif	graphic technic graphic technic COURSE CODE Networks COURSE OUT concepts and virtualization. RAID Levels, annel SAN. epts of NAS, CA ging Storage In backup, archiv COURSE CODE ming Lab COURSE OUT	questo sec questo sec >	EMENTS COURSE ID EMENTS ogy of SAN li nts of intelli omputing & teres ation method COURSE ID EMENTS INSUPERVISE	cure the data C405 ike elements igent storage echniques for ology C406 d machine



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C406.2		Implement the machine learning algorithms on appropriate datasets					
		using Python language					
C406.3		Calculate the target values, accuracy, precision and f1-score of					
DEPARTMENT	CS	different algorithms SEMESTER 7 COURSE 15CSL77 COURSE ID C4			C407		
				CODE			
COURSE TITLE		Web Technology Laboratory with mini project					
COURSE OUTCOME NO				COURSE OUT	COME STATI	EMENTS	
		Understar	nd th	e concepts	of Marku	p language	es, Scripting
C407.1		languages	and I	Database conr	nectivity		
C407.2		Write a pro	ogram	using client a	nd server s	side scripting	g language for
		developing	static	and dynamic	web pages		
C407.3		Develop cli	ent-se	erver application	ons using v	veb technolog	gies.
DEPARTMENT	CS	SEMESTER	7	COURSE	15CSP78	COURSE ID	C408
COURSE TITLE		Project Wor	k Phase	e -1			
COURSE OUTCOME		COURSE OUTCOME STATEMENTS					
C408.1		Map the technical knowledge acquired in the previous semesters for solving real world problems.					
C408.2		Apply new technologies & design techniques (platform, database,					
		etc.) concerned for devising a solution for a given problem					
		statement.					
C408.3							
		Apply project management skills (scheduling work, procuring parts and documenting					
		Furner diturner and working within the configure of a deadline)					
		Expenditures and working within the commes of a deadinej.					
C408.4		Work with team mates, sharing due and fair credits and collectively					
		apply effort for making project successful.					
C408.5		Communicate technical information by means of written and oral					
		sommanicate technical information by means of written and oral					
		reports.					
DEPARTMENT	CS	SEMESTER	8	COURSE CODE	15CS81	COURSE ID	C411
COURSE TITLE		Internet of Things				1	
COURSE OUTCOME		COURSE OUTCOME STATEMENTS					



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C411.1		Build simple IoT applications using Arduino UNO /Raspberry Pi					
C411.2		Analyze the essentials, challenges and security issues of Internet of					
		Things (IoT).					
C411.3		Review the	use o	f Machine Lea	rning as a t	cool for IoT an	nd Data
		Analytics.					
C411.4	C411.4			of Internet Pr	otocol in lo	oT Network L	ayer
C411.5		Evaluate tl	ne IoT	architectures	various te	echnologies a	and protocols
		used for de	ployn	nent of smart o	bjects in Io	oT network.	
DEPARTMENT	CS	SEMESTER	8	COURSE	15CS82	COURSE ID	C412
		D'- Data	A 1				
		Big Data	Anai	ytics			
NO	DIVIE			COURSE OUT		EIVIEINTS	
		Describe I	HDFS,	Map reduce	programn	ning model	& tools, data
C412.1		warehous	e arch	itecture & ap	oproaches	, Business ir	ntelligence &
		data minii	ıg to i	nterpret & m	ine large o	lata.	
C412.2		Apply the o	lata m	ining algorith	ns to any g	given real wo	rld scenario.
C412.3	Apply statistical tools with modern technologies like hadoop and man reduce						
C412.4		Recognize and implement various ways of selecting suitable model					
	parameter	s for d	ifferent machi	ne learning	g techniques.		
C412.5		Implement machine learning techniques and com				computing	
		environment that are suitable for the applications					tions under
		consideration.					
DEDADTNAENIT	<u> </u>	CENALCTED	0	COUDEE	150502		6412
DEPARTIVIENT	CS	SEIVIESTER	8	CODE	150383	COURSE ID	C413
COURSE TITLE		System Modelling and Simulation					
COURSE OUTCOME		COURSE OUTCOME STATEMENTS					
		Illustrate	the f	undamentals	of simu	lation, mod	els, queuing
C413.1		systems, Random number generation and distributions of					
		Simulation modelling					
C413.2							
		Demonstra	te abil	ity to simulate	and mode	i a real-world	system using
		different si	mulat	ion techniques	5.		
C413.3		Apply diffe	rent g	oodness of fit	tests to val	idate system	model.



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C413.4		Analyze the different random number generation techniques and					
		distribution of given input data by using the goodness of fit tests					
		usu button of given input data by using the goodness of fit tests					
DEPARTMENT	CS	SEMESTER	8	COURSE CODE	15CS84	COURSE ID	C414
COURSE TITLE		Internsh	ip / ł	Professiona	l Practice	e	I
COURSE OUTCO NO			COURSE OUT	COME STATI	EMENTS		
C414.1		Integrate (theory	y and practica	al knowled	lge.	
C414.2		Develop wo	ork ha	bits and attitu	des necess	ary for interr	ship success.
C414.3		Develop co the interns	mmur hip pr	nication, interp ocess.	oersonal an	d other critic	cal skills in
C414.4		Identify, w	rite de	own, and carry	y out perfo	rmance obje	ctives related
		to their tas	k assi	gnment.			
DEPARTMENT	CS	SEMESTER	8	COURSE CODE	15CSP85	COURSE ID	C415
COURSE TITLE		Project V	Vork	Phase-2			
COURSE OUTCO	ME			COURSE OUT	COME STATI	EMENTS	
		Map the technical knowledge acquired in the previous					
		Map the	tech	nical knowle	edge acqu	uired in tl	he previous
C415.1		Map the semesters	tech for so	nical knowle olving real wo	edge acqu orld proble	uired in tl ems.	he previous
C415.1 C415.2		Map the semesters Apply new	tech for so	nical knowle olving real we nologies & des	edge acqu orld proble sign techni	uired in tl ems. ques (platfo	ne previous rm, database,
C415.1 C415.2		Map the semesters Apply new etc.) concer	tech for so tech rned fo	nical knowle olving real we nologies & des or devising a se	edge acqu orld proble sign techni olution for a	uired in tl ems. ques (platfo a given probl	ne previous rm, database, em statement
C415.1 C415.2 C415.3		Map the semesters Apply new etc.) concer	tech for so tech rned fo	nical knowle olving real we nologies & des or devising a se	edge acqueredge a	uired in the ms. ques (platfor a given probl	ne previous rm, database, em statement
C415.1 C415.2 C415.3		Map the semesters Apply new etc.) concer Apply proje and docum	tech for so tech rned fo ect ma enting	nical knowle olving real wo nologies & des or devising a so anagement ski g Expenditures	edge acque orld proble sign techni olution for a lls (schedu	uired in the sems. ques (platfor a given probl ling work, pr ng within the	ne previous rm, database, em statement rocuring parts e confines of a
C415.1 C415.2 C415.3		Map the semesters Apply new etc.) concer Apply proje and docum deadline).	tech for so tech rned fo ect ma enting	nical knowle olving real wo nologies & des or devising a so anagement ski g Expenditures	edge acqu orld proble sign techni olution for a lls (schedu and worki	uired in the ems. ques (platfor a given probl ling work, pr ng within the	he previous rm, database, em statement rocuring parts e confines of a
C415.1 C415.2 C415.3 C415.3		Map the semesters Apply new etc.) concer Apply proje and docum deadline). Work with	tech for so tech rned fo ect ma enting team	nical knowle olving real wo nologies & des or devising a so anagement ski g Expenditures mates, sharing	edge acqu orld proble sign techni olution for a lls (schedu and worki	uired in the ems. ques (platfor a given probl ling work, pr ng within the air credits an	he previous rm, database, em statement rocuring parts e confines of a
C415.1 C415.2 C415.3 C415.4		Map the semesters Apply new etc.) concer Apply proje and docum deadline). Work with apply effor	tech for so tech rned fo ect ma enting team t for n	nical knowle olving real wo nologies & des or devising a so anagement ski g Expenditures mates, sharing naking project	edge acqu orld proble sign techni olution for a lls (schedu s and worki g due and fa successful.	uired in the ems. ques (platfor a given probl ling work, pr ng within the air credits an	he previous rm, database, em statement ocuring parts e confines of a ad collectively
C415.1 C415.2 C415.3 C415.4 C415.4		Map the semesters Apply new etc.) concer Apply proje and docum deadline). Work with apply effor Communica	tech for so tech rned fo ect ma enting team t for n ate te	nical knowle olving real wo nologies & des or devising a so anagement ski g Expenditures mates, sharing naking project chnical inform	edge acque orld problection sign technic olution for a lls (scheduc and working g due and fa successful.	uired in the ems. ques (platfor a given probl ling work, pr ng within the air credits an means of wri	he previous rm, database, em statement ocuring parts e confines of a ad collectively tten and oral
C415.1 C415.2 C415.3 C415.4 C415.5		Map the semesters Apply new etc.) concer Apply proje and docum deadline). Work with apply effor Communica reports.	tech for so tech rned for ect ma enting team t for n ate te	nical knowle olving real we nologies & des or devising a se anagement ski g Expenditures mates, sharing naking project chnical inform	edge acque orld problection sign technic olution for a lls (scheduc and working g due and fa successful nation by m	uired in the sems. ques (platfor a given proble ling work, pr ng within the second sec	he previous rm, database, em statement cocuring parts e confines of a nd collectively tten and oral
C415.1 C415.2 C415.3 C415.4 C415.5 DEPARTMENT	CS	Map the semesters Apply new etc.) concer Apply proja and docum deadline). Work with apply effor Communica reports. SEMESTER	tech for so tech rned fo ect ma enting team t for n ate te 8	nical knowle olving real wo nologies & des or devising a so anagement ski g Expenditures mates, sharing naking project chnical inform	edge acquering or id problems or id problems of the sign technic olution for a constraint of the sign technic of the sign tech	uired in the sems. ques (platformal a given problem a given pr	he previous rm, database, em statement cocuring parts e confines of a nd collectively tten and oral C416
C415.1 C415.2 C415.3 C415.3 C415.4 C415.5 DEPARTMENT COURSE TITLE	CS	Map the semesters Apply new etc.) concer Apply proje and docum deadline). Work with apply effor Communica reports. SEMESTER	tech for so tech rned fo ect ma enting team t for n ate te 8 al So	nical knowle olving real we nologies & des or devising a se anagement ski g Expenditures mates, sharing naking project chnical inform COURSE CODE eminar	edge acque orld problection sign technic olution for a lls (schedul and working g due and fa successful nation by m 15CSS86	uired in the sems. ques (platformal a given problem a given pr	he previous rm, database, em statement cocuring parts e confines of a nd collectively tten and oral C416
C415.1 C415.2 C415.3 C415.4 C415.4 C415.5 DEPARTMENT COURSE TITLE COURSE OUTCO	CS	Map the semesters Apply new etc.) concer Apply proje and docum deadline). Work with apply effor Communica reports. SEMESTER Technic	tech for so tech rned fo ect ma enting team t for n ate te 8 cal So	nical knowle olving real wo nologies & des or devising a so anagement skii g Expenditures mates, sharing naking project chnical inform COURSE CODE eminar COURSE OUT	edge acque orld problection sign technic olution for a lls (schedul and working g due and fa successful nation by m 15CSS86	a given probl ling work, pr ng within the air credits an neans of wri	he previous rm, database, em statement cocuring parts e confines of a d collectively tten and oral C416



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C416.1	Describe a new field by studying various research papers related to a concept, to summarize and review them.
C416.2	Examine the approach/methodology to perceive the problem
C416.3	Discuss by making an oral presentation using ICT tools before an evaluation committee.