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

BSC CS

Sem	Course code	Course title	CO's	PO1	PO2	PO3	PO4	PO5	PO6
I	19110AEC11	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.	*	*	*		*	*
	19132AEC11	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	*	*	*		*	*

Code	Course	Outcome	1	2	3	4	5	6
19111AEC1	**Advanced English-I**	Academic skills in preparation for tertiary study.	*	*	*		*	*
		Presentation and participation skills.	*		*	*	*	
		Learning strategies and research skills	*	*	*	*	*	*
		Academic essay and report writing skills	*		*	*	*	
19135AEC11	**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.	*	*	*		*	*
19111AEC12	**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	*	*	*		*	*

19122SEC13	Programming in C with C++							
		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	*	*		*	*	*
19122SEC13	Programming in C with C++	To understand the principles of Python and acquire 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.	*	*	*		*	*
19112AEC15B	CLASSICAL ALGIBRA	Understand the theory of, and be able to solve problems in Caylee Hamilton Theorem, and finding the Eigen values & Eigen vectors	*	*	*		*	*

			Col1	Col2	Col3	Col4	Col5	Col6
		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 related to Binomial,	*		*	*	*	
		be able to calculate summation related to Binomial, Exponential and Logarithmic series	*	*		*	*	*
	Numerical And Statistical Methods	Apply numerical methods to find the solution of algebraic equations using different method and numerical	*	*	*		*	*
		Apply various interpolation methods and finite difference concepts.	*		*	*	*	
		Work out numerical differentiation and integration whenever and wherever routine methods are not applicable.	*	*		*	*	*

Course Code	Course Name	Course Outcome						
		Solve a differential equation using an appropriate numerical method	*	*	*		*	*
19122SEC14L	**Programming in C with C++ Lab**	To implement the python programming 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	**Packages Lab-I**	To make the students understand about the Democratic Rule and Parliamentarian administration.	*	*	*		*	*
		To appreciate the salient features of the Indian Constitution	*		*	*	*	
19160SEC01B	**Soft Skill-I**	Learn the functions of union and State Governments	*	*	*	*	*	*

	Course Code	Course Name	Course Outcome						
			Learn the power and functions of the Judiciary	*		*	*	*	
	19111SEC01L	Communicative English Lab-I	Know about universal human values 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.	*	*	*		*	*
	191INDCONS	Indian Constitution	Democratic values and citizenship Training are gained.		*	*	*		*

	Code	Subject	Course Outcome						
			Awareness on Fundamental Rights are established	*	*	*		*	*
			Learn the functions of union and State Governments	*	*		*	*	*
			Learn the power and functions of the Judiciary	*	*		*	*	*
II	19110AEC2	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's culture and tradition	*	*	*		*	*

Code	Course	Outcome						
		Encourage creative writing and developing self-confidence.	*	*	*		*	*
		Aiming at enriching human excellence	*	*	*	*	*	*
19132AEC21	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	*	*	*		*	*
19111AEC21	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		*	*	*		*
19135AEC21	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	*	*	*		*	*

Code	Title	Course Outcome						
19111AEC22	**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.	*		*	*	*	
19120SEC23	**Internet and Java Programming**	To understand the core principles of the Java Language	*	*		*	*	*
		To study about Graphics programming using java Language	*	*	*		*	*

Course Code	Course	Course Outcome						
19112AEC25B	**Discrete Mathematics**	Students completing this course will be able to express a logic sentence in terms of predicates, quantifiers, and logical connectives		*	*	*		*
19112AEC26B	**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.	*	*		*	*	*

19120SEC24L	Internet and Java Programming Lab	Implement the concept of data structures through ADT including List, Stack, and 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)	*	*	*	*	*	*

Code	Course	Description						
19120RLC27	**Research Led Seminar**	Communication skills are and what they can do to improve their abilities. Understand role of communication in teaching-learning process	*		*	*	*	
19120SEC02AL	**Packages Lab-II**	Enables other state students to continue their learning phase without any disruptions.	*	*		*	*	*
		Through this language they can learn spirituality.	*	*	*		*	*
19160SEC02B	**Soft Skill-II**	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.	*	*		*	*	*

Code	Subject	Course Outcome						
19111SEC02L	**Communicative English Lab-II**	Improves comprehension and retention. Develop speaking and writing skills	*	*	*		*	*
		Builds confidence in handling English language. Develops ideas with coherence and cohesion.		*	*	*		*
IIII 19110AEC31	**Tamil-III**	Achieve one's goal by following 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.		*	*	*		*
19132AEC31	**Hindi-III**	Enables other state students to continue their learning phase without any disruptions.	*	*	*		*	*

Course Code	Course Name	Course Outcome						
		Through this language they can learn spirituality.	*	*	*		*	*
		Students can learn social discrimination.D18.	*		*	*	*	
19111AEC31	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.	*		*	*	*	
19135AEC31	French-III	Focus on all four modalities of the language: speaking, listening, reading and writing.	*	*		*	*	*

Code	Course	Course Outcome						
		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.	*	*	*		*	*
19111AEC32	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 English. Ability to write composition, letter and vocabulary	*		*	*	*	
19120SEC33	**Visual Programming**	Students list the visual programming concepts. Explain basic concepts and definitions. Express constants and arithmetic operations.	*	*	*		*	*
		· The students can learn in selection of suitable farm equipment for tillage to harvest based on field and crop conditions.	*	*	*		*	*
		· The students can able to estimate the cost of farm equipment operation, coverage and power requirements	*	*	*	*	*	*
		· Students prepare various projects by helping visual programming.	*		*	*	*	

Code	Course	Outcome						
19120SEC34L	**Visual Programming Lab**	Cognitive abilities and skills relating to solution of problems in Physics and Physics Related Disciplines	*	*		*	*	*
		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.	*	*	*		*	*
19113AEC35A	**Applied physics –I**	To understand arithmetic operations Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP	*		*	*	*	
		To understand string and matrix operations	*	*		*	*	*
19113AEC36AL	**Applied physics Lab-I**	An ability to apply knowledge of 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 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;		*	*	*		*

Sem	Code	Course	Course Outcome						
III	19120RMC37	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.	*		*	*	*	
			With the help of this course, students will be able to take up and implement a research project/ study.	*	*	*	*	*	*
	191 SEC03	Skill Based Elective –III	Recognize when to use each of the Microsoft Office programs to create professional and academic documents.	*		*	*	*	

Sem	Code	Title	Course Outcome						
			Use Microsoft Office programs to create personal, academic and business documents following current professional and/or industry standards.	*		*	*	*	
	19111SEC03L	Communicative English Lab-III	Learns to analyze unfamiliar words by understanding the structure of the English language.	*	*		*	*	*
IV	19110AEC41/	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;	*	*	*		*	*

Code	Course	Outcome						
		Encourage creative writing and developing self-confidence.						
19132AEC41	**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.	*	*		*	*	*
19111AEC41	**Advanced English-IV**	Make oral presentations effectively for academic purposes by using appropriate discourse markers, transitions and conjunctions.	*		*	*	*	
		Respond to spoken discourse in their content courses and academic presentations.	*	*	*		*	*

Code	Course	Outcome						
		Follow oral instructions, identify details, and evaluate the speakers' viewpoints and attitudes	*	*	*		*	*
19135AEC41	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.	*		*	*	*	
19111AEC42	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.	*	*	*		*	*

Code	Course	Outcome	C1	C2	C3	C4	C5	C6	C7
		Understand the basic Grammar, and Spoken English. Ability to write composition, letter and vocabulary	*			*	*	*	
19120SEC43	Active Server Programming	Learners will be able to design web applications using ASP.NET	*	*		*	*		*
		Learners will be able to use ASP.NET controls in web applications	*	*	*			*	*
19120SEC44L	Active Server Programming Lab	Write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism		*	*	*			*
		Create one and two dimensional arrays for sorting, calculating and displaying of data.	*	*	*			*	*

Course Code	Course Name	Course Outcome						
19113AEC45A	**Allied Physics – II**	Effectively use and critically evaluate current 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.	*	*	*		*	*
		Students acquire knowledge about the plant and host relationship and their management	*	*	*		*	*
		They get knowledge about the integrated management of plant diseases and pest.	*		*	*	*	
19113AEC46AL	**Applied physics Lab –II**	Effectively use and critically evaluate current 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.	*		*	*	*	

191 SEC05	Skill Based Elective-IV	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.	*	*		*	*	*	
		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.		*	*	*		*	

Sem	Course Code	Course Title	Course Outcome						
	19111SEC05L	Communicative English Lab-IV	Learners will be able to design web applications using ASP.NET	*	*	*		*	*
			Learners will be able to create database driven ASP.NET web applications and web services demonstrate advanced knowledge of programming for network communications	*	*		*	*	*
	191ENVTSTU	Environmental Studies	Effectively use and critically evaluate current 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	19120SEC51	Data Communication and Networking	Help students to develop essential skills to influence and motivate others	*		*	*	*	

Code	Subject	Course Outcome						
		Nurture a creative and entrepreneurial mindset	*	*	*		*	*
		Make students understand the personal values and apply ethical principles in professional	*	*	*		*	*
19120SEC52	**Operating System**	Identify the components required to build 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	*	*		*	*	*
19120SEC53	**Microprocessor and its Applications**	Design various Scheduling algorithms.	*	*	*		*	*
		Compare and contrast various memory management schemes.	*		*	*	*	

		Design and Implement a prototype file systems.							
			*	*		*	*	*
19120SEC54L	**Microprocessor Lab**	Design and implement programs on 8086 microprocessor.							
			*	*	*		*	*
		Design and implement 8051 microcontroller based systems							
				*	*	*		*
19120SEC55L	**Operating System Lab**	Identify the architecture, infrastructure and 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.							
			*	*	*		*	*

Code	Course	Outcome						
		· Students will gain knowledge to establish different type's garden in various locations.	*	*	*		*	*
19120DSC56A	Cloud Computing	Understand Distributed systems design and implementation	*		*	*	*	
		Use Middleware to Build Distributed Applications	*	*	*	*	*	*
19120DSC56B	Middleware Technology	Make basic use of Enterprise software, and its role in integrating business functions	*		*	*	*	
		Analyze the strategic options for ERP identification and adoption.	*		*	*	*	
		Design the ERP implementation strategies.	*	*		*	*	*
		Create reengineered business processes for successful ERP implementation.	*	*	*		*	*

Code	Course	Outcome						
19120BRC57	**Participation in Bounded Research**	Design and implement programs on 8085 microprocessor.		*	*	*		*
		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.	*	*		*	*	*
191 SEC05	**Skill Based Elective-V**	Execute the Unix Shell programming on the given system configuration.	*	*		*	*	*
		Studying the concepts and applications of remote sensing and image processing in agriculture	*	*		*	*	*
		Understanding the concepts of nanotechnology	*		*	*	*	

Course Code	Course Title	Course Outcome						
		Students know about the economic and environmental feasibility of the precision farming technology.	*	*	*		*	*
19111SEC05L	Communicative English Lab-V	Prepare their resume in an appropriate 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	*		*	*	*	
19120DSC56C	Enterprise Resource Plan	Effectively use and critically evaluate current 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.	*	*	*		*	*

Semester	Course Code	Course Name	Course Outcome						
VI	19120SEC61	.NET Programming	Create web-based distributed applications using ASP.NET, SQL Server and ADO.NET	*		*	*	*	
			Utilize DirectX libraries inthe.NET environment to implement 2D and 3D Animations and game-related graphic displays and audio.	*	*		*	*	*
			Understand the key protocols which support The internet.	*	*	*		*	*
	19120SEC62	Relational Data Base Management System	Demonstrate the basic elements of a relational database management system.	*	* *	* *	*	*	* *
			Design entity relationship and convert entity relationship diagrams into RDBMS and formulate		*	*	*		*

Course Code	Course Name	Course Outcome						
		summarizationforms and determine data mining functionalities	*	*	*		*	*
		· Students learn to use the natural farm resources produced within the farm	*	*	*		*	*
19120SEC63L	.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	*		*	*	*	
19120SEC64L	Oracle Lab	Contrast and compare major elements of the .NET Framework and explain how C# fits into the .NET platform.	*		*	*	*	

Code	Course	Outcome						
		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.		*	*	*		*
19120DSC65A	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	*	*		*	*	*

Code	Course	Course Outcome						
19120DSC65B	**Artificial Intelligence and Expert System**	Develop mathematical thinking and problem solving skills associated with research and 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.	*	*	*		*	*
19111SEC06L	**Communicative English – VI**	To understand and analyses Information security threats & countermeasures	*	*	*		*	*
		To understand penetration and security testing issues	*	*	*	*	*	*

Code	Course	Outcome						
		To understand issues relating to ethical hacking	*		*	*	*	
19120EXACT	Extension Activities	To understand and analyses Information 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	*	*		*	*	*
19120DSC66C	Ethical hacking	know and demonstrate understanding of the concepts from the five branches of mathematics (Operations Research, Set	*	*	*		*	*

Course Code	Course Title	Outcome	1	2	3	4	5	6
		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		*	*	*		*
19120PEE	Program Exit Examination	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	*	*	*		*	*

SCHOOL OF ARTS AND SCIENCE
DEPARTMENT OF COMPUTER SCIENCE

Bachelor of Computer Application (B.C.A)

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	19110AEC41	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.	*	*	*		*	*
	19110AEC41	Hindi-I	Enables other state students to continue their learning phase without any disruptions.		*	*	*		*
			Through this language they can learn spirituality.	*	*	*		*	*

Course Code	Course	Outcome						
		Students can learn social discrimination		*	*	*		*
		Students can learn grammar techniques	*	*	*		*	*
19110AEC41	Advanced English-I	Academic skills in preparation for tertiary study.	*	*	*		*	*
		Presentation and participation skills.	*		*	*	*	
		Learning strategies and research skills	*	*	*	*	*	*
		Academic essay and report writing skills	*		*	*	*	
19110AEC41	French-I	Focus on all four modalities of the language: speaking, listening, reading and writing	*		*	*	*	

Course Code	Course Name	Course Outcome						
		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	*	*	*		*	*
19110AEC41	English-I	Read and comprehend literature	*	*		*	*	*
		Understand how to lead one's life realizing the modernity and its environment/atmosphere.	*	*		*	*	*
		Improves their proficiency in English language.	*	*		*	*	*

Code	Course	Outcome						
		Develops effective writing skills.	*		*	*	*	
		Develops functional communicative aspect of language through a series of real life tasks.	*	*	*		*	*
19110AEC41	Programming in C with C++	Design C Programs for problems.	*	*	*		*	*
		Able to understand and design the solution to a problem using object-oriented programming concepts.	*	*	*	*	*	*
19110AEC41	Programming in C with C++ Lab	Read understand and trace the execution of programs written in C language.	*		*	*	*	

Course Code	Course Name	Course Outcome						
		Implement programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.	*	*		*	*	*
19110AEC41	**CLASSICAL ALGIBRA**	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 related to Binomial,	*	*		*	*	*
		be able to calculate summation related to Binomial, Exponential and Logarithmic series	*	*	*		*	*

Code	Course	Course Outcome						
19110AEC41	**Numerical And Statistical Methods**	Apply numerical methods to find the solution of algebraic equations using different method 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	*	*	*		*	*
191SEC01	**SIKILL BASED ELECTIVE I**	Apply systems concepts and methodologies to analyze and understand interactions between social and environmental processes.	*	*	*		*	*

Course Code	Course Name	Course Outcome						
		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.	*	*	*	*	*	*
19110AEC41	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.	*	*		*	*	*

Code	Course	Course Outcome						
		Describe the importance of Preamble of the Indian Constitution and its significance.	*	*	*		*	*
19111SEC01L	Communicative English Lab-I	Know about universal human values 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	19110AEC21	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's culture and tradition	*		*	*	*	
			Encourage creative writing and developing self-confidence.	*	*	*		*	*
			Aiming at enriching human excellence	*	*	*		*	*
	19132AEC21	Hindi-II	Enables other state students to continue their learning phase without any disruptions	*	*	*	*	*	*
			Through this language the can learn spirituality	*		*	*	*	

Code	Course	Outcome						
		Students can learn grammar techniques. Enables them to enhance their language skills. Enables them to develop creative writing.						
		Students can learn social discrimination.D18	*	*		*	*	*
19111AEC21	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	*	*	*		*	*

Code	Course	Outcome						
19135AEC21	**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		*	*	*		*
19111AEC22	**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	*		*	*	*	

Code	Course	Outcome						
		Understand the basic Grammar, and Spoken English. Ability to write composition, letter and vocabulary	*	*	*	*	*	*
		Gain vocabulary through reading. Acquire fluency in English language.	*		*	*	*	
19122SEC23	**Data Structure and Algorithms**	Understand development of JAVA applets vs. JAVA applications.	*		*	*	*	
		Understand object inheritance and its use.	*	*		*	*	*
19122SEC24L	**Data Structure and Algorithms Lab**	To develop software applications using Java programming language.	*	*	*		*	*
		Write modular, multithreading and event driven programming.		*	*	*		*

Code	Course	Course Outcome						
19112AEC25B	**Discrete Mathematics**	Students completing this course will be able to express a logic sentence in terms of predicates, quantifiers, and logical connectives	*	*	*		*	*
19112AEC26B	**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.	*		*	*	*	

Course Code	Course Title	Course Outcome							
19122RLC27	**Research Led Seminar**	This course provides an experience in leading and participating in a discussion about a scientific paper.	*	*	*			*	*
191SEC02	**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.	*			*	*	*	
19111SEC02L	**Communicative English Lab-II**	Business etiquette training, a key part of soft skills & communication, facilitated by Momentum enlightens participants on the accepted behaviour patterns and manners key to their profession.	* *	* *	*		*	* *	* *

Sem	Course Code	Course	Course Outcome						
			It emphasises on a set of practices used and accepted in a multi-national work environment. .	*		*	*	*	
IIII 19110AEC31		Tamil-III	Achieve one's goal by 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.	*	*	*		*	*
19132AEC31		Hindi-III	Enables other state students to continue their learning phase without any disruptions.		*	*	*		*

Code	Course	Course Outcome						
		Through this language they can learn spirituality.	*	*	*		*	*
		Students can learn social discrimination.D18.		*	*	*		*
19111AEC31	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.	*		*	*	*	

Code	Course	Outcome						
19135AEC31	**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.	*	*		*	*	*

19111AEC32	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.			*	*	*			*
19122SEC33	Internet and Java Programming	Design, create, build, and debug Visual Basic applications.	*		*	*			*	*
		Explore Visual Basic's Integrated Development Environment (IDE).	*		*			*	*	*
		Write Windows applications using forms, controls, and events	*		*			*	*	*

Code	Course	Outcome						
		Write and apply decision structures for determining different operations.	*	*		*	*	*
19122SEC34L	Internet and Java Programming Lab	Apply arithmetic operations for displaying numeric output.	*		*	*	*	
		Apply decision structures for determining different operations.	*	*	*		*	*
19161SEC35	Financial Accounting	Through this language they can learn spirituality of accounts.	*	*	*		*	*
		Students can learn Financial Statements	*	*	*	*	*	*
19113AEC36C	Allied Physics – I	Demonstrate a working knowledge of the basic concepts and theories of physics.	*		*	*	*	

Sem	Code	Course	Course Outcome						
			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	19122RMC37	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.						
		With the help of this course, students will be able to take up and implement a research project/ study.	*	*	*		*	*
191SEC03	**Skill Based Elective –III**	Follow oral instructions, identify details, and evaluate the speakers' viewpoints and attitudes		*	*	*		*
		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	*	*	*		*	*
19111SEC03L	**Communicative English Lab-III**	Recognize when to use each of the Microsoft 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.	*	*	*		*	*
IV	19110AEC41	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.	*	*	*	*	*	*

Course Code	Course Name	Course Outcome						
19132AEC41	**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.	*	*		*	*	*
19111AEC41	**Advanced English-IV**	Make oral presentations effectively for academic purposes by using appropriate discourse markers, transitions and conjunctions.	*	*	*		*	*

Code	Subject	Outcome						
		Respond to spoken discourse in their content courses and academic presentations.		*	*	*		*
		Follow oral instructions, identify details, and evaluate the speakers' viewpoints and attitudes	*	*	*		*	*
19135AEC41	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.	*	*		*	*	*
20111AEC42	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	*	*	*			*	*
19122SEC43	**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	*	*	*	*		*	*
19122SEC44L	**Visual Programming Lab**	Analyze the basic structure of a C# application and be able to document, debug, compile, and run a simple application.	*			*	*	*	

Code	Course	Outcome						
		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.	*		*	*	*	
19113AEC45C	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	*	*	*		*	*

Course Code	Course Name	Course Outcome						
		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.		*	*	*		*
19113AEC46CL	Allied Physics Lab - I	Integrate and relate scientific knowledge learned from classroom 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.		*	*	*		*

Course Code	Course Title	Course Outcome						
191SEC04	**Skill Based Elective-IV**		*	*	*		*	*
		Maintain life-long learning in the sciences and incorporate new information into the existing body of knowledge.	*	*	*		*	*
19111SEC04L	**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	*		*	*	*	

191ENVTSTU	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.	*	*	*		*	*

Code	Course	Course Outcome						
v 19122SEC51	Relational Database Management Systems	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.	*	*		*	*	*
19122SEC52	.NET Programming	Compare and contrast various memory management schemes.	*	*		*	*	*
		Design and Implement a prototype file systems.	*	*		*	*	*
19122SEC53	Designing and supporting Computer Networks	Design Memory Interfacing circuits.	*		*	*	*	

			Understand the implementation of Buses		*	*	*		*	*
			Design and implement programs on 8086 microprocessor.		*	*	*		*	*
			Design and implement 8051 microcontroller based systems		*	*	*	*	*	*
19122SEC54L	**Oracle Lab**		Develop testing and experimental 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.		*	*		*	*	*

19122SEC55L	.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.	*	*	*		*	*

Course Code	Course Name	Course Outcome							
19122DSC56B	**E-Learning**	Actively participate in group discussions towards gainful employment		*	*	*			*
		Enlist the common errors generally made by candidates in an interview	*	*	*			*	*
19122DSC56A	**Computer Organization and Architecture**	Identify the architecture, infrastructure and delivery models of cloud computing		*	*	*			*
		Address the core issues of cloud computing such as security, privacy and interoperability	*	*	*			*	*
		. Apply suitable virtualization concept.	*	*	*			*	*

Code	Course Title	Course Outcome						
19122BRC57	**Participation in Bounded Research**	To study how it helps to incorporate application portability, distributed application component interoperability and integration.	*		*	*	*	
		Understand Distributed systems design and implementation	*	*	*	*	*	*
		Understand existing Distributed Technologies	*		*	*	*	
		Understand Web services architectures	*		*	*	*	
191SEC05	**Skill Based Elective-V**	To aim at preparing the students technological competitive and make them ready to self-upgrade with the higher technical skills.	*	*		*	*	*

Course Code	Course Name	Course Outcome						
		Actively participate in group discussions towards gainful employment	*	*	*		*	*
		Enlist the common errors generally made by candidates in an interview		*	*	*		*
19111SEC05L	**Communicative English Lab-V**	Familiar with how to write a good 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	*	*		*	*	*

No	Code	Subject	Course Outcome						
			summarization forms and determine data mining functionalities	*	*		*	*	*
			· Students learn to use the natural farm resources produced within the farm	*		*	*	*	
vi 19122SEC61		Advanced Web Technology	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.	*	*	*	*	*	*

19122SEC62	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.	*		*	*	*	
19122SEC63L	Advanced Web Technology Lab	Use common statements to implement flow control, looping, and exception handling.	*	*		*	*	*
		Contrast and compare major elements of the .NET Framework	*	*	*		*	*

Course Code	Course Name	Course Outcome						
		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.	*	*	*			*
19122SEC64L	Operating System Lab	Unary and Binary table Operations.	*	*	*		*	*
		Handling online Transactions.		*	*	*		*
		Database Connectivity with front-end.	*	*	*		*	*
19122DSC65C	Enterprise Resource Plan	Assess raw input data, and process it to provide suitable input for a range of data mining algorithms.	*	*	*		*	*

Code	Course	Course Outcome						
		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.	*	*	*	*	*	*
19122DSC56A	Software Project Management	Demonstrate fundamental 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.	*		*	*	*	

Code	Course	Outcome						
		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.	*	*	*		*	*
19122DSC65B	**Object Oriented Analysis and Design**	Plan a vulnerability assessment and 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.	*	*		*	*	*

Code	Course	Outcome						
		Identify legal and ethical issues related to vulnerability and penetration testing.	*	*		*	*	*
19111OEC	Journalism	Shall empower themselves by communication, professional and life skills.	*	*		*	*	*
		shall have an understanding of acquiring knowledge throughout life.	*		*	*	*	
19112OEC	Development of Mathematical Skills	To impart Information 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.	*	*	*		*	*
19113OEC	Instrumentation	The students ableto Design and develop GUI applications using Abstract Windowing Toolkit (AWT)	*	*	*	*	*	*

Code	Course Name	Description						
		Programmer training by creating standardized, reusable modular components and by enabling the tier to handle many aspects of programming automatically.	*		*	*	*	
19114OEC	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	*		*	*	*	
19117OEC	Mushroom Technology	To inculcate professional ethics, values of Indian and global culture.	*	*		*	*	*
		Shall acquire the understanding of importance of cooperation and teamwor	*	*	*		*	*

Code	Name	Outcome						
		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	*	*	*		*	*
		Produce students with the thorough knowledge in the need for editing		*	*	*		*
19161OEC	Indirect Tax	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;	*		*	*	*	

Code	Course	Outcome						
19111SEC06L	**Communicative English Lab-VI**	Aiming at enriching human 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	*	*	*		*	*

Code	Course	CO	C1	C2	C3	C4	C5	C6
		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.	*	*		*	*	*
19122PRW67	**Project Work**	Understand, identify and analyze a problem related to food industry and ability to find an appropriate solution for the same.	*	*		*	*	*
		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 & SCIENCE
DEPARTMENT OF COMPUTER SCIENCE
M.Sc., (Computer Science)

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	P
I	19220SEC11	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.	*	*	
	19220SEC12	Relational Data Base Management System	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.	*	*	

Code	Course	Outcome		
19220DSC16B	**Advanced Computer Architecture**	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	*	
19212SEC13	**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.		*
19220SEC14L	**J2EE programming Lab**	Thestudents ableto Design and develop GUI applications using Abstract Windowing Toolkit (AWT)	*	*

Course Code	Course Name	Outcome			
		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	*		
19220SEC15L	RDBMS Lab	Can Declare and enforce integrity constraints on a database using a state-of-the-art.	*	*	
		Programming PL/SQL including stored Procedures.	*	*	
19220DSC16A	WAP and XML	Analyze processor Performance improvement 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.		*	*
	19220RLC17	**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.	*	
II 19220SEC21		**Python Programming**	To implement the python programming 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.	*	*
	19220SEC22	**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.	*	*
	19220SEC23	**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	**19220SEC24L**	**Python Programming Lab**	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.		*
	19220SEC25L	**UNIX Lab**	To introduce Basic Unix general purpose Commands	*	*
			To learn C programming in Unix editor environment.	*	*
			To learn shell script and sed concepts.	*	*
	20222SEC26L	**UNIX Lab**	To impart basic proficiency in representing 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	*	*

Code	Course	Outcome		
19220DSC26A	**Artificial Intelligence**	To understand the main components of an OS & their functions.	*	*
		To study the process management and scheduling.	*	
		To understand various issues in Inter Process Communication (IPC) and the role of OS in IPC.	*	*
19220DSC26B	**Distributed Operating System**	Develop open source programming products 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		*
19220RMC27	**Research Methodology**	Thesestudents able to develop efficient open source programmes for rapidly developing network world	*	*

19220BRC28	**Participation in Bounded Research**	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.	*		
IIII **19220SEC31**	**Open Source programming**	Ability to estimate if a system takes 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.	*	*	

19220SEC32	**.NET Programming**	It provides re-usability.	*	*	
		Create web-based distributed applications using ASP.NET, SQL Server and ADO.NET			*
19220SEC33L	**Open Source programming Lab**	develop menu based program for text 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.	*	*	
19220SEC34L	**.NET Programming Lab.**	Securing confidential information.	*	*	
		Protection from malicious attacks on your network.	*		
		Develop an understanding of security policies.	*	*	
19220DSC35A	**Real time Operating Systems**	Deletion and/or guaranteeing malicious elements within a preexisting network.	*	*	

Code	Course	Outcome			
		Prevents users from unauthorized access to the network.	*	*	
		Upon completion of the course, the student should be able to	*		
		Analyze various protocols for IoT	*	*	
19220DSC35B	Wireless Communication Network	Develop web services to access/control IoT devices.	*	*	
		Design a portable IoT using Rasperry Pi	*		
		Deploy an IoT application and connect to the cloud.	*	*	
		Analyze applications of IoT in real time scenario	*	*	
19211OEC	Writing for the Media	Upon Completion of the course, the students should be able to Business techinques			*
		Analyze various mobile marketing strategies.	*	*	
19213OEC	Bio-Medical Instrumentation	Design solutions for complex engineering problems 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.			*

		Analyze various mobile marketing strategies	*	*
		To exhibit skills in inventions, innovations and entrepreneurship to meet societal needs with the current trends in technology.	*	*
19214OEC	**Green Chemistry**	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.	*	
		Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.	*	*
		Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions	*	
19215OEC	**Bio analytical Techniques**		*	
		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	*	*
				*

Code	Course	Outcome		
19261OEC	**Insurance Services**	To understand and implement Automated software testing techniques for Web testing, Performance testing, and GUI testing.	*	*
		To develop, implement, and demonstrate the learning through a project that meet stated specifications.	*	*
		Clearly defined customer outcomes	*	*
		Investigation and, where needed, actions taken	*	*
19280OEC	**Counseling Psychology**	Individual, family and group counseling and psychotherapy. Crisis intervention, disaster and trauma management.	*	
		rograms/workshops that educate and inform the public about mental health, school, family, relationship and workplace issues so that problems can be prevented before they start or reduced before they get worse.	*	*
19220SRC37	**Societal project (Mini Project)**	To understand and implement Automated software testing techniques for Web testing, Performance testing, and GUI testing.	*	*
		To develop, implement, and demonstrate the learning through a project that meet stated specifications.	*	*
19220SEC41	**Software Testing**	Design effective dialog for HCI.	*	
		Design effective HCI for individuals and persons with disabilities.	*	*

			Assess the importance of user feedback.	*	*
			Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Websites.	*	
IV	**19220SEC42**	**Human Computer Interaction**	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 these can be used with learners to develop multimedia products	* *	* *
			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.	*	*
	19220DSC43A -	**Multimedia and its applications 19220DSC43B -**	In Business it helps streamline processes and improve efficiency in terms of organization.		*
			It facilitates communication between the systems.	*	*
	19220DSC43B	**Middleware Technologies**	To understand and implement Automated software testing techniques for Web testing, Performance testing, and GUI testing.	*	*

	Code	Course	Outcome			
			To develop, implement, and demonstrate the learning through a project that meet stated specifications.	*		
	19220PRW44	**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.	*		
			Identify links and dependencies, and schedule to achieve deliverablehandoverE	*		
	19220PEE	**Program Exit Examination**	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.	*	*	
			The exam is supposed to measures the learning outputs of the program as a whole not the individual courses.		*	

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

Sem	Course code	Course title	CO's	PO1	PO2	PO3	PO4	PO5	PO6
I	19222SEC11	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.	*	*	*		*	*
	19222SEC12	Data communication network	Design a database using ER diagrams and map ER into Relations and normalize the relations.		*	*	*		*
			Acquire the knowledge of query evaluation to monitor the performance of the DBMS.	*	*	*		*	*

Code	Subject	Description	C1	C2	C3	C4	C5	C6
		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.	*	*	*		*	*
19222SEC13	**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.	*	*	*	*	*	*

Code	Course	Description						
		Examples of structures that are discrete are combinations, graphs, and logical statements. Discrete structures can be finite or infinite.	*		*	*	*	
19222SEC14	**Programming in VB**	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.	*	*		*	*	*
		Swing and Event Handling	*	*	*		*	*
		Web applications and Designing		*	*	*		*

		Enterprise based applications for business logic		*	*	*		*	*
19212AEC15	Numerical and Statistical Methods	Can Declare and enforce integrity constraints on a database using a state-of-the-art.		*	*		*	*	*
		Programming PL/SQL including stored Procedures.		*	*		*	*	*
19222SEC16L	C programming and Data structure Lab	Analyze processor Performance improvement 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	*		*		*			*	*
19222SEC17L	**Programming in VB Lab**	Analyze processor Performance improvement 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 attacks, defense mechanisms against network attacks, and cryptographic protection mechanisms.	*	*	*		*	*

Sem / Code	Course	Course Outcome						
II 19222SEC21	OOPs with C++	To implement the python programming 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.		*	*	*		*
19222SEC22	Operating system	Develop basic skills of secure network architecture and explain the theory behind the security of different cryptographic algorithms.	*	*	*		*	*

Code	Course	Outcome						
		Describe common network vulnerabilities and attacks, defense mechanisms against network attacks, and cryptographic protection mechanisms.	*	*	*			*
19222SEC23	**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.	*		*	*	*	

Code	Course	Outcome						
19222SEC24	**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.	*	*	*		*	*
19212AEC25	**Optimization Technique.**	To introduce Basic Unix general purpose Commands		*	*	*		*

Code	Course	Course Outcome						
		To learn C programming in Unix editor environment.	*	*	*		*	*
		To learn shell script and sed concepts.	*	*		*	*	*
19222SEC26L	OOPs with C++ Lab	To impart basic proficiency in representing 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	*	*	*		*	*

Code	Course	Outcome						
19222SEC27L	**Web Designing Lab**	To understand the main components of an OS & their functions.	*	*	*		*	*
		To study the process management and scheduling.	*	*	*	*	*	*
		To understand various issues in Inter Process Communication (IPC) and the role of OS in IPC.	*		*	*	*	
III 19222SEC31	**J2EE Programming**	Develop open source programming products 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.	*	*		*	*	*

Code	Course	Outcome							
		Understand basic PHP syntax for variable use, and standard language constructs, such as conditionals and loops	*	*	*			*	*
19222SEC32	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.	*	*	*			*	*
19222SEC33	Routing and Switching in LAN	These students able to develop efficient open source programmers for rapidly developing network world		*	*	*			*
19212SEC34	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.	*		*	*	*		

Course Code	Course Name	Course Outcome	1	2	3	4	5	6
		It provides re-usability.	*	*	*	*	*	*
19222SEC35L	J2EE Programming Lab	Ability to estimate if a system takes 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.	*	*	*		*	*
19222SEC36L	RDBMS Lab	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.	*	*		*	*	*

Code	Course	Outcome						
		Learn and analyze the different wireless technologies.	*	*		*	*	*
		These students able to understand and develop wireless communication and its infrastructure.	*	*		*	*	*
19222DSC37A	Mobile Computing	To understand and implement Automated software testing techniques for Web testing, Performance testing, and GUI testing.	*		*	*	*	
		To develop, implement, and demonstrate the learning through a project that meet stated specifications.	*	*	*		*	*
19222DSC37B	Knowledge based decision support system	Design effective dialog for HCI.	*	*	*		*	*
		Design effective HCI for individuals and persons with disabilities.	*	*	*	*	*	*
		Assess the importance of user feedback.	*		*	*	*	
19222RLC38	Research Led Seminar	Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Websites.	*	*		*	*	*

Sem / Code	Course	Course Outcome						
		Analyze processor Performance improvement using instruction level parallelism.	*	*	*		*	*
		Learn the function of each element of a memory hierarchy.	*		*	*	*	
IV 19222SEC41	Python Programming	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.	*	*	*		*	*
		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.	*	*	*		*	*

Code	Course	Course Outcome	C1	C2	C3	C4	C5	C6
19222SEC42	**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.	*		*	*	*	
19222SEC43	**Open Source programming**	To understand the main components of an OS & their functions.	*	*	*	*	*	*
		To study the process management and scheduling.	*		*	*	*	

	Code	Course	Outcome						
	19222SEC44	**Web Service**	To understand and implement Automated software testing techniques for Web testing, Performance testing, and GUI testing.	*		*	*	*	
			To develop, implement, and demonstrate the learning through a project that meet stated specifications.	*	*		*	*	*
	19222SEC45L	**Python Programming Lab**	Design effective dialog for HCI.	*	*	*		*	*
			Design effective HCI for individuals and persons with disabilities.		*	*	*		*
			Assess the importance of user feedback.	*	*	*		*	*
			Explain the HCI implications for designing multimedia/ ecommerce/ e-learning Websites.	*	*		*	*	*
	19222SEC46L	**Open Source programming Lab**	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	**	**		**	**	**

Code	Name	Description						
		these can be used with learners to develop multimedia products						
		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.	*	*	*		*	*
19222DSC47A	Game Programming	In Business it helps streamline processes and improve efficiency in terms of organization.	*	*	*		*	*
		It facilitates communication between the system.	*	*	*	*	*	*
19222DSC47B	Multimedia and Graphics	Can be able to develop plans with relevant people to achieve the project's goals.	*		*	*	*	
		Break work down into tasks and determine handover procedures.	*	*		*	*	*

Code	Course	Outcome						
		Identify links and dependencies, and schedule to achieve deliverablehandoverE	*	*	*		*	*
19222DSC47C	Middleware Technology	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.	*	*		*	*	*
		The exam is supposed to measures the learning outputs of the program as a whole not the individual courses.	*	*	*		*	*
19222RLC38	Research Led Seminar	An understanding of the content of learning 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, audio and video	*	*	*		*	*

Sem	Code	Course	Course Outcome							
			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.		*	*	*			*
V	19222SEC41	Python Programming	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.	*	*	*			*	*
	19222SEC42	Cryptography Network security	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.	*			*	*	*	

		Students who complete this course will be able to understand and comprehend the basics in research methodology and applying them in research/ project work.	*	*	*	*	*	*
19222SEC43	**Open Source programming**	Design C Programs for problems.	*		*	*	*	
		Write and execute C programs for simple applications	*		*	*	*	
19222SEC44	**Web Service**	Apply the different data structures for implementing solutions to practical problems.	*	*		*	*	*
19222SEC45L	**Python Programming Lab**	Design C Programs for problems.	*	*	*		*	*
		Write and execute C programs for simple applications		*	*	*		*

Code	Course	Course Outcome						
19222SEC46L	Open Source programming Lab	Identify the components required to build different types of networks	*	*	*		*	*
		Choose the required functionality at each layer for given application	*	*		*	*	*
19222 DSC 56A	Information Security	Identify solution for each functionality at each layer	*	*		*	*	*
		Design arithmetic and logic unit.	*	*		*	*	*
19222 DSC56B	Internet of Things	Design and analyze pipelined control units	*		*	*	*	
19222DSC56C	M-Marketing	Evaluate performance of memory systems.	*	*	*		*	*
19222SRC57	Societal project (Mini Project)	Understand parallel processing architectures.	*	*	*		*	*

Code	Course	Outcome						
		Design, create, build, and debug Visual Basic applications.	*	*	*	*	*	*
19222SEC61	Human Computer Interaction.	Explore Visual Basic's Integrated Development Environment (IDE).	*		*	*	*	
		Create one and two dimensional arrays for sorting, calculating, and displaying of data.	*	*		*	*	*
19222SEC62	Software Project Management	Write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism.	*	*	*		*	*
		Write Windows applications using forms, controls, and events	*		*	*	*	
19222SEC63	Big Data	Design, create, build, and debug Visual Basic applications.	*	*		*	*	*

Code	Course	Outcome						
		Explore Visual Basic's Integrated Development Environment (IDE).	*	*	*		*	*
19222PRW64	Project work	Able to understand and design the solution to a problem using object-oriented programming concepts.		*	*	*		*
		Able to use proper class protection mechanism to provide security.	*	*	*		*	*
19222PEE	Program Exit Examination	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.	*	*	*		*	*

Sem	Course code	Course title	CO's	PO1	PO2	PO3	PO4	PO5	PO6
I	193RMGC11	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.	*	*	*		*	*
	193CSC12	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.		*	*	*		*

Code	Course	Outcome						
		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.		*	*	*		*
193CSC13_	Advanced Networking Big Data	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.	*		*	*	*	
		You will also learn how to configure the router and the switch for remote access.	*	*	*		*	*
193RPE14	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.	*	*	*		*	*

Course Code	Course Name	Course Outcome						
		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.	*	*	*	*	*	*
193CSD21	**Dissertation - (Topic selected should be relevant to the topic of the In-depth paper**	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.	*	*	*		*	*