

Department of Computer Science and Engineering List of Course Outcomes for 2019 Regulation

SI No.	Year & Semester	Course Code	Course Name	Course Outcome
				1. CO1: (Understand) Express their ideas effectively using appropriate vocabulary
			TECHNICAL ENGLISH	2. CO2: (Apply) Develop reading skills with the help of relevant reading strategies
1		U19HS101		3. CO3: (Apply) Apply various interactive techniques for effective communication
				4. CO4: (Apply) Write letters, Contents and articles with proper structure
				5. CO5: (Apply) Make use of writing skills to communicate effectively
				1. CO1: (Apply) Determine inverse, higher integral powers by Cayley Hamilton theorem and convert guadratic form to canonical form by orthogonal transformation
				2. CO2: (Analyze) Analyze the convergence or divergence of series of positive terms and alternating series by various techniques.
2		U19MA101	MATRIX ALGEBRA AND	3. CO3: (Analyze) Classify the extreme values of functions of two variables and functional dependence.
			CALCULUS	. CO4: (Apply) Apply integration concepts to compute area of the given surfaces, integrals in cartesian and polar coordinates.
				5. CO5: (Apply) Apply triple integration concepts to compute volume of the given surfaces and solid structure and area, volume of the surface using Gamma and Beta functions.
				1. CO1: (Apply) Apply the principles of electrochemistry and corrosion in engineering.
				2. CO2: (Understand) Understand the quality of water, and its treatment methods.
3		U19CY101	ENGINEERING CHEMISTRY	3. CO3: (Apply) Apply the concepts relevant to thermodynamics.
				4. CO4: (Understand) Understand the Engineering materials.
				5. CO5: (Understand) Understand the science of polymer and polymer reactions.
		U19CS101	PROBLEM SOLVING USING C	1. CO1: (Understand) Understand appropriate looping and conditional constructs for given problems
				2. CO2: (Understand) Understand pointers, arrays and strings to solve complex problems
4	1 st Year and			3. CO3: (Understand) Understand Structures, unions and files for problem solving
	1 st Semester			4. CO4: Understand) Understand problem solving techniques to real world problems
				5. CO5: (Understand) Understand use of functions to build modular programming
		U19ME101	1. CO1: (Apply) Draw orthog dimensional views 2. CO2: (Apply) Communicat 3. CO3: (Apply) Draw the product of the prod	1. CO1: (Apply) Draw orthographic projection to represent three dimensional objects in two dimensional views
				2. CO2: (Apply) Communicate industry standards through engineering drawings
5				3. CO3: (Apply) Draw the projection of simple solids using graphic principles
				 CO4: (Apply) Draw the sectional views of simple solids and develop the surfaces of sheet metal components.
				5. CO5: (Apply) Draw isometric projection and perspective projection of simple objects
6		1119021111		1. CO1: (Analyse) Analyse the role of water quality related parameters.
0		01961111		2. CO2: (Create) Design the engineering materials against corrosion.
				 CO1: (Apply) Fabricate and experiment with Mechanical and Carpentry components and pipe connections.
				2. CO2: (Apply) Use fabrication tools to join and assembling the structures.
7		U19GE111	ENGINEERING PRACTICES LABORATORY	 CO3: (Apply) Identify and Illustrate the various parts of pumps, plumbing works, welding and machine tools.
				 CO4: (Apply) Apply electrical & electronic fundamentals to understand basic circuit elements and emerging technologies
				5. CO5: (Apply) Use electrical fundamentals to solve domestic / industrial wiring faults.
				1. CO1: (Apply) Solve problems using data types and operators
		U19CS111	PROBLEM SOLVING USING C LABORATORY	2. CO2: (Apply) Apply appropriate looping and conditional constructs for given C programs
8				3. CO3: (Apply) Use functions to build modular programs
				 CO4: (Apply) Use appropriate IDE and tools to write, compile, debug and execute a C Program.
				5. CO5: (Apply) Implement structures, unions and File Operations



9 1 ⁴ Year and s ¹⁵ Semistric 10.501 (Apply) Apply they have produce using a discrimination of the second and they for future working invoruments 10 3 ¹⁶ Semistric 10.001 (Apply) Apply they have and unsign with offferent types of parple to exceed working invoruments 10 3 ¹⁶ Semistric 10.001 (Apply) Charace a town envorument in the discretion the resource mature involution invoruments 10 3 ¹⁶ Semistric 10.001 (Apply) Charace a town envorument in the discretion of the semistrice mature invoruments 10 10.001 (Apply) Charace a town envorument in the discretion of the semistrice mature invoruments 10 10.001 (Apply) Charace a town envorument in the discretion of the semistrice mature invoruments 10 10.001 (Apply) Charace a town envorument in the discretion invorum integra theorem is the semistrice mature integration invorume theorem is the semistrice mature integration for comparison of the semistrice mature integration integration integration for comparison integration for comparison integration for comparison integration for comparison integration in the implication in the	SI No.	rear & Semester	Course Code	Course Name	Course Outcome
9 1 ⁴¹ work of the second secon					1. CO1: (Apply) Apply the basic personality traits in social activity for future working environment
9 1 ⁺ Year and 1 ⁺ Seneter u18PH101 SOFT SKILLS 1.C.031: (Analyze 3A shapkyr and megle with different types of people to overcome and end/ord effort 10 1 ⁺ Seneter -C.031: (Apply) Craste a total with different types of people to overcome and end/ord effort 10 1 ⁺ Seneter -C.031: (Apply) Craste a total with with the theorem of deliptine in future and the operation of the transmission between them. 10 1 ⁺ Seneter -C.031: (Apply) Affect Sec of the the transmission and theorem starter of analyze given problems and ablot the religion between them. 11 1 ⁺ Seneter -C.031: (Apply) Affect Sec of the the medication the thermose and end/ord in the constant analyze intervation of differential equations with contant carafterioaction. 11 1 ⁺ Seneter -C.031: (Apply) Hat used of the medication end/ord intervation and intervation and intervation and intervation of the company. 11 1 ⁺ Seneter -C.031: (Apply) Hat used of the medication end/ord intervation and intervation					2. CO2: (Apply) Apply receptiveness and get customized to today's corporate world
1 1************************************	9	1 st Year and 1 st Semester	U19EM101	SOFT SKILLS	 CO3: (Analyze) Analyze and mingle with different types of people to overcome and eradicate fear
10 1.* Cost: (Appl) / Create a viol vision about their behaviour and discipline in future and through with obsec in insurance the inspace in bounding for a viol vision in the end of the control of the contr					 CO4: (Apply) Create a team environment in the classroom to measure their individual team player skills
10 1. C01: (Analyze) Compare the ideas of vector integral thermosifies for solving gives problems and exclusion to the sensition to the sensition of the sense sensit the sensition of the sensensition of the sensition of t					CO5: (Apply) Create a vivid vision about their behaviour and discipline in future and through which they can measure themselves in socializing
10 2.032. (Apply) Make use of Mile Themson method to complex functions in devided to complex functions in certain regions to COMPLEX VARIALS. OCCUPENT VARIANCE COMPLEX VARIANCE VARI					 CO1: (Analyze) Compare the ideas of vector integral theorems for solving given problems and exhibit the relation between them.
10 1.03: (Apply) Apply the concepts of integration for complex functions in certain region to concepts (ArcConcepts) (Apply) Apply Capture Langer analysis and application to differential equations with concentrat equations (ArcConcentrat) (Apply) Carn the basic of properties of matter and its applications in their equilications in their equilications in expansion (ArcConcepts of epiter) 11 1.01: (Apply) Learn the basic of properties of matter and its applications in their equilications in expansion (ArcConcepts of epiter) 11 1.02: (Apply) Learn the basic of ruparties of a duation subject expansion (ArcConcepts of epiter) 11 1.03: (Apply) Have adequate knowledge on the concepts of epiter end its applications in time end integration (ArcConcepts of epiter) 11 1.03: (Apply) Have adequate knowledge on the concepts of epiter end its epiter) 12 1.03: (Apply) Have adequate knowledge on the concepts of epiter) 12 1.03: (Apply) Have adequate knowledge on the concepts of epiter) 12 1.03: (Apply) Have adequate knowledge on the concepts of epiter) 12 1.03: (Apply) Have adequate knowledge on the concepts of epiter) 13 1.03: (Apply) Apply exception handling concepts of using appropriate data types 14 1.03: (Apply) Apply exception handling concepts of epitenend concepts					CO2: (Apply) Make use of Milne Thomson method to construct analytic functions related to complex variable.
11 2. COM: (Apply) Apply Explace transform and newser explaines with constant coefficients. 11 1. COM: (Apply) Apply Explace transform and applications of simple functions. 11 1. COM: (Apply) Apply explane transform and applications of simple functions. 11 1. COM: (Apply) Apply explane transform and applications of thermal equations. 11 1. COM: (Apply) Apply explane transform and applications of thermal properties of matter and its applications in function equations. 12 1. COM: (Apply) Clearm the basic of properties of matter and its applications in function equations. 12 1. COM: (Apply) Clearm the basic of properties of matter and its applications in functions. 12 1. COM: (Apply) Clearm the basic of properties of matter and its applications in functions. 12 1. COM: (Apply) Clearm the basic of properties of matter and its applications in functions. 13 1. COM: (Apply) Clearm the basic of properties of matter and its applications. 14 1. COM: (Apply) Clearm the basic of properties of matter and its applications. 14 1. COM: (Apply) Clearm the applications. 15 1. COM: (Apply) Mice problems using incrude and extendence of the applications. 16 1. COM: (Apply) Prove properties of matter and its applications. 17 1. COM: (Apply) Prove properties using ap	10		U19MA102	ADVANCED CALCULUS AND	3. CO3: (Apply) Apply the concepts of integration for complex functions in certain regions to determine real integrals
11 1 Co3: (Apply) Apply various techniques in solving differential equations. 11 1 Co3: (Apply) Apply various techniques in solving differential equations. 11 U19PH101 ENGINEERING PHYSICS 3. CO3: (Apply) Apply various techniques in solving differential equations. 12 U19PH101 ENGINEERING PHYSICS 3. CO3: (Apply) Apply various techniques on the concepts of themal properties of matterials in the optical concepts. 12 U19PH101 ENGINEERING PHYSICS 3. CO3: (Apply) Apply various techniques on the concepts of themal properties of matterials in the optical concepts. 12 U19CS102 PTHON PROGRAMMINE 3. CO3: (Apply) Mile physics on the oncepts of themal properties differentials 13 U19CS102 PTHON PROGRAMMINE 3. CO3: (Apply) Mile physics on programs using appropriate data types 14 U19CS102 PTHON PROGRAMMINE 3. CO3: (Apply) Apply exception handling concepts to various problems 13 2. GO3: (Apply) Apply exception handling concepts to various problems 3. CO3: (Apply) Apply exception handling concepts to various problems 14 V19EC102 DIGITAL SYSTEM DESION 3. CO3: (Apply) Implementation of the PLBs proposed for combinational circuit design 14 V19EE101 BASIC ELECTRONICS ENGINEE				COMPLEX VARIABLES	4. CO4: (Apply) Apply Laplace transform and inverse transform of simple functions, properties, various related theorems and application to differential equations with constant coefficient.
11 1 CO1: (Apply) Learn the basic of properties of matter and its applications in their applicatint their applications in their applications in their application i					5. CO5: (Apply) Apply various techniques in solving differential equations.
11 0 2.02: (App)) Acquire knowledge on the concepts of optical devices and their applications in free optics. 11 0.03: (App)) Have adequate knowledge on the concepts of termal properties of materials and their applications in meganoin optical devices and their applications in their applicatinding intercepts					1. CO1: (Apply) Learn the basic of properties of matter and its applications
11 u19H101 ENGINEERING PHYSICS 3.03: (Apply) Have adquate knowledge on advanced physics concepts of quantum theory and its applications in theoring) opins and heat exchangers. 12					CO2: (Apply) Acquire knowledge on the concepts of optical devices and their applications in fibre optics
12 1.4 Co4: (Apply) Get knowledge on advanced hysics concepts of quantum theory and its applications in splittenions and tunneling microscopes. 12 5. CO5: (Understand) Understand the basics of quantum structures and their applications in splittenions and carbon electronics. 12 1.4 Co4: (Apply) Oet knowledge on advanced hysics concepts of quantum structures and their applications in splittenions and carbon electronics. 13 1.4 Co4: (Apply) Develop modular programs using appropriate data types 14 2.4 Co4: (Apply) Solve problems using list, tuple and dictionary 15 CO2: (Apply) Apply exception handling concepts to various problems 16 1.9 Co1: (Understand) Understand the object oriented concepts 17 1.6 Co1: (Understand) Write the HDL codes for combinational and Sequential Circuits 18 1.9 Co1: (Understand) Write the HDL codes for combinational and Sequential Circuits 19 1.9 Co1: (Understand) Physics concepts of various problems 1.4 Co2: (Apply) Implementation of timp/flate Boolean Expressions for designing combinational and sequential circuits and sequential circuit design 1.4 Co2: (Apply) Implementation of simplified Boolean Expressions for designing combinational circuit design 1.4 (1992) DIGITAL SYSTEM DESIGN 1.5 (CO2: (Apply) Implementation of timp/flate Boolean functions using KMap 1.6 Co1: (Understand) Summarize	11		U19PH101	ENGINEERING PHYSICS	CO3: (Apply) Have adequate knowledge on the concepts of thermal properties of materials and their applications in expansion joints and heat exchangers.
12 1 st Year and 2 st Semester 1 st Year and 2 st Semester 1 st Year and 2 st Semester 1.01: (Apply) Write python programs using appropriate data types 13 1 st Year and 2 st Semester 1.1 st Year and 2 st Semester 1.01: (Apply) Parameter (Apply) Solve problems using list, tuple and dictionary 13 1 st Year and 2 st Semester 1.01: (Understand) Understand the object oriented concepts 14 1 st Year and 2 st Semester 1.01: (Understand) Write the HDL codes for combinational and Sequential Circuits 13 1.01: (Understand) Write the HDL codes for combinational and Sequential Circuits 2.02: (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using Ogic gates 14 19EC102 DIGITAL SYSTEM DESIGN 3.03: (Apply) Implementation of the PLDs proposed for combinational circuit design 4.004: (Apply) Simplify the Boolean functions using KMap 14 19EC102 DIGITAL SYSTEM DESIGN 4.004: (Apply) Amalyze the synchronous and asynchronous sequential complex digital circuits for real time applications 14 19EC102 DIGITAL SYSTEM DESIGN 3.03: (Understand) Simplify the Boolean functions using KMap 16 0.19EC102 DIGITAL SYSTEM DESIGN 3.03: (Apply) and the basic of quarture strutt design 16 0.19EC102 DIGITAL SYS					 CO4: (Apply) Get knowledge on advanced physics concepts of quantum theory and its applications in tunneling microscopes.
12 Image: second s					CO5: (Understand) Understand the basics of quantum structures and their applications in spintronics and carbon electronics.
12 1.º UI9CS102 PUTHON PROGRAMMING 2. C02: (Apply) Develop modular programs using functions 13 1.º Vear and 2.º Semester 1.º Vear and 2.º Semester 1. C01: (Understand) Understand the object oriented concepts 13 1.º Vear and 2.º Semester 1.0 [II Second Develop modular programs using list, tuple and dictionary 14 1.º Vear and 2.º Semester 1.0 [II Second Develop Mapply exception handling concepts to various problems 13 1.º Vear and 2.º Semester 1.0 [II Second Develop Mapply exception handling concepts to various problems 14 1.º UI9EC102 DIGITAL SYSTEM DESIGN 2. C02: (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates 14 1.º UI9EC102 DIGITAL SYSTEM DESIGN 3. C03: (Apply) Implementation of simplified Boolean Expressions for designing combinational and electronic sequential circuits using logic gates 14 II Second Develop Mapply the Boolean Expressions for designing combinational and electronic devices and digital circuits. 14 II Second Develop Mapply Mapply Second Develop Mapply Mapply Second Develop Mapply Mapply 14 II Second Develop Mapply Mappl				PYTHON PROGRAMMING DIGITAL SYSTEM DESIGN	1. CO1: (Apply) Write python programs using appropriate data types
12 					2. CO2: (Apply) Develop modular programs using functions
14 It is is in the second	12		U19CS102		3. CO3: (Understand) Understand the object oriented concepts
14 Year and 2 rd Semeter 11 ⁴ Year and 2 rd Semeter 11 ¹⁴ Year and 2 rd Year And 2 rd Year And 3 ^r					4. CO4: (Apply) Solve problems using list, tuple and dictionary
14 ¹⁴ Year and 2 ^{nd*} Semester 1. 01: (Understand) Write the HDL codes for combinational and Sequential Circuits and sequential circuits using logic gates 13 1. 01: (Understand) Write the HDL codes for combinational and Sequential Circuits and sequential circuits using logic gates 14 1. 01: (Understand) Write the HDL codes for combinational circuit design and sequential circuits using logic gates 14 1. 01: (Understand) Properties of the PLDs proposed for combinational circuit design circuits for real time applications 14 1. 01: (Understand) Revise the Boolean functions using KMap 1. 01: (Understand) Revise the basic concepts in electrical and electronic devices and digital circuits. 2. CO2: (Understand) Revise the basic concepts in electrical and electronic devices and digital circuits. 3. CO3: (Understand) Summarize the various applications of electrical machines and electronic devices and digital circuits. 3. CO3: (Understand) Summarize the various applications of electrical machines and electronic devices. 4. CO4: (Apply) Apply the laws and concepts to predict the performance of electrical circuit and machines. 5. CO5: (Apply) Dientify the operating characteristics of semiconductor devices, analog and digital circuits. 15 1019PH111 PHYSICS LABORATORY 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits and thermal physics Will nurture the students in all branches of Engineering. 16 U19PH111 PHYSICS LABORATORY 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits using logic gates					5. CO5: (Apply) Apply exception handling concepts to various problems
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13 U19EC102 DIGITAL SYSTEM DESIGN 3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 14 - CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze) Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications 14 - CO4: (Analyze) Simplify the Boolean functions using KMap - CO1: (Understand) Revise the basic concepts in electrical and electronics engineering 14 - CO2: (Understand) Revise the basic concepts in electrical and electronic devices and digital circuits. - CO2: (Understand) Summarize the various applications of electrical machines and electronic devices. 14 - CO3: (Duderstand) Summarize the various applications of electrical machines. - CO3: (Apply) Apply the laws and concepts to predict the performance of electrical circuit and machines. 15 - CO3: (Apply) Interpret and formulate experiments in the areas of optics, mechanics of combinational and Sequential Circuits 16 U19EC102 PIHYSICS LABORATORY - CO3: (Apply) Interpret and formulate experiments in engineering physics. 16 U19EC102 PIGITAL SYSTEM DESIGN - CO3: (Apply) Interpret and formulate experiments in engineering physics. 16 U19EC102 PIGITAL SYSTEM DESIGN - CO3: (Apply) Inplementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates		2 nd Semester	U19EC102		 CO2: (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates
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14 14 <td< td=""><td></td><td></td><td></td><td rowspan="5">BASIC ELECTRICAL AND ELECTRONICS ENGINEERING</td><td>1. CO1: (Understand) Revise the basic concepts in electrical and electronics engineering</td></td<>				BASIC ELECTRICAL AND ELECTRONICS ENGINEERING	1. CO1: (Understand) Revise the basic concepts in electrical and electronics engineering
14 U19EE101 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING 3. CO3: (Understand) Summarize the various applications of electrical machines and electronic devices. 14 U19EE101 BASIC ELECTRICAL AND ELECTRONICS ENGINEERING 3. CO3: (Understand) Summarize the various applications of electrical machines and electronic devices. 15 U19PH111 PHYSICS LABORATORY 1. CO1: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering. 15 U19PH111 PHYSICS LABORATORY 1. CO1: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering. 16 U19PE102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits CO2: (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates 16 U19EC102 DIGITAL SYSTEM DESIGN 3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 16 U19EC102 DIGITAL SYSTEM DESIGN 3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 16 CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze hanalyze the synchronous and asynchronous sequential complex digital circuits for real time applic					 CO2: (Understand) Explain the basic laws governing electric circuits, operation of electrical and electronic devices and digital circuits.
15 U19PH111 PHYSICS LABORATORY 1. CO1: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering. 15 U19PH111 PHYSICS LABORATORY 1. CO1: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering. 16 U19EC102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits 2. CO2: (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuit using logic gates 16 U19EC102 DIGITAL SYSTEM DESIGN 3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 4. CO4: (Analyze) Simplify the Boolean functions using KMap 5. COS: (Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications	14		U19EE101		CO3: (Understand) Summarize the various applications of electrical machines and electronic devices.
15 U19PH111 PHYSICS LABORATORY 1. C01: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nutrure the students in all branches of Engineering. 15 U19PH111 PHYSICS LABORATORY 1. C01: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nutrure the students in all branches of Engineering. 16 U19EC102 DIGITAL SYSTEM DESIGN 1. C01: (Understand) Write the HDL codes for combinational and Sequential Circuits 16 U19EC102 DIGITAL SYSTEM DESIGN 3. C03: (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates 16 U19EC102 DIGITAL SYSTEM DESIGN 3. C03: (Apply) Implementation of the PLDs proposed for combinational circuit design 16 CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze hanalyze the synchronous and asynchronous sequential complex digital circuits for real time applications					 CO4: (Apply) Apply the laws and concepts to predict the performance of electrical circuit and machines.
15 U19PH111 PHYSICS LABORATORY 1. CO1: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering. 16 U19PC102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits 16 U19EC102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits 16 U19EC102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the PLDs proposed for combinational circuit design 16 CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 16 CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 16 CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 16 CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 17 CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 18 CO3: (Analyze) Analyze the synchronous and asynchronous sequential circuits for real time applications					 CO5: (Apply) Identify the operating characteristics of semiconductor devices, analog and digital circuits
15 019PH111 PH5ICS LABORATORY 2. CO2: (Apply) Interpret and formulate experiments in engineering physics. 16 U19EC102 DIGITAL SYSTEM DESIGN 16 U19EC102 DIGITAL SYSTEM DESIGN 16 CO3: (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates 16 U19EC102 DIGITAL SYSTEM DESIGN CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 4. CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications	15			PHYSICS LABORATORY	 CO1: (Understand) Understand the various experiments in the areas of optics, mechanics and thermal physics will nurture the students in all branches of Engineering.
16 U19EC102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits 16 U19EC102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits 16 U19EC102 DIGITAL SYSTEM DESIGN 1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits 16 U19EC102 DIGITAL SYSTEM DESIGN 3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 16 4. CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze) Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications	15		U19PH111		2. CO2: (Apply) Interpret and formulate experiments in engineering physics.
16 U19EC102 DIGITAL SYSTEM DESIGN 2. CO2 : (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates 16 U19EC102 DIGITAL SYSTEM DESIGN 3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 4. CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications					1. CO1: (Understand) Write the HDL codes for combinational and Sequential Circuits
16 U19EC102 DIGITAL SYSTEM DESIGN 3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design 4. CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze) Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications					 CO2 : (Apply) Implementation of simplified Boolean Expressions for designing combinational and sequential circuits using logic gates
 4. CO4: (Analyze) Simplify the Boolean functions using KMap 5. CO5: (Analyze) Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications 	16		U19EC102	102 DIGITAL SYSTEM DESIGN	3. CO3: (Apply) Implementation of the PLDs proposed for combinational circuit design
5. CO5: (Analyze) Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications					4. CO4: (Analyze) Simplify the Boolean functions using KMap
					5. CO5: (Analyze) Analyze the synchronous and asynchronous sequential complex digital circuits for real time applications



SI No.	Year & Semester	Course Code	Course Name	Course Outcome
				1. CO1: (Apply) Use Python shell and IDE to write and debug simple Python programs
				2. CO2: (Apply) Use Python lists, tuple, dictionaries for representing compound data.
17	1 st Year and 2 nd Semester	U19CS112	PYTHON PROGRAMMING LABORATORY	3. CO3: (Apply) Identify appropriate packages and modules for different problems
				4. CO4: (Apply) Choose the appropriate conditional and looping
				5. CO5: (Apply) Create simple applications using python
				1. CO1: (Apply) Apply principles and fundamental concepts of inference theory in proving and testing the logics
				 CO2: (Apply) Use induction techniques, generating functions and basics of counting to solve mathematical statements
18		U19MA203	DISCRETE MATHEMATICS	3. CO3: (Apply) Examine the types of circuits in a graph, the existence of isomorphism and sketch the Euler and Hamiltonian paths and circuits in a graph
				4. CO4: (Apply) Apply the concepts of algebraic structures with one or more binary operations
				5. CO5: (Apply) Apply integrated approach to number theory provide a firm basis.
				 CO1: (Understand) Understand the basics of crystals, their structures and different crystal growth techniques.
				 CO2: (Apply) Identify and solve problems concerning physical parameters related to electrical and superconductivity in different situations.
19		U19PH201	PHYSICS FOR INFORMATION SCIENCE	3. CO3: (Understand) Acquire knowledge on basics of semiconductor physics and its applications in various devices.
				 CO4: (Understand) Gain knowledge on magnetic properties of materials and their suitability in engineering applications
				 COS: (Apply) Interpret the knowledge on behaviour of modern optoelectronic materials and their applications.
			DATA STRUCTURES	 CO1: (Understand) Comprehend the working of linear data structures and identify their applications.
				2. CO2: (Apply) Applyrecursion on specific applications.
20		U19CS201		 CO3: (Understand) Understand the various tree data structures for efficient storage and retrieval of data.
				4. CO4: (Apply) Employ graph data structure for solving real world problems.
				5. CO5: (Apply) Apply suitable methods for efficient data access through hashing.
		U19CS202		1. CO1: (Apply) Use fundamentals of data models and depict a database system
21	2 nd Year and 3 rd Semester			2. CO2: (Apply) Implement relational databases for various business requirements.
			DATABASE MANAGEMENT SYSTEMS	3. CO3: (Apply) Analyse and implement the properties of database.
			OBJECT ORIENTED PROGRAMMING	 CO4: (Apply) Use the application technology for various evaluation techniques and recovery process in database storage.
				5. CO5: (Apply) Use non-structured database systems in application development.
		U19CS203		 CO1: (Apply) Understand and apply the features of object oriented programming paradigm and Java Semantics
				CO2: (Apply) Identify and apply appropriate object oriented concepts of java in problem solving by adhering to Java Coding standards
22				3. CO3: (Apply) Apply concepts of java collections API for the given scenario
				4. CO4: (Apply) Apply multithreading concepts in concurrent application development
				 CO5: (Apply) Use relevant exception-handling mechanisms to ensure uninterrupted flow of application.
				1. CO1: (Analyse) Analyse human interaction for the sustainability of a social eco-system.
				CO2: (Analyse) Examine the impact of pollution and hazardous chemical on environment and human health.
23		U19MC201	ENVIRONMENTAL SCIENCES	 CO3: (Analyse) Inspect the effect of different wastes and chemical on the environment and its mitigation methods.
				4. CO4: (Apply) Identify the application of natural resources for creating a good eco-system.
				5. CO5: (Analyse) Apply the basic concepts to understand various environmental issues.
				1. CO1: (Apply) Apply linear data structures to solve problems.
			DATA STRUCTURES LABOROTARY	2. CO2: (Apply) Implement the concept of trees and graphs using non-linear data structures.
24		U19CS211		 CO3: (Apply) Select suitable tree algorithms for efficient data storage and retrieval with better time complexity.
				 CO4: (Apply) Apply linear and non-linear data structure and develop a real time software application.
				5. CO5: (Apply) Apply the different hashing data structure for efficient data storage.



SI No.	Year & Semester	Course Code	Course Name	Course Outcome
				1. CO1: (Apply) Develop ER model for the given problem.
				2. CO2: (Apply) Apply appropriate SQL constraints to a business case.
25		U19CS212	DATABASE MANAGEMENT SYSTEMS LABORATORY	 CO3: (Apply) Utilize relational database using simple and complex queries in Structured Query Language (SQL).
				4. CO4: (Apply) Formulate procedural language queries (PL/SQL) to the given scenario.
	2 nd Year and			5. CO5: (Apply) Apply database connectivity concepts in an application development scenario.
	3 rd Semester			1. CO1: (Apply) Use JRE, JDK and Java-IDE's
				2. CO2: (Apply) Select the required Object oriented mechanism
26		U19CS213	OBJECT ORIENTED PROGRAMMING LABORATORY	3. CO3: (Apply) Use relevant exception-handling mechanisms exception
				 CO4: (Apply) Model the real world problems for efficient outcomes using concurrency concepts
				5. CO5: (Apply) Apply concepts of java collections API for the given scenario
				1. CO1: (Apply) Apply the basic probability concepts for random variables and random experiments
				2. CO2: (Analyze) Analyze various standard distributions applicable to engineering which can describe real life phenomenon
27		U19MA206	PROBABILITY AND	CO3: (Analyze) Analyze the functions of two dimensional random variables through its probability values
			51/110/105	4. CO4: (Apply) Apply statistical tests in testing of hypothesis.
				5. CO5:(Analyze) Estimate the values of parameters based on measured empirical data that
			OPERATING SYSTEMS	1. CO1: (Understand) Use the appropriate concepts of operating system for resource
				2. CO2: (Understand) Choose the relevant process and thread concepts for solving
28		U19CS204		 Synchronization problems CO3: (Understand) Compare different types of page replacement algorithms in memory
		01903204		management 4. CO4: (Understand) Experiment the performance of different algorithms used in
				management of memory, file and I/O and selects the appropriate one. 5. CO5: (Understand) Demonstrate different device and resource management techniques for
		U19IT201		memory utilization with security mechanisms 1. CO1: (Apply) Apply appropriate software engineering model for a given development
				scenario. 2. CO2· (Apply) Apply appropriate requirement engineering techniques for real time projects
29			SOFTWARE ENGINEERING	3. CO3: (Apply) Compare and choose the suitable design models for the given application
25				scenario. 4 CO4: (Apply) Modelling the application based on the customer requirements
	- 1			5 COS: (Apply) Apply the testing principles to software project development
	2 nd Year and 4 th Semester	U19CS205	DESIGN AND ANALYSIS OF ALGORITHMS	1 CO1: (Inderstand) Estimate the time and space complexities of algorithms
				2 CO2: (Apply) Apply algorithm analysis techniques for a given algorithms
30				2. CO2: (Apply:) Apply algorithm analysis techniques for a given algorithms.
50				CO1. (Analyse Analyse dimension and the shares to find the sharest rath
				 CU4: (Apply) Apply Various graph traversal techniques to find the shortest path. CO5: (Understand) Compare the time and space complexities of different types of
				algorithms.
				1. CO1: (Understand) Understand the characteristics of the Constitution of India
			INDIAN CONSTITUTION AND TRADITION	 CO2: (Understand) Understand the fundamental rights and duties CO3: (Understand) Understand the federal structure and distribution of legislative and
31		U19MC202		financial powers
				4. CO4: (Understand) Understand the constitutional amendments and emergency provisions
				personal freedom
				1. CO1: (Apply) Use different LINUX commands and implement shell programming.
				2. CO2: (Apply) Simulate various system calls used for process and file management.
32		U19CS214	OPERATING SYSTEMS LABORATORY	 CO3: (Apply) Implement process synchronization techniques and inter process communication mechanisms.
				 CO4: (Analyze) Analyze various system programs under Linux to make use of operating system concepts.
				CO5: (Evaluate) Evaluate the performance of different file allocation strategies and select the appropriate one.



SI No.	Year & Semester	Course Code	Course Name	Course Outcome
				1. CO1: (Analyze) Analyze problem statements to identify the requirements of real time scenarios.
				2. CO2: (Apply) Examine project scope, objectives and perform project planning.
33		U19IT211	SOFTWARE ENGINEERING LABORATORY	3. CO3: (Create) Develop software design solutions for the given problem domain.
				4. CO4: (Apply) Identify the deliverables in various phases of SDLC.
	2 nd Year and			5. CO5: (Apply) Apply various testing techniques on the deliverables.
	4 th Semester			1. CO1: (Apply) Inculcate rhetorical skills to build confidence level.
				2. CO2: (Apply) Creative employability attribution for campus interview.
34		U19EM201	VERBAL AND SOFT SKILLS	3. CO3: (Apply) Improve verbal skills through vocabularies.
				4. CO4: (Apply) Develop comprehending ability in various contexts.
				5. CO5: (Apply) Improve sentence formation by collaborative learning methods.
				1. CO1: (Understand) Choose appropriate instruction set architecture and addressing modes used in a processor
				2. CO2: (Understand) Apply the knowledge of arithmetic operations to perform calculations.
35		U19IT301	COMPUTER ARCHITECTURE	3. CO3: (Understand) Understand Design and analyze pipelined control units.
				4. CO4: (Understand) Understand parallel processing architectures.
				5. CO5: (Understand) Understand performance of memory systems.
			INTERNET PROGRAMMING	1. CO1: (Understand) Explain the history of the internet and related internet concepts
				2. CO2: (Apply) Create basic website using HTML and CSS
36		U19CS301		3. CO3: (Apply) Design and implement server side programs using Servlets and JSP
				4. CO4: (Understand) Describe the representation of data using XML Technology
				5. CO5 :(Understand) Demonstrate the working of MVC pattern using Spring, Hibernate and Maven Technologies
		U19CS302		1. CO1: (Understand) Discuss the various Artificial Intelligence (AI) methods and describe their foundations.
				2. CO2: (Apply) Apply the various search techniques to real-time problems.
37			ARTIFICIAL INTELLIGENCE	3. CO3: (Apply) Use the automated reasoning techniques to real world problems.
				4. CO4: (Understand) Explain the various design software agents to solve a problem.
	3 rd Year and			5. CO5: (Apply) Apply the various learning techniques to real world application.
	5 th Semester		COMPUTER NETWORKS	1. CO1: (Apply) Identify the functionalities of various protocols operating at each layer of OSI reference model.
		U19IT303		CO2: (Understand) Describe the working of LAN, WAN, MAN technologies and different network topologies.
38				3. CO3: (Understand) Explain the working of IP layer and its routing algorithms.
				4. CO4: (Understand) Identify the components required to build different types of networks.
				5. CO5: (Apply) Demonstrate the working of principles security algorithms and application layer protocols for reliable data transmission.
				1. CO1: (Apply) Use Cascading style sheets to implement a variety of presentation effects in HTML including explicit positioning of elements
		U19CS311	INTERNET PROGRAMMING LABORATORY	2. CO2: (Apply) Create dynamic web pages by incorporating java script in HTML
39				3. CO3: (Apply) Develop interactive web pages using server side programming languages
				4. CO4: (Apply) Construct web pages using XML
				5. CO5: (Apply) Design web pages using web services
				1. CO1: (Apply) Develop skills to use simulation tools.
			.9IT311 COMPUTER NETWORKS LABORATORY	2. CO2: (Apply) Develop client server applications using socket programming.
40		U19IT311		3. CO3: (Apply) Implement of data link layer protocols.
				4. CO4: (Apply) Implement of network layer protocols.
				5. CO5: (Analyze) Analyze the performance of network protocols.



SI No.	Year & Semester	Course Code	Course Name	Course Outcome
				1. CO1: (Understand)Understand the basic concepts of Information Retrieval
				2. CO2: (Understand)Understand data modelling and Retrieval Evaluation.
41		U19CS501	INFORMATION RETRIEVAL	3. CO3: (Understand)Develop the fundamental understanding of Classification and Clustering in Information Retrieval
				4. CO4: (Apply)Apply the concepts of web retrieval and crawling for a search engine
				5. CO5: (Apply) Implement the Recommendation techniques for recommender system.
				1. CO1: (Understand)Understand basics of data warehousing
				2. CO2: (Understand)Understand basics of Data Mining
42		U19CS502	DATA WAREHOUSING AND MINING	 CO3: (Apply)Apply frequent pattern and association rule mining techniques for data analysis
				4. CO4: (Apply)Apply appropriate classification techniques for data analysis
				 CO5: (Apply)Apply the concepts of Data mining, Classification and Clustering for applications using weka tool
				1. CO1: (Understand) Understand Java Language and Fundamentals
				2. CO2: (Understand) Understand object oriented concepts and functional style data processing
43		U19CS512	ADVANCED JAVA PROGRAMMING	3. CO3: (Understand) Understand the java libraries and know effective programming with streams
				4. CO4: (Understand) Understand the enhanced java features.
	Professional			5. CO5: (Apply) Create a system based application using AWT and Swing.
	Elective I		AGILE SOFTWARE DEVELOPMENT	 CO1: (Understand) Understand the theoretical aspects as well as practical understanding of agile software development practices and how small teams can apply them to create high- quality coftware
				2. CO2: (Understand) Understand the agile scrum methodology, feature driven programming with scrum framework.
44		U19IT501		 CO3: (Understand) Understand the refactoring techniques and pair programming in project management.
				 CO4: (Apply) Apply the background of testing in an agile project and the roles and responsibilities of a typical agile testing team
				5. CO5: (Apply) Use techniques and tools for improving team collaboration and software quality
		U19IT508		1. CO1: (Understand) Describe the characteristics, challenges and applications of mobile communication
				2. CO2: (Understand) Explain the MAC, Network, Transport Layer level schemes of mobile communication
45			MOBILE COMPUTING	3. CO3: (Understand) Explain the architecture, design considerations of various telecommunication systems
				4. CO4: (Understand) Understand the various Wireless LAN standards
				5. CO5: (Apply) Apply the security system of Mobile communication
			PARALLEL AND DISTRIBUTED COMPUTING	 CO1: (Understand) Understand the features and fundamentals of parallel computing paradigms
				2. CO2: (Understand) Understand the Parallel Algorithmic Models.
46		U19IT509		3. CO3: (Understand) Learn the performance of parallel systems and parallel programming.
				 CO4: (Understand) Demonstrate the design principles in distributed systems and the architectures for distributed systems.
				5. CO5: (Apply) Analyze fault tolerance and recovery in distributed systems and algorithms
				1. CO1: (Apply) Construct automata, regular expression for any pattern.
			AUTOMATA THEORY AND COMPILER DESIGN	2. CO2: (Apply) Design Turing Machines for any Language
47		U19CS303		3. CO3: (Understand) Understand the different phases of compiler.
				 CO4: (Apply) Apply different parsing algorithms to develop the parsers for a given grammar.
	3 rd Year and			CO5: (Understand) Learn to implement code optimization techniques and a simple code generator.
	6 th Semester			 CO1: (Understand) Interpret the various components of cloud computing based on its business perspective.
		U19IT305 CLOUD COMPUTING	CLOUD COMPUTING	2. CO2: (Understand) Demonstrate the various services that are offered in cloud computing.
48	3			 CO3: (Apply) Develop various applications using various clouds technology such as Hypervisors, Virtualization, and Multitenant software.
				4. CO4: (Understand) Summarize how Virtualization can solve the problems of distributing a CPU among virtual machines.
			5. CO5: (Apply) Apply the security models during the deployment of applications on the cloud.	



SI No.	Year & Semester	Course Code	Course Name	Course Outcome
				1. CO1: (Understand) Understand the basic concepts of Machine Learning
49				2. CO2: (Understand) Understand the concepts behind supervised learning and their appropriateness
		U19CS304	MACHINE LEARNING	3. CO3: (Understand) Understand the concepts behind unsupervised learning and their appropriateness
				4. CO4: (Apply) Choose and apply appropriate graphical model for a given real world problem
				CO5: (Apply) Identify applications suitable for different types of machine learning with suitable justification.
				 CO1: (Apply) Configure various virtualization tools such as Virtual Box, VMware workstation.
				2. CO2: (Apply) Design and deploy a web application in a cloud environment.
50	3 rd Year and 6 th Semester	U19IT313	CLOUD COMPUTING LABORATORY	3. CO3: (Apply) Learn CloudSim to simulate a cloud environment to implement new schedulers.
	o Scillester			 CO4: (Apply) Install and use a generic cloud environment that can be used as a private cloud
				5. CO5: (Apply) Demonstrate the use of Map and Reduce tasks
				1. CO1: (Apply) Understand the implementation procedures for the machine learning algorithms
				2. CO2: (Apply) Design Java/Python programs for various Learning algorithms.
51		U19CS312	MACHINE LEARNING LABORATORY	3. CO3: (Apply) Apply appropriate data sets to the Machine Learning algorithms
				4. CO4: (Apply) Apply supervised Learning algorithms to solve real world problems
				5. CO5: (Apply) Apply unsupervised Learning algorithms to solve real world problems
				1. CO1: (Understand) Understand the concepts of Data science and Analytics
			DATA ANALYTICS	2. CO2: (Apply) Apply the Preprocessing and Visualization in applications
52		U19CS503		3. CO3: (Apply) Implement the learning concepts and Machine Models
				4. CO4: (Apply) Apply the classification and clustering ideas in applications
				5. CO5: (Apply) Apply the system architecture in case studies
		U19CS504		1. CO1: (Understand) Understand the concepts of Recognition Methodology
53				2. CO2: (Apply) Implement the concepts of segmentation for binary Image
			COMPUTER VISION	3. CO3: (Apply) Implement the concepts of Area extraction and region Analysis for binary Image
			ADVANCED DATA STRUCTURES AND ALGORITHMS	4. CO4: (Understand) Understand the various object Model
				5. CO5: (Apply) Known about the general frameworks and knowledge based vision
		U19CS513		1. CO1: (Understand) Understand algorithm analysing techniques and asymptotic notation.
	Professional Elective II			2. CO2: (Understand) Understand various sorting Technique.
54				3. CO3: (Understand) Understand elementary data structures.
				4. CO4: (Understand) Understand various advance data structures.
				5. CO5: (Understand) Understand advanced algorithm design technique.
			R PROGRAMMING	1. CO1: (Understand) Understanding the basics of R Programming
				2. CO2: (Apply) Apply functions to visualize the data
55		U19CS514		3. CO3: (Understand) understanding the concept for data visualization and statistics and probability
				4. CO4: (Analyze) Analysing the data and create the data modelling.
				5. CO5: (Apply) Create the custom plotting graph.
				1. CO1: (Understand) Understand all the activities, process and techniques carried out in testing process.
		U19IT502	502 SOFTWARE TESTING	2. CO2: (Understand) Understand how to prepare test planning based on the test document.
56				3. CO3: (Apply) Identify all the testing levels carried out during the testing phase of an software
				4. CO4: (Understand) Understand the testing policies and the activities of specialized testing for object oriented systems.
				 CO5: (Apply) Apply the process of automation testing approach and different test suites for software.



SI No.	Year & Semester	Course Code	Course Name	Course Outcome
				 CO1: (Understand) Understand the fundamentals of wireless sensor networks and its application to critical real time scenarios.
				2. CO2: (Understand) Learn the different types of MAC protocols.
57		U19IT510	AD HOC SENSOR NETWORK	3. CO3: (Understand) Be exposing to the TCP issues in ad hoc networks.
				4. CO4: (Understand) Be familiar with different types of ad hoc routing protocols.
				5. CO5: (Apply) Apply the Quality and Energy Management in building WSN network.
				1. CO1: (Understand) Discuss the basics of information security
				2. CO2: (Understand) Illustrate the legal, ethical and professional issues in information security
58		U19IT511	INFORMATION SECURITY	3. CO3: (Apply) Demonstrate the various aspects in data security
				4. CO4: (Understand) Explain various standards in the Information Security System
				5. CO5: (Apply) Design and implementation of security techniques
				1. CO1: (Apply) Apply different conversation techniques in day to day communication
				2. CO2: (Apply) Practice effective listening techniques during conversations.
59	Professional Elective II	U19HS111	BUSINESS ENGLISH	3. CO3: (Apply) Develop good reading practice
				4. CO4: (Apply) Report ideas and concepts in an effective manner
				5. CO5: (Apply) Articulate effectively during discussions and presentations
			BASIC JAPANESE	1. CO1: (Understand) Recognize and write Japanese alphabet
				2. CO2: (Understand) Speak using basic sounds of the Japanese language
60		U19HS112		 CO3: (Apply) Apply appropriate vocabulary needed for simple conversation in Japanese language
				4. CO4: (Apply) Apply appropriate grammar to write and speak in Japanese language
				5. CO5: (Apply) Comprehend the conversation and give correct meaning
		U19HS113		1. CO1: (Understand) Recognize and write German alphabet
61				2. CO2: (Understand) Speak using basic sounds of the German language
			BASIC GERMAN	 CO3: (Apply) Apply appropriate vocabulary needed for simple conversation in German language
				4. CO4: (Apply) Apply appropriate grammar to write and speak in German language
				5. CO5: (Apply) Comprehend the conversation and give correct meaning
		U19IC301	ETHICAL HACKING	 CO1: (Apply) Install, configure, use and manage hacking software on a closed network environment
62				2. CO2: (Apply) Identify tools and techniques to carry out a penetration testing.
				3. CO3: (Apply) Assess an environment using foot printing.
		U19IC302	Introduction to PAAS	1. CO1: (Understand) Understand basics of Salesforce
63				2. CO2: (Apply) Experiment with SFDC administration and customization
				3. CO3: (Understand) Understand SFDC security
	Industry		ANGULAR JS	 CO1: (Apply) Understand and apply the concepts of object oriented Angular scripting languages.
64	Oriented	U19IC303		2. CO2: (Apply)Identify and apply Angular Components.
	Course			3. CO3: (Apply) Apply concepts of Angular Derivatives.
			TENSORFLOW	1. CO1: (Apply) Apply the basic concepts of data manipulation
65		U19IC304		2. CO2: (Apply) Experiment with various tensor Operations and Functions
				3. CO3: (Apply) Make use of the Classification techniques
			GROOVY ON GRAILS	1. CO1: (Understand) Work with Groovy strings, closures, and collections
66		U19IC305		2. CO2: (Apply) Build unit and functional tests for web applications
				3. CO3: (Apply) Select Grails plugins to add functionality



SI No.	Year & Semester	Course Code	Course Name	Course Outcome
			KUBERNETES & DOCKER	1. CO1: (Understand) Understand the basics of Kubernetes
67		U19IC306		2. CO2: (Apply) Create Kubernetes clusters and deploy it
				3. CO3: (Understand) Understand services and scheduling
			REACT	 CO1: (Apply) Understand and apply the concepts of React scripting languages.
68		U19IC307		2. CO2: (Apply) Identify lifecycle and apply React Components.
				3. CO3: (Apply) Apply concepts of event and SASS
	Industry Oriented Course	U19IC308	JAVA FRAMEWORKS	1. CO1: (Apply) Determine the object oriented programming concepts
69				2. CO2: (Apply) Simulate the mathematical functionality with the help of operators
				3. CO3: (Apply) Develop Web applications using Framework
		U19IC309	CLOUD COMPUTING	1. CO1: (Understand) Understand the basic concepts of Cloud Computing
70				2. CO2: (Apply) Apply Storage and Networking Concepts in Cloud.
				3. CO3: (Apply) Apply Scaling and Security in clouds
		U19IC311 INTR		1. CO1: (Apply) Determine the division of network functionalities into layers
71			INTRODUCTION TO NETWORK ADMINISTRATION	2. CO2: (Apply) Experiment about the connection techniques and their configurations
				3. CO3: (Apply) Experiment about the WAN and infrastructure services