

DEPARTMENT OF COMPUTER SCIENCE B.Sc. Computer Science

S.No	Programme Name	PO and CO
1.	B.Sc. Computer Science	Yes
2.	M.Sc. Computer Science	Yes
3.	M.Phil. Computer Science	Yes
4.	BCA	Yes
5.	MCA	Yes

	PROGRAMME OUTCOMES
PO1	Understand dynamic memory allocation and pointers.
PO2	Trace the flow of information from one node to another node in the network.
PO3	Understand the format and use of objects.
PO4	Able to Measure the product and process performance using various metrics
PO5	Design Secure applications.
PO6	Apply the various optimization techniques.
	PROGRAM SPECIFIC OUTCOME
PSO1	Understand the impact of the professional solutions in societal and environmental Contexts, and demonstrate the knowledge of, and need for sustainable development.
PSO2	Apply problem-solving skills and the knowledge of computer science to solve real world problems.
PSO3	Use software development tools, software systems, and modern computing platforms

PSO4	Communicate computer science concepts, designs, and solutions effectively and
	professionally
	PROGRAM EDUCATIONAL OBJECTIVES
PEO1	To study about I/O management, storage management
PEO2	To know the methods of connecting them to the peripheral devices.
PEO3	To learn Software design and Implementation
PEO4	To learn the basic principles of database and database design
PEO5	To understand computational development of graphics with mathematics

Sem	Course code	Course title	CO's						
				PO1	PO2	PO3	PO4	PO5	PO6
I	17110AEC11	Tamil- I	Learn the changes occurred in literature since						
			classical period.	*		*	*	*	
			Obtaining More information about						
			one'sculture and tradition	*	*		*	*	*
			Encourage creative writing and developing						
			self-confidence.	*	*	*		*	*

17132AEC11	Hindi-I	Enables other state students to continue their						
		learning phase without any disruptions.		*	*	*		
		Through this language the can						
		learn spirituality.	*	*	*		*	
		Students can learn social discrimination		*	*	*		
		Students can learn grammar techniques	*	*	*		*	
17111AEC11	Advanced	Academic skills in preparation for tertiary						
	English-I	study.	*	*	*		*	
		Presentation and participation skills.	*		*	*	*	
4742545044		Learning strategies and research skills						
			*	*	*	*	*	
		Academic essay and report writing skills	*		*	*	*	
17135AEC11	French-I	Focus on all four modalities of the language:						
17135AEC11 Fre		speaking, listening, reading and writing						
			*		*	*	*	
1/135ALCI1		As well as knowledge of Francophone						
		cultures and the skills of collaboration and						
		critical thinking	*	*		*	*	
		Students can compare and contrast cultural						
		practices as they relate to French and						
		American culture.	*	*	*		*	
17111AEC12Z	English-I	Focus on all four modalities of the language:						
		speaking, listening, reading and writing		*	*	*		

		As well as knowledge of Francophone						
		cultures and the skills of collaboration and						
		critical thinking	*	*	*		*	
		Students can compare and contrast cultural						
		practices as they relate to French and						
		American culture.	*	*		*	*	
		Improves their proficiency in English						
		language.	*	*		*	*	
		Develops functional communicative aspect of						
		language through a series of real life tasks	*	*		*	*	
17120SEC13	Programming	To understand the principles of Python and						
	in C with C++	aquire skills in programming in python To						
		develop the emerging applications of relevant						
		field using Python	*		*	*	*	
		Interpret the fundamental Python syntax and						
		semantics and be fluent in the use of Python						
		control flow statements.	*	*	*		*	
17112AEC15B	CLASSICAL	Understand the theory of, and be able to solve						
	ALGIBRA	problems in Caylee Hamilton Theorem, and						
		finding the Eigen values & Eigen vectors	*	*	*		*	
		Able to manipulate relation between root and						
		coefficients, symmetric functions of the roots	*	*	*	4	*	

		in terms of the coefficients and transformation of equation						
		be able to calculate summation related to						
		Binomial,	*		*	*	*	
		be able to calculate summation related to						
		Binomial, Exponential and Logarithmic series	*	*		*	*	
17112AEC16B	Numerical And	Apply numerical methods to find the solution						
	Statistical	ofalgebraic equations using different me						
	Methods	thod and numerical	*	*	*		*	
		Apply various interpolation methods and						
		finite difference concepts.	*		*	*	*	
		Work out numerical differentiation and						
		integration whenever and wherever						
		routine methods are not applicable.	*	*		*	*	
		Solve a differential equation using an						
		appropriate numerical method						
			*	*	*		*	
17120SEC13L	Programming	To implement the python programming						
	in C with C++ Lab	features in practical applications		*	*	*		
		To implement Python programs with						
		conditionals and loops	*	*			*	

		Represent compound data using Python lists,						
		tuples, dictionaries, turtles, Files and modules		*	*	*		*
		Use functions for structuring Python						
		programs.	*	*	*		*	*
19120SEC01AL		To make the students understand about the						
	Packages Lab-I	Democratic Rule and Parliamentarian						
		administration.	*	*	*		*	*
		To appreciate the salient features of the Indian						
		Constitution	*		*	*	*	
171 SEC01	Soft Skill-I	Learn the functions of union and State						
		Governments	*	*	*	*	*	
		Learn the power and functions of the						
		Judiciary	*		*	*	*	
17111SEC01L	Communicative	Know about universal human values and						
	English Lab-I	understand the importance of values in						
		individual, social circles, career path, and						
		national life.	*		*	*	*	
		From case studies of lives of great and						
		successful people who followed and practiced						
		human values and achieved self-actualization.	*	*		*	*	
		Realize their potential as human beings and						
	•		1	1	1			1
		conduct themselves properly in the ways of						

171INDCONS	Indian	Democratic values and citizenship Training						
	Constitution	are gained.		*	*	*		
		Awareness on Fundamental Rights are						
		established	*	*	*		*	
		Learn the functions of union and State						
		Governments	*	*		*	*	
		Learn the power and functions of the						
		Judiciary	*	*		*	*	
	Tamil- II	Know what devotion really is.Know the						
		fruitfulness obtained through devotion	*	*		*	*	
		Perceive the progress achieved in the society						
		through devotion	*		*	*	*	
		Obtaining More information about						
		one'sculture and tradition	*	*	*		*	
		Encourage creative writing and developing						
		self-confidence.	*	*	*		*	
		Aiming at enriching human excellence	*	*	*	*	*	
17132AEC21 Hindi-	Hindi-II	Enables other state students to continue their						
		learning phase without any disruptions						
			*		*	*	*	

		Through this language the can						
		learn spirituality Students can learn grammar						
		techniques. Enables them to enhance their						
		language skills. Enables them to develop						
		creative writing.	*	*		*	*	
		Students can learn social						
		Communicate effectively in most daily	*	*	*		*	
17111AEC21	Advanced	Communicate effectively in most daily						
	English-II	practical and social situations at both concrete						
		and abstract levels	*		*	*	*	
		Participate in formal and informal						
		conversations involving problem solving and						
		decision making	*	*		*	*	
		Speak on familiar concrete topics at a						
		descriptive level and present a detailed						
		analysis or comparison	*	*	*		*	
		Demonstrate an increased ability to respond						
		appropriately to the formality level of a social						
		interaction		*	*	*		
17135AEC21	French-II	Focus on all four modalities of the language:						
		speaking, listening, reading and writing.	*	*	*		*	

		As well as knowledge of Francophone						-
		cultures and the skills of collaboration and						
		critical thinking.		*	*	*		
		Students can compare and contrast cultural						_
		practices as they relate to French and						
		American culture	*	*	*		*	
17111AEC22	English-II	Read and appreciate literature	*	*	*		*	
		Know more about Mahatma Gandhi, Mother						_
		Teresa, and Martin Luther King.	*		*	*	*	
		Describe Daffodils, beauty of Byron's						
		Maid,Painful account of apple- pickers	*	*	*	*	*	
		Understand the basic Grammar, and Spoken						_
		English. Ability to write composition, letter						
		and vocabulary	*		*	*	*	
		Gain vocabulary through reading. Acquire						
		fluency in English language.	*		*	*	*	
17120SEC23	Internet and	To understand the core principles of the Java						
	Java Programming	Language	*	*		*	*	
		To study about Graphics programming using						_
		java Language	*	*	*		*	
17112AEC25B	Discrete	Students completing this course will be able						_
	Mathematics	to express a logic sentence in terms of		*	*	*		

		predicates, quantifiers, and logical						
		connectives						
17112AEC26B	Operations	Identify and develop operational research						
	Research	models from the verbal description of the real						
		system	*	*	*		*	
		Use mathematical software to solve the						
		proposed models.	*	*		*	*	
		Develop a report that describes the model And						
		the solving technique, analyses the results and						
		propose recommendations in language	*	*		*	*	
		Understand variety of problems such as						
		assignment, transportation, travelling						
		salesman etc.	*	*		*	*	
17120SEC24L	Internet and	Implement the concept of data structures						
	Java Programming	through ADT including List, Stack, and						
	Lab	Queues.						
			*		*		*	
		create a full set of UI widgets and other	*			*	*	
		components, including windows, menus,						
		buttons, checkboxes, text fields, scrollbars and						
		scrolling lists, using Abstract Windowing						
		Toolkit (AWT) & Swings	*	*	*		*	

		apply event handling on AWT and Swing						
		components	*	*	*		*	
		Learn to access database through Java						
		programs, using Java Data Base Connectivity						
		(JDBC)	*	*	*	*	*	
17120RLC27	Research Led	Communication skills are and what they can						
	Seminar	do to improve their abilities.						
		Understand role of communication in						
	Skill based Elective –II	teaching-learning process	*		*	*	*	
171 SEC02		Follow main ideas, key words, and important						
	Elective –II	details in an authentic 2-3 page text on a						
		familiar and partially predictable topic.	*		*	*	*	
]	Read in English for information, to learn the						
		language and to develop reading skills.	*	*		*	*	
17111SEC02L	Communicative	Improves comprehension and retention.						
	English Lab-II	Develop speaking and writing skills	*	*	*		*	
		Builds confidence in handling English						
		language. Develops ideas with coherence and						
		cohesion.		*	*	*		
IIII	Tamil-III	Achieve one's goal by following		•				
17110AEC31		the ancestral path. Obtaining More						
		information about one's culture and tradition;						

		They will expose themselves into many						
		question and answer session in research						
		stations through which they can mould						
		themselves for their better subject knowledge.		*	*	*		
17132AEC3	Hindi-III	Enables other state students to continue their						+
		learning phase without any disruptions.	*	*	*		*	
		Through this language they						1
		can learn spirituality.	*	*	*		*	
		Students can learn social						T
		discrimination.D18.	*		*	*	*	
17111AEC31	Advanced	Follow main ideas, key words, and important						
	Advanced English-III	details in an authentic 2-3 page text on a						
		familiar and partially predictable topic.	*	*	*	*	*	
		Read in English for information, to learn the						+
		language and to develop reading skills.	*		*	*	*	
		Write coherent paragraphs on familiar topics						
		with clear main ideas and some supporting						
		details. Develop a sense of audience.	*		*	*	*	
17135AEC31	French-III	Focus on all four modalities of the language:						1
	French-III	speaking, listening, reading and writing.	*	*		*	*	

		As well as knowledge of Francophone						
		cultures and the skills of collaboration and						
		critical thinking.	*	*	*		*	
		Students can compare and contrast cultural						
		practices as they relate to French and						
		American culture.		*	*	*		
		Students can demonstrate critical thinking and						
		Collaborative problem-solving through						
		advanced task-based language activities.	*	*	*		*	
17111AEC32	English-III	Gain vocabulary through reading. Acquire						
		fluency in English language	*	*		*	*	
		Understand the basic Grammar, and Spoken						
		English. Ability to write composition, letter						
		and vocabulary	*	*		*	*	
		Describe Daffodils, beauty of Byron's Maid,						
		painful account of apple- pickers	*	*		*	*	
		Understand the basic Grammar, and Spoken						
17120SEC33 Visual		English. Ability to write composition, letter						
		and vocabulary	*		*	*	*	
	Visual	Students list the visual programming	*		*	*	*	
	Programming	concepts. Explain basic concepts and	*	*	*		*	

		Practical skills relating to the conduct of laboratory and industrial work in General skills relating to non-subject specific competencies, communication, ICT knowledge, interpersonal, organization skills and ethical standards.	*	*	*		*	*
17120SEC34L	Visual Programming Lab	Cognitive abilities and skills relating to solution of problems in Physics and Physics Related Disciplines	*	*		*	*	*
		• Students prepare various projects by helping visual programming.	*		*	*	*	
		· The students can able to estimate the cost of farm equipment operation, coverage and power requirements	*	*	*	*	*	*
		operations. The students can learn in selection of suitable farm equipment for tillage to harvest based on field and crop conditions.		*	*			
		definitions. Express constants and arithmetic						

17113AEC35A	Applied physics	To understand arithmetic operations Develop						
	- I	the skill of recording financial transactions						
		and preparation of reports in accordance with						
		GAAP	*		*	*	*	
		To understand string and matrix operations	*	*		*	*	*
17113AEC36AL	Applied physics	An ability to apply knowledge of						
	Lab-I	mathematics, science, and engineering.						
		Graduates should transform knowledge of						
		mathematics, Physics, chemistry, Engineering						
		Mechanics, probability and statistics, and						
		engineering drawing in solving a wide range						
		of civil engineering problems.	*	*	*		*	*
		An ability to design, implement, evaluate a						
		system and conduct experiments, as well as to						
		analyze and interpret data. Graduates should						
		show that they can make decisions regarding						
		type, and number of data points to be						
		collected, duration of the experiment		*	*	*		*
		data points to be collected, duration of the						
	e	experiment to obtain intended results, and						
		demonstrate an understanding of accuracy and						
		precision of data	*	*	*		*	*

			An ability to design, implement and evaluate a						
			system, or process to meet desired needs						
			Graduates should be able to identify the						
			project goal;		*	*	*		*
III	17120RMC37	Research	Students who complete this course will be						
		Methodology	able to understand and comprehend the basics						
			in research methodology and applying them in						
			research/ project work.						
				*	*	*		*	*
			This course will help them to select an						
			appropriate research design.	*	*	*		*	*
			The course will also enable them to collect the						
			data, edit it properly and analyses it						
			accordingly. Thus, it will facilitate students'						
			prosperity in higher education.	*		*	*	*	
			With the help of this course, students will be						
			able to take up and implement a research						
			project/ study.	*	*	*	*	*	*
	171 SEC03	Skill based	Recognize when to use each of the Microsoft						
		Elective –III	Office programs to create professional and						
			academic documents.	*		*	*	*	
			Use Microsoft Office programs to create	*		*	*	*	
			personal, academic and business documents						
			, , , , , , , , , , , , , , , , , , , ,	*		*	*	*	

			following current professional and/or industry						
			standards.						
	17111SEC03L	Communicative	Learns to analyze unfamiliar words by						
		English Lab-III	understanding the structure of the English						
			language.	*	*		*	*	*
IV	17110AEC41	Tamil-IV	Realize how the ancient people changed their						
			life style according to the ages	*	*	*		*	*
			Learn how to change one's lifestyle						
			according to the needs of the future						
					*	*	*		*
			Obtaining More information about one's						
			culture and tradition; Encourage creative						
			writing and developing self-confidence.	*	*	*		*	*
	17132AEC41	Hindi-IV	Enables other state students to continue their						
			learning phase without any disruptions.	*	*		*	*	*
			Through this language they						
			can learn spirituality.	*	*		*	*	*
			Students can learn social						
			discrimination.D18.	*	*		*	*	*
	17111AEC41	Advanced	Make oral presentations effectively for						
		English-IV	academic purposes by using appropriate						
			discourse markers, transitions and						
			conjunctions.	*		*	*	*	

		Respond to spoken discourse in their content						
		courses and academic presentations.	*	*	*		*	*
		Follow oral instructions, identify details, and						
		evaluate the speakers' viewpoints and						
		attitudes	*	*	*		*	*
17135AEC41	French-IV	Focus on all four modalities of the language:						
		speaking, listening, reading and writing. As						
		well as knowledge of Francophone cultures						
		and the skills of collaboration and critical	*	*	*	*	*	*
	St	Students can compare and contrast cultural						
		practices as they relate to French and						
		American culture.	*		*	*	*	
17111AEC42	English-IV Kı	Know about genius of Shakespeare, Martin						
		Luther King, Mahatma Gandhi, and Mother						
		Teresa.	*	*		*	*	*
		Describe Daffodils, beauty of Byron's Maid,						
		Painful account of apple- pickers.	*	*	*		*	*
		Understand the basic Grammar, and Spoken						
		English. Ability to write composition, letter						
		and vocabulary	*		*	*	*	
17120SEC43	Active Server	Learners will be able to design web						
	Programming	applications using ASP.NET						

		Learners will be able to use ASP.NET						
		controls in web applications	*	*	*		*	
17120SEC44L	Active Server	Write Visual Basic programs using object-						
	Programming Lab	oriented programming techniques including						
	Lab	classes, objects, methods, instance variables,						
		composition, and inheritance, and						
		polymorphism		*	*	*		
		Create one and two dimensional arrays for						
		sorting, calculating and displaying of data.	*	*	*		*	
17113AEC45A	Applied physics	Effectively use and critically evaluate current						
	-II	technical/scientific research literature, online						
	-II 1	information, as well as information related to						
		scientific issues in the mass media		*	*	*		
		Integrate and relate scientific knowledge						
		learned from classroom with real life						
		situations.	*	*	*		*	
		Students acquire knowledge about the plant						
		and host relationship and their management	*	*	*		*	
		They get knowledge about the integrated						
		management of plant diseases and pest.	*		*	*	*	

17113AEC46AL	Applied physics	Effectively use and critically evaluate current						
	Lab –II	technical/scientific research literature, online						
		information, as well as information related to						
		scientific issues in the mass media	*	*	*	*	*	*
		Integrate and relate scientific knowledge						
		learned from classroom with real life						
		situations.	*		*	*	*	
171 SEC04	Skill based	Apply systems concepts and methodologies to						
	Elective –IV	analyze and understand interactions between						
		social and environmental processes.	*		*	*	*	
		Reflect critically about their roles and						
		identities as citizens, consumers and						
		environmental actors in a complex,						
		interconnected world.	*	*		*	*	
		Demonstrate proficiency in quantitative						
		methods, qualitative analysis, critical						
		thinking, and written and oral communication						
		needed to conduct high- level work as						
		interdisciplinary scholars and/or practitioners.	*	*	*		*	
		Analyze the ecosystem and able to understand						
		the different types of pollutions in country.						
		Learn about environmental pollution.	1		1			1

	17111SEC03L	Communicative	Learners will be able to design web						
		English Lab-IV	applications using ASP.NET	*	*	*		*	*
			Learners will be able to create database driven						
			ASP.NET web applications and web						
			servicesdemonstrate advanced knowledge of						
			programming for network communications	*	*		*	*	*
	171ENVTSTU	Environmental	Effectively use and critically evaluate current						
		Studies	technical/scientific research literature, online						
			information, as well as information related to						
			scientific issues in the mass media	*	*		*	*	*
			Integrate and relate scientific knowledge						
			learned from classroom with real life						
			situations.	*	*		*	*	*
V	17120SEC51	Data	Help students to develop essential skills to						
		Communication and	influence and motivate others	*		*	*	*	
		Networking	Nurture a creative and entrepreneurial mindset						
				*	*	*		*	*
			Make students understand the personal values						
			and apply ethical principles in professional	*	*	*		*	*
	17120SEC52	Operating	Identify the components required to build						
		System	different types of networks.	*	*	*	*	*	*

		Another node. Identify the						
		components required to build different						
		types of networks	*		*	*	*	
		· Learning all farm activities field						
		management and to gain maximum						
		knowledge about crops of a particular season	*	*		*	*	
17120SEC53	Microprocessor and its	Design various Scheduling algorithms.						
	Applications	Compare and contrast various memory	*	*	*		*	
	D m	management schemes.	*		*	*	*	
		Design and Implement a prototype file						
		systems.	*	*		*	*	
17120SEC54L	Microprocessor I	Design and implement programs on 8086						
	Lab	microprocessor.	*	*	*		*	
		Design and implement 8051 microcontroller						
		based systems		*	*	*		
17120SEC55L	Operating	Identify the architecture, infrastructure and						
	System Lab	delivery models of cloud computing	*	*	*		*	
		Address the core issues of cloud computing						
		such as security, privacy and interoperability		*	*	*		

		The students will be able to undertake						
		commercial cultivation of flower crop,						
		medicinal and aromatic plants.	*	*	*		*	
		· Students will gain knowledge to						
		establish different type's garden in various						
		locations.	*	*	*		*	
17120DSC56A	Cloud	Understand Distributed systems design and						
	Computing	implementation	*		*	*	*	
		Use Middleware to Build Distributed						
		Applications	*	*	*	*	*	
17120BRC57	Participation in	Design and implement programs on 8085						
L7120BRC57	Bounded Research	microprocessor.		*	*	*		
	nescure.	Design and implement 8051 microcontroller						
		based systems						
			*	*	*		*	
		· The student will learn the types of						
		Intellectual Property and legislations covering						
		IPR in India: Patents, Copyrights, Trademark,						
		Industrial design, Geographical indications,						
		Integrated circuits, and Trade secrets.	*	*		*	*	
171 SEC05	Skill Based	Execute the Unix Shell programming on the						
	Elective –V	given system configuration.	*	*		ate	*	

		Studying the concepts and applications of						
		remote sensing and image processing in						
		agriculture	*	*		*	*	*
		Understanding the concepts of						
		nanotechnology	*		*	*	*	
		Students know about the economic and						
		environmental feasibility of the precision						
		farming technology.	*	*	*		*	*
17111SEC05L	Communicative	Prepare their resume in an appropriate						
	English Lab-V	template without grammatical and other errors						
		and	*	*	*		*	*
		Actively participate in group discussions						
		towards gainful employment						
		Enlist the common errors generally made by	*	*	*	*	*	*
		candidates in an interview						
		cundidates in an interview						
		Integrate and relate scientific knowledge	*		*	*	*	
		learned from classroom with real life						
		situations.	*	*	*		*	*

VI .	NET	Create web-based distributed applications						
17120SEC61 F	Programming	using ASP.NET, SQL Server and ADO.NET						
			*		*	*	*	
		Utilize DirectX librariesinthe.NET						
		environment to implement 2D and						
		3DAnimations and game-related graphic						
		displays and audio.	*	*		*	*	*
		Understand the key protocols which						
		supportThe internet.	*	*	*		*	*
17120SEC62 F	Relational Data	Demonstrate the basic elements of a relational						
	Base Management	database management system.						
	System							
			*	*	*	*	*	*
		Design entity relationship and convert entity						
		relationship diagrams into RDBMS and						
		formulate						
				*	*	*		*
		summarization forms and determine data						
		mining functionalities	*	*	*		*	*
		· Students learn to use the natural farm						

17120SEC63L	.NET Programming Lab	Assess raw input data, and process it to provide suitable input for a range of data						
		mining algorithms.	*		*	*	*	
		Students will be equipped with management						
		concepts and management of common						
		resources.	*	*	*	*	*	*
		Evaluate and select appropriate data-mining						
		algorithms and apply, and interpret and	*		*	*	*	
17120SEC64L	Oracle Lab	Contrast and compare major elements of the						
		.NET Framework and explain how C# fits into						
		the .NET platform.	*		*	*	*	
		Analyze the basic structure of a C#						
		application and be able to document, debug,						
		compile, and run a simple application.						
			*	*		*	*	*
		Create methods (functions and subroutines)						
		that can return values and take parameters.	*	*	*		*	*
		Use common statements to implement flow						
		control, looping, and exception handling.		*	*	*		*

17120DSC56B	Software	Develop mathematical thinking and problem						
	Engineering	solving skills associated with research and						
		writing proofs.						
			*	*		*	*	*
		Get exposure to a wide variety of						
		mathematical concepts used in computer						
		science discipline like probability.	*	*	*		*	*
17120DSC65A	Data Mining	Summarization forms and						
		determine data mining functionalities.	*	*	*		*	*
		· They have been familiarized with methods						
		of food preservation and the fundamentals of						
		human Nutrition.	*	*		*	*	*
		Brief knowledge about SQL Fundamentals	*	*		*	*	*
17120DSC65B	Artificial	Develop mathematical thinking and problem					-	-
	Intelligence	solving skills associated with research and						
	and Expert System	writing proofs.						
			*	*		*	*	*
		Get exposure to a wide variety of						
		mathematical concepts used in computer						
		science discipline like probability.						
			*		*	*	*	

		Understand the mathematical fundamentals						
		that are prerequisites for a variety of courses						
		like Data Mining, Network protocols, analysis						
		of Web traffic, Computer security,						
		Bioinformatics and Machine Learning.	*	*	*		*	*
17111SEC03L	Communicative	To understand and analyses Information						
	English – VI	security threats & countermeasures	*	*	*		*	*
		To understand penetration and security testing						
		issues	*	*	*	*	*	*
		To understand issues relating to ethical						
		hacking	*		*	*	*	
	Extension	To understand and analyses Information						
	Activities	security threats & countermeasures	*	*		*	*	*
		To understand penetration and security testing						
		issues	*	*	*		*	*
		To understand issues relating to ethical						
		hacking	*		*	*	*	
		Develop and maintain problem-solving skills.						
		Use mathematical ideas to model real-world						
		problems	*	*		*	*	

Journalism	know and demonstrate understanding of the						
	concepts from the five branches of						
	mathematics (Operations Research, Set						
	Theory, statistics, Matrices and Business						
	mathematics)	*	*	*		*	*
	use appropriate mathematical concepts and						
	skills to solve problems in both familiar and						
	unfamiliar situations including those in real-						
	life contexts		*	*	*		*
Development of	To use the techniques and skills for electrical projects.						
		*	*	*		*	*
	meet desired needs in electrical engineering.		*	*	*		*
	Measurement of R,L,C, Voltage, Current,						
	Power factor, Power, Energy	*	*	*		*	*
Instrumentatio	Compare the strengths and limitations of						
n	cloud computing						
		*		*	*	*	
	Identify the architecture, infrastructure and						
	delivery models of cloud computing	*	*	*		*	*
Food and Adulteration	Apply suitable virtualization concept.	*	*	*		*	*
	Development of Mathematical Skills Instrumentation	concepts from the five branches of mathematics (Operations Research, Set Theory, statistics, Matrices and Business mathematics) use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real- life contexts Development of Mathematical Skills	concepts from the five branches of mathematics (Operations Research, Set Theory, statistics, Matrices and Business mathematics) use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real-life contexts Development of Mathematical Skills	concepts from the five branches of mathematics (Operations Research, Set Theory, statistics, Matrices and Business mathematics) use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real- life contexts * Development of Mathematical Skills Design a system, component or process to meet desired needs in electrical engineering. Measurement of R,L,C,Voltage, Current, Power factor, Power, Energy * Instrumentatio n Compare the strengths and limitations of cloud computing * Identify the architecture, infrastructure and delivery models of cloud computing * Apply suitable virtualization concept.	concepts from the five branches of mathematics (Operations Research, Set Theory, statistics, Matrices and Business mathematics) use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real- life contexts * * Development of Mathematical Skills Design a system, component or process to meet desired needs in electrical engineering. Measurement of R,L,C, Voltage, Current, Power factor, Power, Energy Instrumentatio n Instrumentatio Instrumentatio Adultary models of cloud computing * * Apply suitable virtualization concept.	concepts from the five branches of mathematics (Operations Research, Set Theory, statistics, Matrices and Business mathematics) use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real- life contexts Development of Mathematical Skills Design a system, component or process to meet desired needs in electrical engineering. Measurement of R,L,C, Voltage, Current, Power factor, Power, Energy Instrumentatio n Instrumentatio Compare the strengths and limitations of cloud computing * * * Identify the architecture, infrastructure and delivery models of cloud computing * * * Apply suitable virtualization concept.	concepts from the five branches of mathematics (Operations Research, Set Theory, statistics, Matrices and Business mathematics) use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real- life contexts To use the techniques and skills for electrical projects. Design a system, component or process to meet desired needs in electrical engineering. Measurement of R,L,C, Voltage, Current, Power factor , Power, Energy Instrumentatio n Identify the architecture, infrastructure and delivery models of cloud computing * * * * * * * * * * * * * * *

17117GEC	Mushroom	Get an insight into the processes of software						
	Technology	development	*		*	*	*	
		Able to understand the problem domain for						
		developing SRS and various models of						
		software	*		*	*	*	
17161GEC	Indirect Tax	Develop Tax multiplication skills To get a						
		job	*	*	*		*	*
		Able to Model software projects into high						
		level design using DFD,UML diagrams	*	*	*	*	*	*
171SEC06	Skill Based	Able to Measure the product and process						
	Elective –VI	performance using various metrics	*		*	*	*	
		Able to Evaluate the system with various						
		testing techniques and strategies	*	*		*	*	*
17120PRW67	Project Work	lobal Registered Education Provider Certified						
		and experienced Subject Matter Experts	*	*	*		*	*



SCHOOL OF ARTS AND SCIENCE DEPARTMENT OF COMPUTER SCIENCE BCA

	PROGRAMME OUTCOMES
PO1	Able to design and develop reliable software applications for social needs and
	Excel in IT enabled services.
PO2	Able to analyze and identify the customer requirements in multidisciplinary
	domains, create high level design and implement robust software applications
	using latest technological skills.
PO3	Proficient in successfully designing innovative solutions for solving real life business problems and addressing business development issues with a passion for quality, competency and holistic approach
PO4	Perform professionally with social, cultural and ethical responsibility as an
	individual as well as in multifaceted teams with positive attitude
PO5	Capable of adapting to new technologies and constantly upgrade their skills with
	An attitude towards independent and lifelong learning.
PO6	Develop various real time applications using latest technologies and programming
	languages
	PROGRAM SPECIFIC OUTCOME
PSO1	Professional Skills: Attain the ability to design and develop computer applications, evaluate and recognize potential risks and provide innovative solutions.
PSO2	Successful Career and Entrepreneurship: Explore technical knowledge in diverse
	areas of Computer Applications and experience an environment conducive in
	Cultivating skills for successful career, entrepreneurship and higher studies.
PSO3	To formulate and develop mathematical arguments in a logical manner.

PSO4	To acquire good knowledge and understanding in advanced areas of mathematics
	and statistics, chosen by the student from the given courses.
PSO5	To understand, formulate and use quantitative models arising in social science,
	Business and other contexts.
	PROGRAM EDUCATIONAL OBJECTIVES
PEO1	Evolve as globally competent computer professionals possessing leadership skills

Sem	Course code	Course title	CO's						
				PO1	PO2	PO3	PO4	PO5	PO6
I	17110AEC11	Tamil- I	Learn the changes occurred in						
			literature since classical period.	*		*	*	*	
			Obtaining More information about						
			one's						
			culture and tradition	*	*		*	*	*
			Encourage creative writing and						
			developing self-confidence.						
				*	*	*		*	*
	17132AEC11	Hindi-I	Enables other state students to						
			continue their learning phase without						
			any disruptions.						
					*	*	*		*

		Through this language						
		they can learn						
		spirituality.						
			*	*	*		*	*
		Students can learn social						
		discrimination						
				*	*	*		*
		Students can learn grammar						
		techniques						
17111AEC1	Advanced English-I	Academic skills in preparation for	*	*	*		*	*
I/IIIAECI	Advanced English i	tertiary study.						
		ternary study.						
			*	*	*		*	*
		Presentation and participation skills.						
			*		*	*	*	
		Learning strategies and research						
		skills	*	*	*	*	*	*
		Academic essay and report						
		writing skills						
			*		*	*	*	

17135AEC11	French-I	Focus on all four modalities of the						
		language: speaking, listening,						
		reading and writing	*		*	*	*	
		As well as knowledge of						
		Francophone cultures and the skills						
		of collaboration and critical thinking	*	*		*	*	*
		Students can compare and contrast						
		cultural practices as they relate to						
		French and American culture.	*	*	*		*	*
		Improves their proficiency in						
		English language.						
				*	*	*		*
		Develops functional communicative						
		aspect of language through a series						
		of real life tasks	*	*	*		*	*
17111AEC12	English-I	Read and comprehend literature						
		Understand how to lead one's life	*	*		*	*	*
		realizing the modernity and its						
		environment/atmosphere.	*	*		*	*	*
				-		Ψ.	7	***

		Improves their proficiency in English language.						
			*	*		*	*	*
		Develops effective writing skills.	*		*	*	*	
		Develops functional communicative aspect of language through a series						
		of real life tasks.	*	*	*		*	k
17122SEC13	Programming in C with C++	Design C Programs for problems.						
		Able to understand and design the	*	*	*		*	k
		solution to a problem using object- oriented programming concepts.						
			*	*	*	*	*	*

17122SEC13L	Programming in C with	Read understand and trace the						
	C++Lab	execution of programs written in C						
		language.						
			*		*	*	*	
		Implement programs with pointers						
		and arrays, perform pointer						
		arithmetic, and use the pre-						
		processor.						
			*	*		*	*	
17112AEC15B	Classical algebra	Understand the theory of, and be						
		able to solve problems in Caylee						
		Hamilton Theorem, and finding the						
		Eigen values & Eigen vectors	*	*	*		*	
		Able to manipulate relation between						
		root and coefficients, symmetric						
		functions of the roots in terms of the						
		coefficients and transformation of						
		equation						
		be able to calculate summation	*		*	*	*	1
		related to Binomial,						
		related to Rinomial						

		be able to calculate summation related to Binomial, Exponential and Logarithmic series						
17112AEC16B	Numerical and statistical methods	Apply numerical methods to find the solution of algebraic equations using different method and numerical Apply various interpolation methods	*	*	*	*	*	*
		work out numerical differentiati on and integration whenever and wherever routine methods are not applicable.	*	*	*		*	*

		Solve a differential equation using						
		an appropriate numerical method						
			*	*	*		*	*
171SEC01	Skill Based Elective -I	Apply systems concepts and						
		methodologies to analyze and						
		understand interactions between						
		social and environmental processes.						
			*	*	*		*	*
		Reflect critically about their roles						
		and identities as citizens, consumers						
		and environmental actors in a						
		complex, interconnected world.						
			*		*	*	*	
		Apply systems concepts and						
		methodologies to analyze and						
		understand interactions between						
		social and environmental processes.						
		r						
			*	*	*	*	*	

171INDCONS	Indian Constitution	Understand how Constitutions						
		embody certain ideals.						
			*		*	*	*	
		Learn why there is a need for limits						
		on power in a democratic form of						
		government.						
			*		*	*	*	
		Understand the difference between						
		monarchy, dictatorship and						
		democracy.						
			*	*		*	*	
		Describe the importance of Preamble						
		of the Indian Constitution and its						
		significance.						
			*	*	*		*	
17111SEC01L	Communicative English	Know about universal human values						
	Lab-I	and understand the importance of						
				*	*	*		

			values in individual, social circles,						
			career path, and national life.						
			From case studies of lives of great						
			and successful people who followed						
			and practiced human values and						
			achieved self-actualization.						
				*	*	*		*	*
			Realize their potential as human						
			beings and conduct themselves						
			properly in the ways of the world.						
				*	*		*	*	*
II	117110AEC21	Tamil- II	Know what devotion really is.	T	-		4	-	*
			Know the fruitfulness obtained						
			through devotion	*	*		*	*	*
			Perceive the progress achieved in the						
			society through devotion	*	*		*	*	*

		Obtaining More information about						
		one's						
		culture and tradition	*		*	*	*	
		Encourage creative writing and						
		developing self-confidence.						
			*	*	*		*	*
		Aiming at enriching human						
		excellence	*	*	*		*	*
17132AEC21	Hindi-II	Enables other state students to						
		continue their learning phase without						
		any disruptions	*	*	*	*	*	*
		Through this language						
		the can learn spirituality						
		Students can learn grammar						
		techniques.						
		Enables them to enhance their						
		language skills.						
			*		*	*	*	

		Enables them to develop creative						
		writing.						
		Students can learn social						
		discrimination.D18	*	*		*	*	:
17111AEC21	Advanced English-II	Communicate effectively in most						
		daily practical and social situations						
		at both concrete and abstract levels	*	*	*		*	
		Participate in formal and informal						
		conversations involving problem						
		solving and decision making	*		*	*	*	
		Speak on familiar concrete topics at						
		a descriptive level and present a						
		detailed analysis or comparison	*	*		*	*	
		Demonstrate an increased ability to						
		respond appropriately to the						
		formality level of a social interaction						
			*	*	*		*	

17135AEC21	French-II	Focus on all four modalities of the						
		language: speaking, listening,						
		reading and writing.						
				*	*	*		*
		As well as knowledge of						
		Francophone cultures and the skills						
		of collaboration and critical thinking.						
			*	*	*		*	*
		Students can compare and contrast						
		cultural practices as they relate to						
		French and American culture		*	*	*		*
17111AEC22	English-II	Read and appreciate literature						
			_					
		Know more about Mahatma Gandhi	*	*	*		*	*
		·						
		Killg.						
			*	*	*		*	*
			language: speaking, listening, reading and writing. As well as knowledge of Francophone cultures and the skills of collaboration and critical thinking. Students can compare and contrast cultural practices as they relate to French and American culture	language: speaking, listening, reading and writing. As well as knowledge of Francophone cultures and the skills of collaboration and critical thinking. * Students can compare and contrast cultural practices as they relate to French and American culture 17111AEC22 English-II Read and appreciate literature * Know more about Mahatma Gandhi, Mother Teresa, and Martin Luther King.	language: speaking, listening, reading and writing. ** As well as knowledge of Francophone cultures and the skills of collaboration and critical thinking. * * Students can compare and contrast cultural practices as they relate to French and American culture * * Know more about Mahatma Gandhi, Mother Teresa, and Martin Luther King.	language: speaking, listening, reading and writing. * * As well as knowledge of Francophone cultures and the skills of collaboration and critical thinking. * * * Students can compare and contrast cultural practices as they relate to French and American culture * * 17111AEC22 English-II Read and appreciate literature * * Know more about Mahatma Gandhi, Mother Teresa, and Martin Luther King.	language: speaking, listening, reading and writing. * * * As well as knowledge of Francophone cultures and the skills of collaboration and critical thinking. * * * Students can compare and contrast cultural practices as they relate to French and American culture * * * * * * * * * * * * * * *	language: speaking, listening, reading and writing. * * * * As well as knowledge of Francophone cultures and the skills of collaboration and critical thinking. * * * * * Students can compare and contrast cultural practices as they relate to French and American culture * * * * I7111AEC22 English-II Read and appreciate literature * * * * Know more about Mahatma Gandhi, Mother Teresa, and Martin Luther King.

		Describe Daffodils, beauty of						
		Byron's Maid,						
		Painful account of apple- pickers	*		*	*	*	
		Understand the basic Grammar, and						
		Spoken English. Ability to write						
		composition, letter and vocabulary	*	*	*	*	*	
		Gain vocabulary through reading.						
		Acquire fluency in English language.						
			*		*	*	*	
17122SEC23	Data Structure and	Understand development of JAVA						
	Algorithms	applets vs. JAVA applications.						
			*		*	*	*	
		Understand object inheritance and its						
		use.						
				*		*	*	
			*	*			-	
17122SEC24L	Data Structure and	To develop software applications	*	*		-	-	
17122SEC24L	Data Structure and Algorithms Lab	To develop software applications using Java programming language.	*	*				

		Write modular, multithreading and						
		event driven programming.						
				*	*	*		
	Discrete Mathematics	Students completing this course will						
		be able to express a logic sentence in						
17112AEC25B		terms of predicates, quantifiers, and						
		logical connectives	*	*	*		*	
17112AEC26B	Operations Research	Identify and develop operational						
		research models from the verbal						
		description of the real system	*	*		*	*	
		Use mathematical software to solve						
		the proposed models.						
			*	*		*	*	
		Develop a report that describes the	*	*		*	*	
		model						
		And the solving technique, analyses						
		the results and propose						
		recommendations in language	*	*		*	*	

		Understand variety of problems such						
		as assignment, transportation,						
		travelling salesman etc.						
			*		*	*	*	
17122RLC27	Research Led Seminar	This course provides an experience						
		in leading and participating in a						
		discussion about a scientific paper.						
			*	*	*		*	*
171SEC02	Skill Based Elective-II	Develop speaking and writing skills						
		•						
		Identifying strengths and weaknesses	*	*	*		*	*
		of contributions and expanding a						
		discussion beyond the paper content.						
			*	*	*	*	*	*
		Improves their ability to read and						
		spell words through an analysis of						
		structure of the English language.						
			*		*	*	*	

17111SEC02L	Communicative English	Business etiquette training, a key						
	Lab-II	part of soft skills & communication,						
		facilitated by Momentum enlightens						
		participants on the accepted						
		behaviour patterns and manners key						
		to their profession.						
			*	*	*	*	*	*
		It emphasises on a set of practices	T	.	T		T	*
		used and accepted in a multi-national						
		work environment.						
		•						
			*		*	*	*	
IIII	Tamil-III	Achieve one's goal by						
17110AEC31		following the ancestral path.						
			*	*		*	*	*
		They will expose themselves into						
		many question and answer session in						
		research stations through which they						
			*	*	*		*	*

		can mould themselves for their better						
		subject knowledge.						
17132AEC31	Hindi-III	Enables other state students to						
		continue their learning phase without						
		any disruptions.						
				*	*	*		*
		Through this language						
		they can learn						
		spirituality.						
			*	*	*		*	*
		Students can learn social						
		discrimination.D18.						
				*	*	*		*
17111AEC31	Advanced English-III	Follow main ideas, key words, and						
		important details in an authentic 2-3						
		page text on a familiar and partially						
		predictable topic.						
			*	*	*		*	*

		Read in English for information, to learn the language and to develop reading skills.						
			*	*	*		*	*
		Write coherent paragraphs on familiar topics with clear main ideas and some supporting details. Develop a sense of audience.						
		- 1 7 3 3 3 4 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	*		*	*	*	
17135AEC31	French-III	Focus on all four modalities of the language: speaking, listening, reading and writing.						
			*	*	*	*	*	*
		As well as knowledge of Francophone cultures and the skills						
		of collaboration and critical thinking.	*		*	*	*	

		Students can compare and contrast						
		cultural practices as they relate to						
		French and American culture.						
			*		*	*	*	
		Students can demonstrate critical						
		thinking and Collaborative problem-						
		solving through advanced task-based						
		language activities.	*	*		*	*	
17111AEC32	English III	Understand the basic Grammar, and						
		Spoken English. Ability to write						
		composition, letter and vocabulary.						
			*	*	*		*	
		Know more about Mahatma Gandhi,						
		Mother Teresa, Martin Luther King.						
				*	*	*		

17122SEC33	Internet and Java	Design, create, build, and debug						
	Programming	Visual Basic applications.						
			*	*	*		*	*
		Explore Visual Basic's Integrated						
		Development Environment (IDE).						
			*	*		*	*	*
		Write Windows applications using						
		forms, controls, and events						
			*	*		*	*	*
		Write and apply decision structures						
		for determining different operations.						
			*	*		*	*	*
117122SEC34L	Internet and Java	Apply arithmetic operations for	*			*	*	
	Programming Lab	displaying numeric output.						
		displaying numeric output.						
			*		*	*	*	

		Apply decision structures for						
		determining different operations.						
			*	*	*		*	
17161SEC35	Financial Accounting	Through this language						
		they can learn						
		spirituality of accounts.						
			*	*	*		*	
		Students can learn						
		Financial Statements						
			*	*	*	*	*	
17113AEC36C	Allied Physics – I	Demonstrate a working knowledge						
		of the basic concepts and theories of						
		physics.						
			*		*	*	*	
		Formulate hypotheses and devise						
		and perform experiments to test a						
		hypothesis as individuals and in a						
		team.						
			*	*		*	*	

			Cognitive abilities and skills relating						
			to solution of problems in Physics						
			and Physics Related Disciplines						
III	17122RMC37	Research Methodology	Students who complete this course						
			will be able to understand and						
			comprehend the basics in research						
			methodology and applying them in						
			research/ project work.						
				*	*	*		*	*
			This course will help them to select						
			an appropriate research design.						
				*		*	*	*	
			The course will also enable them to						
			collect the data, edit it properly and						
			analyses it accordingly. Thus, it will						
			facilitate students' prosperity in						
			higher education.	*	*		*	*	*

				*	*	*		*
		professional and academic documents.						
	Law-III	Microsoft Office programs to create						
17111SEC03L	Communicative English	Recognize when to use each of the						
		of collaboration and critical	*	*	*		*	*
		Francophone cultures and the skills						
		As well as knowledge of						
		reading and writing.						
		language: speaking, listening,						
		Focus on all four modalities of the						
		viewpoints and attitudes		*	*	*		*
		details, and evaluate the speakers'						
1171SEC03	Skill Based Elective –III	Follow oral instructions, identify						
			*	*	*		*	*
		implement a research project/ study.						
		will be able to take up and						
		With the help of this course, students						

			Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.						
				*	*	*		*	*
IV	17110AEC41	Tamil-IV	Realize how the ancient people changed their life style according to the ages						
				*	*	*		*	*
			Learn how to change one's lifestyle according to the needs of the future	*		*	*	*	
			Obtaining More information about one's						
			culture and tradition;	*	*	*	*	*	*

		Encourage creative writing and						
		developing self-confidence.						
17132AEC41	Hindi-IV	Enables other state students to						
		continue their learning phase without						
		any disruptions.						
			*		*	*	*	
		Through this language						
		they can learn						
		spirituality.						
			*		*	*	*	
		Students can learn social						
		discrimination.D18.						
			*	*		*	*	*
117111AEC41	Advanced English-IV	Make oral presentations effectively						
		for academic purposes by using						
		appropriate discourse markers,						
		transitions and conjunctions.						
			*	*	4			44.

		Respond to spoken discourse in their						
		content courses and academic						
		presentations.						
				*	*	*		*
		Follow oral instructions, identify						
		details, and evaluate the speakers'						
		viewpoints and attitudes	*	*	*		*	*
17135AEC41	French-IV	Focus on all four modalities of the						
		language: speaking, listening,						
		reading and writing.						
		As well as knowledge of						
		Francophone cultures and the skills						
		of collaboration and critical	*	*		*	*	*
		Students can compare and contrast						
		cultural practices as they relate to						
		French and American culture.						
			*	*		*	*	*

1	17111AEC42	English-IV	Know about genius of Shakespeare,						
			Martin Luther King, Mahatma						
			Gandhi, and Mother Teresa.						
				*	*		*	*	*
			Describe Daffodils, beauty of						
			Byron's Maid, Painful account of						
			apple- pickers.						
				*		*	*	*	
			Understand the basic Grammar, and						
			Spoken English. Ability to write						
			composition, letter and vocabulary	*	*	*		*	*
1	17122SEC43	Visual Programming	Learners will be able to design web						
			applications using ASP.NET						
				*	*	*		*	*
			Learners will be able to use						
			ASP.NET controls in web						
			applications						
				*	*	*	*	*	*

17122SEC44L	Visual Programming	Analyze the basic structure of a C#						
	Lab	application and be able to document,						
		debug, compile, and run a simple						
		application.						
			*		*	*	*	
		Integrate and relate scientific						
		knowledge learned from classroom						
		with real life situations.						
			*	*		*	*	
		Use common statements to						
		implement flow control, looping,						
		and exception handling.						
			*	*	*		*	
		They get knowledge about the						
		integrated management of plant						
		diseases and pest.	*		*	*	*	
17113AEC45C	Allied Physics -II	Demonstrate a working knowledge						
		of the basic concepts and theories of						
		physics.						
			*	*		*	*	

		The Applied Physics program will						
		produce intellectually engaged						
		graduates accomplished in						
		application of fundamental physics						
		principles, and prepared for direct						
		entry into the workplace or						
		continuing professional						
		development.						
			*	*	*		*	
		Demonstrate a working knowledge						
		of the basic concepts and theories of						
		physics.						
		1 1 2 2 2 2		*	*	*		
	Allied Physics Lab - I	Integrate and relate scientific						
		knowledge learned from classroom						
17113AEC46CL		with real life situations.						
			*	*	*		*	

		Effectively use and critically evaluate current technical/scientific research literature, online information, as well as information related to scientific issues in the mass media.						
				*	*	*		*
17111SEC04L	Skill Based Elective-IV	Maintain life-long learning in the sciences and incorporate new information into the existing body of knowledge.	*	*	*		*	*
17111SEC04L	Communicative English Lab-IV	Help students to develop essential skills to influence and motivate others	*	*	*		*	*
			*		*	*	*	

		Nurture a creative and						
		entrepreneurial mindset						
			*	*	*	*	*	*
		Make students understand the						
		personal values and apply ethical						
		principles in professional	*		*	*	*	
171ENVTSTU	Environmental Studies	The student will be able to • Use						
		their logical thinking and analytical						
		abilities to solve Quantitative						
		aptitude questions from company						
		specific and other competitive tests.						
			*		*	*	*	
		Effort has been made to						
		accommodate fundamental,						
		mathematical aspects to instill						
		confidence among students.						
			*	*		*	*	*
		This course consists of practice						
		exercises for Quantitative or						
		Numerical and Verbal Ability.	*	*	*		*	*

		Prepare for Aptitude Tests for						
		Entrance Exams like GATE, CAT,						
		Bank PO, SAT, GMAT, GRE,						
		UPSC and RRB.						
V	Relational Database	Bank PO, SAT, GMAT, GRE, UPSC and RRB. Choose the required functionality at each layer for given application * * * Trace the flow of information from one node to another node in the network Use data communication vocabulary appropriately when discussing issues with other networking professionals. * * * Programming Compare and contrast various memory management schemes.		-				
17122SEC51	Management Systems	each layer for given application						
				*	*	*		
		Trace the flow of information from						
		one node to another node in the						
		network						
			* * * *					
		Bank PO, SAT, GMAT, GRE, UPSC and RRB. Choose the required functionality at each layer for given application * * * * Trace the flow of information from one node to another node in the network Use data communication vocabulary appropriately when discussing issues with other networking professionals. * * * * ** ** ** ** ** ** **						
		appropriately when discussing issues						
		with other networking professionals.						
			*	*		*	*	
17122SEC52	.NET Programming	Compare and contrast various						
		memory management schemes.						
			*	*		*	*	

		Design and Implement a prototype						1
		file systems.						
			*	*		*	*	
17122SEC53	Designing and supporting Computer Networks	Design Memory Interfacing circuits.						
	IVELWOTKS		*		*	*	*	
		Understand the implementation of						
		Buses						
			*	*	*		*	
		Design and implement programs on						
		8086 microprocessor.						
			*	*	*		*	
		Design and implement 8051						
		microcontroller based systems						
			*	*	*	*	*	
17122SEC54L	Oracle Lab	Develop testing and experimental						1
		procedures on Microprocessor and	*		*	*	*	

		Microcontroller analyze their operation under different cases. Prepare professional quality textual and computational results,						
		incorporating accepted data analysis and synthesis methods, simulation software, and word-processing tools.						
17122SEC55L	.NET Programming Lab	Use UNIX/Linux command line (shell) commands to navigate and manage the UNIX/Linux file system, customize the user shell environment,	*	*		*	*	*
		Install a Linux operating system with a custom partitioning scheme and log into and out of a UNIX/Linux	*	*	*	*	*	*

		computer system using graphical and command line environments.						
		Use file name globing and regular expressions to find files and text in the system.						
		To Manage user and group accounts and permissions.	*	*		*	*	*
17122DSC56A	Computer Organization	Actively participate in group	*	*	*		*	*
	and Architecture	discussions towards gainful employment						
		Enlist the common errors generally made by candidates in an interview		*	*	*		*
			*	*	*		*	*

117122BRC57	Participation in	To study how it helps to incorporate						
	Bounded Research	application portability, distributed						
		application component						
		interoperability and integration.						
			*		*	*	*	
		Understand Distributed systems						
		design and implementation						
			*	*	*	*	*	*
		Understand existing Distributed						
		Technologies						
			*		*	*	*	
		Understand Web services						
		architectures						
			*		*	*	*	
171SEC0	Skill Based Elective-V	To aim at preparing the students						
		technological competitive and make						
		them ready to	*	*		*	*	*

		self-upgrade with the higher technical skills.						
		Actively participate in group discussions towards gainful employment						
		Enlist the common errors generally made by candidates in an interview	*	*	*		*	*
17111SEC05L	Communicative English	Familiar with how to write a good		*	*	*		*
	Lab-V	introduction to an educationa; research study and the components that comprise such an introduction.						
			*	*	*		*	*
		To understood a general definition of research design	*	*		*	*	*

		Improves their ability to read and spell words through an analysis of structure of the English language summarization forms and determine data mining functionalities • Students learn to use the	*	*		*	*	*
vi 17122SEC61	Advanced Web Technology	natural farm resources produced within the farm Utilize the .NET environment to create Web Service-based applications and components.	*	*	*	*	*	*
		Demonstrate advanced knowledge of programming for network communications.	*	*	*		*	*

		Utilize DirectX libraries in the .NET						
		environment to implement 2D and						
		3D animations and game-related						
		graphic displays and audio.						
			*	*	*	*	*	
17122SEC62	Operating System	Apply security concepts to						
		databases.						
			*		*	*	*	
		Apply concurrency control and						
		recovery mechanisms for practical						
		problems.						
			*	*		*	*	
		Use the Relational model, ER						
		diagrams.						
			*	*	*		*	
		Design Databases for applications.						
			*		*	*	*	

17122SEC63L	Advanced Web	Use common statements to						
	Technology Lab	implement flow control, looping,						
		and exception handling.						
			*	*		*	*	*
		Contrast and compare major						
		elements of the .NET Framework						
		and explain how C# fits into the						
		.NET platform.						
			*	*	*		*	*
		Analyze the basic structure of a C#						
		application and be able to document,						
		debug, compile, and run a simple						
		application.						
				*	*	*		*
17122SEC64L	Operating System Lab	Unary and Binary table Operations.						
			*	*	*		*	*
		Handling online Transactions.						
		Technology Lab	Technology Lab implement flow control, looping, and exception handling. Contrast and compare major elements of the .NET Framework and explain how C# fits into the .NET platform. Analyze the basic structure of a C# application and be able to document, debug, compile, and run a simple application.	implement flow control, looping, and exception handling. * Contrast and compare major elements of the .NET Framework and explain how C# fits into the .NET platform. * Analyze the basic structure of a C# application and be able to document, debug, compile, and run a simple application. 171225EC64L Operating System Lab Unary and Binary table Operations. *	Technology Lab implement flow control, looping, and exception handling. * * Contrast and compare major elements of the .NET Framework and explain how C# fits into the .NET platform. * * Analyze the basic structure of a C# application and be able to document, debug, compile, and run a simple application. * * 17122SEC64L Operating System Lab Unary and Binary table Operations.	Technology Lab implement flow control, looping, and exception handling. * * Contrast and compare major elements of the .NET Framework and explain how C# fits into the .NET platform. * * * Analyze the basic structure of a C# application and be able to document, debug, compile, and run a simple application. * * * * 17122SEC64L Operating System Lab Unary and Binary table Operations.	implement flow control, looping, and exception handling. * * * Contrast and compare major elements of the .NET Framework and explain how C# fits into the .NET platform. * * * Analyze the basic structure of a C# application and be able to document, debug, compile, and run a simple application. * * * 17122SEC64L Operating System Lab Unary and Binary table Operations. * * *	Technology Lab implement flow control, looping, and exception handling. * * * * Contrast and compare major elements of the .NET Framework and explain how C# fits into the .NET platform. * * * * * Analyze the basic structure of a C# application and be able to document, debug, compile, and run a simple application. * * * * 17122SEC64L Operating System Lab Unary and Binary table Operations.

		Database Connectivity with frontend.						
17122DSC56B	Data Mining	Assess raw input data, and process it to provide suitable input for a range of data mining algorithms.	*	*	*		*	*
		Characterize and discriminate data summarization forms and determine data mining functionalities.	*	*	*		*	*
		Evaluate and select appropriate data-	*		*	*	*	
		mining algorithms and apply, and interpret and report the output appropriately.						
			*	*	*	*	*	*

17111SEC05L	Communicative English	Demonstrate fundamental						
	Lab-V	understanding of the history of						
		artificial intelligence(AI) and its						
		foundation.						
			*		*	*	*	
		Apply basic principles of aim						
		solutions that require problem						
		solving, inference, perception,						
		knowledge representation, and						
		learning.						
			*		*	*	*	
		Demonstrate knowledge of the						
		building blocks of AI as presented in						
		terms of intelligent agents.						
			*	*		*	*	*
		Formalize a given problem in the						
		language/framework of different AI						
		methods.						
			*	*	*		*	*

VI	VI 17122SEC61	Advanced Web	Identify the components required to						
		Technology	build different types of networks	*	*	*	*	*	
			Choose the required functionality at						
			each layer for given application	*	*	*	*	*	
	17122SEC62	Operating System	Identify solution for each						
			functionality at each layer	*	*	*		*	
			Trace the flow of information from						
			one node to another node in the						
			network	*	*	*		*	
			Design arithmetic and logic unit.						
				*	*		*	*	
	17122SEC63L	Advanced Web	Design and anlayse pipelined control						
		Technology Lab	units	*		*	*	*	
			Evaluate performance of memory						
			systems.	*	*	*		*	
	17122SEC64L	Operating System Lab	Design arithmetic and logic unit.						
				*	*		*	*	
			Design various Scheduling						
			algorithms.	*	*	*		*	
			Apply the principles of concurrency.	_		_	_		
	4742200005	Coft and Forting 1	Design deadlesh massantian and	*		*	*	*	
	17122DSC65A	Software Engineering	Design deadlock, prevention and						
			avoidance algorithms.	*	*		*	*	

		Compare and contrast various						
		memory management schemes.	*	*		*	*	
17122DSC65B	Object Oriented	Plan a vulnerability assessment and						
	Analysis and Design	penetration test for a network.						
			*	*	*		*	*
		Execute a penetration test using						
		standard hacking tools in an ethical						
		manner.						
				*	*	*		*
		Report on the strengths and						
		vulnerabilities of the tested network.						
			*		*	*	*	*
		Identify legal and ethical issues						
		related to vulnerability and						
		penetration testing.						
			*		*	*	*	*
17111GEC	Journalism	Shall empower themselves by						
		communication, professional and life						
		skills.	*	*	*	*	*	*

		shall have an understanding of						
		acquiring knowledge throughout life.	*	*	*		*	
17112GEC	Development of	To impart Information						
	Mathematical Skills	Communication Technologies						
		(ICTs) skills, including digital and						
		media literacy and competencies.	*	*	*		*	*
		To impart the basic knowledge of						
		Mass communication & Journalism						
		and related areas of studies.	*		*	*	*	*
17113GEC	Instrumentation	The students ableto Design and						
		develop GUI applications using						
		Abstract Windowing Toolkit (AWT)						
			*	*	*		*	*
		Programmer training by creating						
		standardized, reusable modular						
		components and by enabling the tier						
		to handle many aspects of						
		programming automatically.						
				*	*	*		

17114GEC	Food and Adulteration	Swing and Event Handling						
			*	*	*	*	*	*
		The students ableto Design and						
		develop GUI applications using						
		Abstract Windowing Toolkit (AWT)						
			*	*	*	*	*	*
		To prepare socially responsible						
		media academicians, researchers,						
		professionals with global vision	*		*	*	*	
17117GEC	Mushroom Technology	To inculcate professional ethics,						
		values of Indian and global culture.	*	*		*	*	*
		Shall acquire the understanding of						
		importance of cooperation and						
		teamwor	*	*	*		*	*
		To demonstrate an understanding of						
		the history of media and role of						
		professionals in Journalism		*	*	*		*
		The knowledge gained from the						
		course should act as a gateway and	*	*	*		*	*

		navigator to the various branches of						
		mass						
17161GEC	Indirect Tax	Produce students with the thorough						
		knowledge in the need for editing		*	*	*		*
		To attain a theoretical framework of						
		media and also to contextualize the						
		media theories.	*	*	*		*	*
191SEC06	Skill Based Elective –VI	Realize how the ancient people						
		changed their life style according to						
		the ages						
			*	*	*		*	*
		Obtaining More information about						
		one's culture and tradition;						
			*		*	*	*	
19111SEC06L	Communicative English	Aiming at enriching human						
	Lab-VI	excellence;						
			*	*	*	*	*	*

		Select and apply general rules correctly to solve problems						
		including those in real-life contexts.						
		Write and understand basic proofs.						
			*		*	*	*	
		Develop and maintain problem-						
		solving skills.						
		Use mathematical ideas to model	*		*	*	*	
		real-world problems.						
			*	*		*	*	*
19122EXACT	Extension Activities	Measurement of R,L,C,Voltage,						
		Current, Power factor, Power,						
		Energy						
			*	*	*		*	*
		Ability to balance Bridges to find						
		unknown values.						
				*	*	*		*

		Ability to use Digital voltmeters						
			*	*	*		*	*
		Ability to measure strain,						
		displacement, Velocity, Angular						
		Velocity, temperature, Pressure,						
		Vacuum, and Flow.						
			*	*		*	*	*
	Project Work	Understand, identify and analyze a						
		problem related to food industry and						
		ability to find an appropriate solution						
		for the same.						
40422DDW67								
19122PRW67			*	*		*	*	*
		Design, implement and evaluate a						
		research based project to meet						
		demands of the society.						
			*	*		*	*	*

		Use appropriate techniques, skills, and modern tools in the food industry and in academic profession.						
		Understanding of professional, ethical, legal, security and social issues and responsibilities for entrepreneurship skills.						
		Use appropriate techniques, skills, and modern tools in the food industry and in academic profession.	*		*	*	*	
19122PEE	Program Exit Examination	Understand the factors affecting the need to find sustainable practices for production of food, feed and fiber	*	*	*		*	*
		crops and how to implement them.	*	*	*		*	*

	Competent in basic forest						
	management principles and						
	evaluation of forest stands for health,						
	wildlife habitat and lumber use.						
		*	*	*	*	*	*



SCHOOL OF ARTS AND SCIENCE DEPARTMENT OF COMPUTER SCIENCE MSC CS

	PROGRAMME OUTCOMES
PO1	To communicate computer science concepts, designs, and solutions effectively and professionally;
PO2	To apply knowledge of computing to produce effective designs and solutions for specific problems;
PO3	To identify, analyses, and synthesize scholarly literature relating to the field of computer science;
PO4	To use software development tools, software systems, and modern computing platforms.
PO5	To an understanding of professional, ethical, legal, security and social issues and responsibilities
PO6	To do capable of evaluating personal and professional choices in terms of codes of ethics and ethical theories and understanding the impact of their decisions on themselves, their professions, and on society
PO7	To apply design and development principles in the construction of software systems of varying complexity.
	PROGRAM SPECIFIC OUTCOME
PSO1	➤ Demonstrate understanding of the principles and working of the hardware and software aspects of computer systems.

PSO2	➤ Understanding the structure and development methodologies of software
	systems. Possess professional skills and knowledge of software design
	process. Familiarity and practical competence with a broad range of
	Programming language and open source platforms.

Sem	Course code	Course title	CO's						
				PO1	PO2	PO3	PO4	PO5	PO6
I	17220SEC11	J2EE Programming	Understand the format and use of objects.						
				*		*	*	*	
			Understand basic input/output methods and						
			their use.						
				*	*		*	*	*
			Understand development of JAVA applets vs.						
			JAVA applications.						
				*	*	*		*	*
	17220SEC12	RDBMS	Design a database using ER diagrams and						
			map ER into Relations and normalize the						
			reltions.						
					*	*	*		*
			Acquire the knowledge of query evaluation to						
			monitor the performance of the DBMS.						
				*	*	*		*	*

		Identify what students will know and be able to do if they master the material.						
		Identify what students will know and be able		*	*	*		
		to do if they master the material.						
			*	*	*		*	
17220SEC13	WAP & XML	Students develop PERT and CPM networks and finding the shortest path	*	*	*		*	
		Understand the concept of sequencing						
		problems and game theory	*		*	*	*	
		Students gets the knowledge about inventory						
		theory	*	*	*	*	*	
		Extend knowledge to Non Linear						
		Programming Problems	*		*	*	*	
17212SEC14	Discrete Mathematics	The common 2-year sequence works well for many disciplines.						
			*		*	*	*	

			Topics can be introduced ""just-in-time"" for many disciplines.						
				*	*		*	*	*
			Ability study of mathematical structures that are countable or otherwise distinct and						
			separable.						
				*	*	*		*	*
			Examples of structures that are discrete are combinations, graphs, and logical statements.						
			Discrete structures can be finite or infinite.						
					*	*	*		*
1722	20SEC15L	J2EE programming Lab	Thestudents ableto Design and develop GUI applications using Abstract Windowing						
			Toolkit (AWT)						
				*	*	*		*	*
			Programmer training by creating standardized, reusable modular components and by enabling	*	*		*	*	*

		the tier to handle many aspects of						
		programming automatically.						
		Swing and Event Handling						
			*	*		*	*	*
		Web applications and Designing						
			*	*		*	*	*
		Enterprise based applications for business						
		logic						
			*		*	*	*	
17220SEC16L	RDBMS Lab	Can Declare and enforce integrity constraints						
		on a database using a state-of-the-art.						
		D COL 1 I	*	*	*		*	*
		Programming PL/SQL including stored						
		Procedures.						
			*	*	*		*	*

17220RLC17	Research Led							
	Seminar	The exam is supposed to measure the learning						
		outputs of the program as a whole not a						
		individual course.						
			*	*	*		*	*
		The primary purpose of the exit exams is to						
		assess students' educational achievement in						
		the courses in their major area of program						
		study.						
ll .	Python	To implement the python programming	*		*	*	*	
	Programming							
17220SEC21		features in practical applications						
			*	*		*	*	*
		To implement Python programs with						
		conditionals and loops						
			*	*	*		*	*
		Represent compound data using Python lists,						
		tuples, dictionaries, turtles, Files and modules		*	*	*		*
		Use functions for structuring Python						
		programs.	*	*	*		*	*

17220SEC22	Cryptography & Network Security	Develop basic skills of secure network architecture and explain the theory behind the security of different cryptographic algorithms.						
		Describe common network vulnerabilities and attacks, defense mechanisms against network attacks, and cryptographic protection mechanisms.		*	*	*		*
17220SEC23	Software Engineering	Graduates of the program are expected to demonstrate the problem	*	*	*		*	*
		An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	*	*	*	*	*	-

			To Explain methods of capturing, specifying, visualizing and analyzing software						
			requirements.						
				*	*	*	*	*	*
II	17220SEC24L	Python	Able to determine the methods to create and						
		Programming Lab	manipulate Python programs.						
				*		*	*	*	
			By utilizing the data structures like lists,						
			dictionaries, tupelos and sets.						
				*		*	*	*	
			Identify the commonly used operations						
			involving file systems and regular expressions						
				*	*		*	*	*
			Duck typing and huge standard library						
				*	*	*		*	*
			Presence of third-party modules.						
					*	*	*		*

17220SEC25L	Core Practical	To introduce Basic Unix general purpose						
	IV : UNIX Lab	Commands						
			*	*	*		*	*
		To learn C programming in Unix editor						
		environment.	*	*		*	*	*
		To learn shell script and sed concepts.	*	*		*	*	*
17220DSC26A	Artificial Intelligence	To understand the main components of an OS						
	and Expert	& their functions.						
	System		*	*	*	*	*	*
		To study the process management and scheduling.	*	*	*	*	*	*
		To understand various issues in Inter Process						
		Communication (IPC) and the role of OS in						
		IPC.	*	*	*	*	*	*
17220DSC26C	Embedded	Develop open source programming products						
	Systems and Real time	which are normally free to download,						
	operating	although it does incur running costs such as						
	System	storage and computing power.	*	*	*		*	*

		Even those rare paid-for open source products						
		still tend to be far cheaper than closed source						
		alternatives	*	*	*		*	*
		Understand process of executing a PHP-based						
		script on a webserver.	*	*		*	*	*
		Be able to develop a form containing several						
		fields and be able to process the data						
		provided on the form by a user in a PHP-						
		based script.	*		*	*	*	
		Understand basic PHP syntax for variable use,						
		and standard language constructs, such as						
		conditionals and loops	*	*	*		*	*
17220RMC27	Research	These students able to develop efficient open						
	Methodology	source programmers for rapidly developing						
		network world						
			*	*		*	*	*
17220BRC28		The students are able to develop programs	T	Ť		*	T	*
		using C# based on object oriented concepts	*	*	*		44.	al-
		J I	*	*	ጥ		*	*

	Participation in Bounded Research	Write the ROBUST, EXTENSIBLE and EFFICIENT programs by using c# code and ASP.Net	*		*	*	*	
		Create dynamic web pages for further development.	*	*		*	*	*
		It provides re-usability.						
			*	*		*	*	*
III 17220SEC31	Data Mining and Warehousing	Identify, formulate, review research literature, and analyze complex engineering problems						
1722051031	vuicilousing	related to Computer Science and Engineering and reaching substantiated conclusions using						
		first principles of mathematics,	*	*	*		*	*
		Design/development of solutions: Design solutions for complex engineering problems						
		related to Computer Science and Engineering						
		and design system components or processes that meet the specified needs with appropriate						
		consideration for the public health and safety,		*	*	*		*

		and the cultural, societal, and environmental considerations						
17220SEC32	Open Source	Ability to estimate if a system takes						
	programming	distributed system characteristic into account						
		in a reasonable way.	*	*	*	*	*	
		Knowing the basic structures (e.g. client-						
		server) and knowing the existing middleware						
		frameworks.	*		*	*	*	
		Ability to estimate framework suitability for						
		different applications.	*		*	*	*	
		Ability to implement a simple distributed						
		software laboratory work with socket and						
		RMI interfaces.	*	*		*	*	
17220SEC33	.Net Programming	It provides re-usability.	*	*	*		*	
		Create web-based distributed applications						
		using ASP.NET, SQL Server and ADO.NET						
		using ASI TVEI, SQL SOLVEI and ADOLIVEI						

17220SEC34L	.Net	Develop menu based program for text						
	Programming Lab	manipulation.	*	*	*		*	
		Utilize the .NET environment to create Web						
		Service-based applications and components.	*	*		*	*	
		Less Coding and Increased Reuse of Code:						
		This framework works on object-oriented						
		programming which eliminates unnecessary						
		codes and involves less coding for the						
		developers.	*	*		*	*	
17220SEC35L	Open Source programming Lab	Securing confidential information.						
		Protection from malicious attacks on your	*	*		*	*	+
		network.	*		*	*	*	
		Develop an understanding of security policies.						
17220DSC36A	Multimedia		*	*	*		*	_
1/220D3C30A	and it's applications	Deletion and/or guaranteeing malicious elements within a preexisting network.	*	*	*		*	
		Prevents users from unauthorized access to						\dagger
		the network.	*	*			*	

		Upon completion of the course, the student should be able to	*		*	*	*	
		Analyze various protocols for It	*	*		*	*	
19220DSC35B	Wireless Communicati on Network	Develop web services to access/control It devices.	*	*	*		*	
		Design a portable It using Raspberry Pi	*		*	*	*	
		Deploy an It application and connect to the cloud.	*	*		*	*	
		Analyze applications of It in real time scenario	*	*	*		*	
17220DSC36B	Compiler Design	Upon Completion of the course, the students should be able to Business techniques		*	*	*		

		Analyze various mobile marketing strategies.	*	*	*		*	
17220SRC37	Societal	Design solutions for complex engineering	*	*	*		*	
	project (Mini	problems and design system components or						
	Project)	processes that meet the specified needs with						
		appropriate consideration for the public health						
		and safety, and the cultural, societal, and						
		environmental considerations.		*	*	*		
		Analyze various mobile marketing strategies	*	*	*		*	
		To exhibit skills in inventions, innovations						
		and entrepreneurship to meet societal needs						
		with the current trends in technology.	*	*	*		*	
17220INT38	Internship	Apply the knowledge of mathematics,						
		science, engineering fundamentals, and an						
		engineering specialization to the solution of						
		complex engineering problems.	*		*	*	*	
IV	Software		*		*	*	*	
17220SEC41	Testing	To have a lifelong learning attitude for a						
_,		successful professional career in	*	*		*	*	

		multidisciplinary fields of Engineering and						
		Medicine.						
		To exhibit skills in inventions, innovations						
		and entrepreneurship to meet societal needs						
		with the current trends in technology. PEO III						
		To have a lifelong learning attitude	*	*	*		*	*
17220PRW42	Project work	Can be able to develop plans with relevant						
		people to achieve the project's goals.	*	*	*	*	*	*
		Break work down into tasks and determine						
		handover procedures.	*		*	*	*	





	PROGRAMME OUTCOMES
PO1	Apply the different data structures for implementing solutions to practical problems
PO2	Trace the flow of information from one node to another node in the network
PO3	Understand the format and use of objects
PO4	Able to Measure the product and process performance using various metrics
PO5	Design Secure applications
PO6	Apply the various optimization techniques
	PROGRAM SPECIFIC OUTCOME
PSO1	Ability to pursue careers in IT industry/ consultancy/ research and development, teaching and allied areas related to computer science.
PSO2	Comprehend, explore and build up computer programs in the areas allied to Algorithms, System Software, Multimedia, Web Design and Big Data Analytics for efficient design of computer-based systems of varying complexity.
PSO3	Understand, analyze and develop computer programs in the areas related to algorithms, Process and solutions for specific application development using appropriate data modeling concepts.
PSO4	Apply standard Software Engineering practices and strategies in software project development using open-source programming environment to deliver a quality product for business success.
PSO5	Be acquainted with the contemporary issues, latest trends in technological development and thereby innovate new ideas and solutions to existing problems.
	PROGRAM EDUCATIONAL OBJECTIVES (PEOs)
PEO1	To understand the different methods of organizing large amounts of data.
PEO2	To introduce GUI programming using Microsoft Foundation Classes
PEO3	To learn the fundamental concept of Web Design.
PEO4	To develop network programs in java.

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PEO5	Provides idea on VLAN, VTP, STP and Inter-VLAN Routing.
PEO6	To know the network security tools and system level security used

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em	Course code	Course title	CO's						
				PO1	PO2	PO3	PO4	PO5	PO6
I	17222SEC11	C Programming and Data structure	Understand the format and use of objects.						
				*		*	*	*	

		Understand basic input/output methods and their use.						
			*		*	*	*	
		Understand development of JAVA applets vs.						
		JAVA applications.						
			*	*	*		*	*
17222SEC12	Data	Design a database using ER diagrams and						
	communication network	map ER into Relations and normalize the						
	Hetwork	relations.						
			*	*	*	*	*	*
		Acquire the knowledge of query evaluation to						
		monitor the performance of the DBMS.						
				*	*	*		*
		Identify what students will know and be able						
		to do if they master the material.						
			*	*	*		*	*
		Identify what students will know and be able						
		to do if they master the material.						
				*	*	*		*

17222SEC13	Computer Architecture	The common 2-year sequence works well for						
		many disciplines.						
			*		*	*	*	
		Topics can be introduced ""just-in-time"" for						
		many disciplines.						
				*	*	*		
		Ability study of mathematical structures that						
		are countable or otherwise distinct and						
		separable.						
			*		*	*	*	
		Examples of structures that are discrete are						
		combinations, graphs, and logical statements.						
		Discrete structures can be finite or infinite.						

17222SEC13	Programming in	The students ableto Design and develop GUI						
	VB	applications using Abstract Windowing						
		Toolkit (AWT)						
		1001111						
			*	*		*	*	*
		Programmer training by creating standardized,					-	
		reusable modular components and by enabling						
		the tier to handle many aspects of						
		programming automatically.						
			*	*	*		*	*
		Swing and Event Handling						
			*	*		*	*	*
		Web applications and Designing						
			*	*	*	*	*	*
		Enterprise based applications for business						
		logic						
			*	*	*	*	*	*

	Numerical and Statistical Methods	Can Declare and enforce integrity constraints on a database using a state-of-the-art.						
17212AEC15			*	*	*		*	*
1,212,12013		Programming PL/SQL including stored						
		Procedures.						
			*	*	*		*	*
17222SEC16L	C programming	Analyze processor Performance improvement						
	and Data structure Lab	using instruction level parallelism.						
			*	*		*	*	*
		Learn the function of each element of a						
		memory hierarchy.						
			*		*	*	*	
		Articulate design issues in the development of						
		processor or other components that satisfy						
		design requirements and objectives.						
			*	*	*		*	*
		Analyze processor Performance improvement						
		using instruction level parallelism	*	*		*	*	*

17222SEC17L	Programming in	Analyze processor Performance improvement						
	VB Lab	using instruction level parallelism.						
			*	*	*		*	
		Study various data transfer techniques in						
		digital computer.						
		Develop basic skills of secure network	*		*	*	*	
		architecture and explain the theory						
		behind the security of different cryptographic						
		algorithms.						
			*	*		*	*	
		Describe common network vulnerabilities and	<u> </u>			•	·	
		attacks, defense mechanisms against network						
		attacks, and cryptographic protection						
		mechanisms.						
II	OOPs with C++	To implement the python programming	*	*		*	*	
17222SEC21	JOI 3 WILLI CFT	features in practical applications						
		reactives in practical applications						
			*	*	*		*	

		To implement Python programs with						
		conditionals and loops						
				*	*	*		*
		Represent compound data using Python lists,						
		tuples, dictionaries, turtles, Files and modules	*		*	*	*	
		Use functions for structuring Python						
		programs.	*		*	*	*	
	Operating system	Develop basic skills of secure network						
		architecture and explain the theory						
		behind the security of different cryptographic						
		algorithms.						
17222SEC22		Describe common network vulnerabilities and	*	*	*	*	*	*
		attacks, defense mechanisms against network						
		attacks, and cryptographic protection						
		mechanisms.						
			*		*	*	*	
17222SEC23	Web Designing	Graduates of the program are expected to						
		demonstrate the problem						
			*		*	*	*	

		An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	*	*	*		*	*
		To Explain methods of capturing, specifying, visualizing and analyzing software requirements.	*	*	*	*	*	*
17222SEC24	Database Management system	Able to determine the methods to create and manipulate Python programs. By utilizing the data structures like lists,		*	*	*		*
		dictionaries, tupelos and sets.	*	*	*		*	*

		Identify the commonly used operations						
		involving file systems and regular expressions						
				*	*	*		*
		Duck typing and huge standard library						
			*		*	*	*	
		Presence of third-party modules.						
				*	*	*		*
17212AEC25	Optimization Technique.	To introduce Basic Unix general purpose Commands						
			*		*	*	*	
		To learn C programming in Unix editor environment.	*	*	*		*	*
			*	*	*		*	*
		To learn shell script and sed concepts.	*	*		*	*	*
17222SEC26L	OOPs with C++ Lab	To impart basic proficiency in representing						
	Lab	difficult real life problems in a state space						
		representation so as to solve them using AI						
		techniques like searching and game playing	*	*	*		*	*

		To introduce advanced topics of AI such as						
		planning, Bayes networks,	*	*		*	*	
		Analyze and formalize the problem as a state						
		space, graph, design heuristics and select						
		amongst different search or game based						
		techniques to solve them.	*	*	*	*	*	
		Develop intelligent algorithms for constraint						
		satisfaction problems and also design						
		intelligent systems for Game Playing						
			*	*	*	*	*	
	Web Designing Lab							
	Lab	To understand the main components of an OS						
		& their functions.	*	*	*		*	
17222SEC27L		To study the process management and						
1/2225EC2/L		scheduling.	*	*	*		*	
		To understand various issues in Inter Process						
		Communication (IPC) and the role of OS in						
		IPC.	*	*		*	*	
III	J2EE Programming	Develop open source programming products						
17222SEC31		which are normally free to download,						

		although it does incur running costs such as storage and computing power.						
		Even those rare paid-for open source products						
		still tend to be far cheaper than closed source						
		alternatives	*	*	*		*	*
		Understand process of executing a PHP-based						
		script on a webserver.	*	*		*	*	*
		Be able to develop a form containing several						
		fields and be able to process the data						
		provided on the form by a user in a PHP-						
		based script.	*	*	*		*	*
		Understand basic PHP syntax for variable use,						
		and standard language constructs, such as						
		conditionals and loops	*		*	*	*	
	Core XII: Software	Ability to estimate if a system takes						
	Engineering	distributed system characteristic into account						
472225522		in a reasonable way.	*	*		*	*	*
17222SEC32		Knowing the basic structures (e.g. client-						
		server) and knowing the existing middleware						
		frameworks.	*	*		*	*	*

17222SEC33	Relational Data Base Management System.	To Demonstrate advanced knowledge of networking understands the key protocols which support the Internet. Be familiar with several common programming interfaces for network communication.	*	*	*	*	*	*
17222SEC34	Routing and Switching in LAN	These students able to develop efficient open source programmers for rapidly developing network world	*		*	*	*	
17212AEC35	Discrete Mathematics	The students are able to develop programs using C# based on object oriented concepts Write the ROBUST, EXTENSIBLE and EFFICIENT programs by using c# code and ASP.Net	*	*	*	*	*	*
		Create dynamic web pages for further development. It provides re-usability.	*		*	*	*	

	17222SEC36L	J2EE Programming	Ability to estimate if a system takes						
		Lab	distributed system characteristic into account						
			in a reasonable way.	*	*	*		*	*
			Knowing the basic structures (e.g. client-						
			server) and knowing the existing middleware						
			frameworks.	*	*	*	*	*	*
			Ability to estimate framework suitability for						
			different applications.		*	*	*		*
			Ability to implement a simple distributed						
			software laboratory work with socket and						
			RMI interfaces.	*	*	*		*	*
1722	17222CRS	RDBMS Lab							
2CRS			These students able to understand and develop						
			wireless communication and its infrastructure.						
			Understand design considerations for wireless						
			communication networks		*	*	*		*
				*		*	*	*	
			Understand the fundamentals of wireless						
			networks.		*	*	*		*
			Learn and analyze the different wireless						
			technologies.	*		*	*	*	

		These students able to understand and develop						
		wireless communication and its infrastructure.	*	*	*		*	
17222CRS	Research Led							
	Seminar	Explain the HCI implications for designing						
		multimedia/ ecommerce/ e-learning Websites.	*	*		*	*	
		Analyze processor Performance improvement						
		using instruction level parallelism.	*	*	*		*	
		Learn the function of each element of a						
		memory hierarchy.	*	*		*	*	
172SFSK01L		Apply data mining techniques and methods to						
		large data sets.						
			*	*	*	*	*	
		Use data mining tools						
			*	*	*	*	*	
		Compare and contrast the various classifiers.						
	Soft Skill I		*	*	*		*	

	Core XVI :Python Programming be all	Study various data transfer techniques in digital computer. Articulate design issues in the development of processor or other components that satisfy design requirements and objectives.	*	*	*		*	*
IV 17222SEC41		Develop basic skills of secure network architecture and explain the theory behind the security of different cryptographic algorithms. Describe common network vulnerabilities and attacks, defense mechanisms against network attacks, and cryptographic protection mechanisms.	*	*	*	*	*	*
17222SEC42	Core XVII :Cryptography Network security	Compare various Cryptographic Techniques Design Secure applications	*	*	*	*	*	*

		Attain the capability to represent various real						
		life problem domains using logic based						
		techniques and use this to perform inference						
		or planning.	*		*	*	*	
		Formulate and solve problems with uncertain						
		information using Bayesian approaches.	*	*		*	*	
		To understand the main components of an OS						
	Core XVIII :Open	& their functions.	*	*		*	*	
17222SEC43	Source programming							
		To study the process management and						
		scheduling.	*	*	*		*	
		To understand and implement Automated						
		software testing techniques for Web testing,						
	Core XIX: Web	Performance testing, and GUI testing.		*	*	*		
17222SEC44	Service	To develop, implement, and demonstrate the						
		learning through a project that meet stated						
17222SEC45L Python		specifications.	*		*	*	*	
	Core Practical VII:	Design effective dialog for HCI.	*		*	*	*	
		Design effective HCI for individuals and						
	Programming Lab	persons with disabilities.	*	*	*	*	*	

		Assess the importance of user feedback.	*		*	*	*	
		Explain the HCI implications for designing						
		multimedia/ ecommerce/ e-learning Websites.	*		*	*	*	
17222SEC46L		An understanding of multimedia development						
		in the business world, and how successful						
		development is contingent on detailed client						
		specifications, user and audience research,						
		and design decisions taken during the						
		planning phase.						
		An understanding of the content of learning						
		materials available from e-skills UK and how						
	Carro Duration	these can be used with learners to develop						
	Core Practical VIII: Open Source	multimedia products	*	*	*	*	*	*
	programming Lab	To work with learners to plan and create a						
		multimedia product that includes animation,						
		audio and video		*	*	*		*
		An understanding of multimedia development						
		in the business world, and how successful						
		development is contingent on detailed client						
		specifications, user and audience research,						
		and design decisions taken during the						
		planning phase.	*	*	*		*	*

	17222DSC47A	Mobile Computing							
			In Business it helps streamline processes and						
			improve efficiency in terms of organization.		*	*	*		*
			It facilitates communication between the						
			system.	*		*	*	*	
	17222DSC47B	Knowledge based	Can be able to develop plans with relevant						
		decision support system	people to achieve the project's goals.		*	*	*		*
			Break work down into tasks and determine						
			handover procedures.	*		*	*	*	
			Identify links and dependencies, and schedule						
			to achieve deliverablehandoverE	*	*	*		*	*
		Research	The exam is supposed to measure the learning						
		Methodology	outputs of the program as a whole not a						
			individual course.	*	*		*	*	*
	17222CSRM		The primary purpose of the exit exams is to						
			assess students' educational achievement in						
			the courses in their major area of program						
			study.	*	*	*		*	*

		The exam is supposed to measures the						
		learning outputs of the program as a whole not						
		the individual courses.	*	*		*	*	*
	Participation in	An understanding of the content of learning						
	Bounded Research	materials available from e-skills UK and how						
		these can be used with learners to develop						
		multimedia products	*	*	*	*	*	*
		To work with learners to plan and create a						
		multimedia product that includes animation,						
17222BRC49		audio and video	*	*	*	*	*	*
		An understanding of multimedia development						
		in the business world, and how successful						
		development is contingent on detailed client						
		specifications, user and audience research,						
		and design decisions taken during the						
		planning phase.	*	*	*		*	*
		Leadership skills are essential for anyone who						
		wishes to take on more responsibility and						
		influence in their organization.	*	*	*		*	*
172SFSK02L		To work with learners to plan and create a						
		multimedia product that includes animation,						
	Soft Skill II	audio and video	*	*		*	*	*

V		mining and a warehousing in	Students who complete this course will be able to understand and comprehend the basics in research methodology and applying them in research/ project work.						
	17222SEC51			*		*	*	*	
			This course will help them to select an						
			appropriate research design.						
		Core XXI: Grid and	The course will also enable them to collect the	*	*	*		*	*
		Cloud Computing.	data, edit it properly and analyses it						
			accordingly. Thus, it will facilitate students'						
			prosperity in higher education.	*	*		*	*	*
	17222SEC52		Students who complete this course will be						
	1/22235032		able to understand and comprehend the basics						
			in research methodology and applying them in						
			research/ project work.						
				*	*	*		*	*
		Core XXII: .NET	Design C Programs for problems.						
	17222SEC53	Programming							
				*		*	*	*	

			Write and execute C programs for simple						
			applications						
				*	*		*	*	*
		Core XXIII: Object	Apply the different data structures for						
172	222SEC54	Oriented System Design	implementing solutions to practical problems.						
				*	*		*	*	*
		Core Practical IX: .NET Programming Lab.	Design C Programs for problems.						
173	222SEC55L	Ed.		*	*	*		*	*
			Write and execute C programs for simple						
			applications		*	*	*		*
172	222DSC56B	WAP and XML	Identify the components required to build						
			different types of networks						
				*		*	*	*	
			Choose the required functionality at each						
			layer for given application						
				*		*	*	*	
172	222DSC56C	Wireless	Identify solution for each functionality at each						
		communication Network	layer						
				*	*	*	*	*	*

			Design arithmetic and logic unit.						
				*		*	*	*	
	17222SRC57	Societal project	Design and analyze pipelined control units						
				*		*	*	*	
		Internship	Evaluate performance of memory systems.						
	17222INT58			*	*	*		*	*
			Understand parallel processing architectures.	*	*	*	*	*	*
	172SFSK03L		Design, create, build, and debug Visual Basic applications.						
		Soft Skill III			*	*	*		*
VI		Core XXIV: Human Computer Interaction.	Explore Visual Basic's Integrated Development Environment (IDE).						
	17222SEC61		Create and and two dimensional arrays for	*	*	*		*	*
			Create one and two dimensional arrays for sorting, calculating, and displaying of data.		*	*	*		*
		Project work	Able to understand and design the solution to						
	17222PRW62		a problem using object-oriented programming						
			concepts.	*		*	*	*	

Able to use proper class protection				
mechanism to provide security.				
	*	*	*	*





SCHOOL OF ARTS AND SCIENCE DEPARTMENT OF COMPUTER SCIENCE M.Phil

Sem	Course code	Course title	CO's						
				PO1	PO2	PO3	PO4	PO5	PO6
I	173RMGC11	Research Methodology	Systematic approach to hierarchical network that support voice, video, and data.	*		*	*	*	
			Idea on VLAN, VTP, STP and Inter-VLAN Routing.	*		*	*	*	
			Components of a wireless LAN and its operations.	*	*	*		*	*
	173CSC12	Advanced Technologies in Computer Science	You will also learn how to configure the router and the switch for remote access.	*	*	*	*	*	*

		small business router in order to provide network connectivity in a small LAN environment.		*	*	*		*
	Students completing this course will be able to express a logic sentence in terms of predicates, quantifiers, and logical connectives.	*	*	*		*	*	
		Students completing this course will be able to apply the rules of inference and methods of proof including direct and indirect proof forms, proof by contradiction, and mathematical induction.		*	*	*		*
173CSC13_	Advanced Networking	Systematic approach to hierarchical network that support voice, video, and data.	*		*	*	*	
	Big Data	Idea on VLAN, VTP, STP and Inter-VLAN Routing.		*	*	*		*
		Components of a wireless LAN and its operations.	*		*	*	*	
		You will also learn how to configure the router and the switch for remote access.	*	*	*		*	*
173RPE14	Research and Publication Ethic	Small business router in order to provide network connectivity in a small LAN environment.	*	*	-	*	*	*

		Students completing this course will be able to express a logic sentence in terms of predicates, quantifiers, and logical connectives.	*	*	*		*	*
		Students completing this course will be able to apply the rules of inference and methods of proof including direct and indirect proof forms, proof by contradiction, and mathematical induction.	*	*		*	*	*
		Systematic approach to hierarchical network that support voice, video, and data.	*	*	*	*	*	*
		Idea on VLAN, VTP, STP and Inter-VLAN Routing.	*	*	*	*	*	*
173CSD21	Dissertation - (Topic selected should be relevant to the topic of the Indepth	Students completing this course will be able to apply the rules of inference and methods of proof including direct and indirect proof forms, proof by contradiction, and mathematical induction.	*	*	*		*	*
	paper	Systematic approach to hierarchical network that support voice, video, and data.	*	*	*		*	*