



**ACHARYA INSTITUTE OF TECHNOLOGY**  
**Department of Computer Science and Engineering**  
Bengaluru-560107

**COURSE OUTCOMES (2018-19)**

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS32	COURSE ID	C202
<b>COURSE TITLE</b>		<b>Analog and Digital Electronics</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
<b>C202.1</b>		Illustrate the working of FET, opamp, combinational & sequential logic circuits, D/A & A/D converters.					
<b>C202.2</b>		Design and develop the combinational circuits applying Boolean equation minimization techniques and write HDL code to simulate the same.					
<b>C202.3</b>		Design and develop the combinational circuits applying Boolean equation minimization techniques and write HDL code to simulate the same					
<b>C202.4</b>		Write the HDL code to simulate working of flip-flops, registers and counters					

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS33	COURSE ID	C203
<b>COURSE TITLE</b>		<b>Data Structures and Applications</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
<b>C203.1</b>		Describe various linear and non-linear data structures.					
<b>C203.2</b>		Choose appropriate data structure to be applied to specific problem definition					
<b>C203.3</b>		Apply basic operations like sorting, searching, insertion, deletion, traversing mechanism etc. on various data structures.					
<b>C203.4</b>		Write programs for applications of Data structures in a high-level language.					



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DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS34	COURSE ID	C204
COURSE TITLE		Computer Organization					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS After studying this course, students will be able to:					
C204.1		Describe the basic structure of computer, I/O organization, memory, performance issues, bus standards & embedded systems.					
C204.2		Illustrate the working of fast adders' multipliers, division, floating point units hardwired & micro programmed control units.					
C204.3		Illustrate the working of stacks, queues, memory, I/O data transfers, memory management techniques, interrupt handling mechanisms, control signal generators using assembly language programs					
C204.4		Design simple memory units, I/O interfaces & control units.					

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS35	COURSE ID	C205
COURSE TITLE		Unix Shell Programming					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS After studying this course, students will be able to:					
C205.1		Understand the UNIX environment and its basic commands utility.					
C205.2		Demonstrate functioning of vi editor, file attribute manipulation and UNIX filter commands.					
C205.3		Apply Regular expression to perform pattern matching using UNIX utilities					
C205.4		Analyze Shell and Process life cycles.					
C205.5		Implement Shell scripts and Perl scripts for simple applications.					

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CS36	COURSE ID	C206
COURSE TITLE		Discrete Mathematical Structures					



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

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CSL37	COURSE ID	C207
COURSE TITLE		<b>Analog and Digital Electronics Laboratory</b>					
COURSE OUTCOME NO	COURSE OUTCOME STATEMENTS After studying this course, students will be able to:						
C207.1	Describe operation of opamp application circuits, and combinational logic circuits						
C207.2	Design various combinational logic circuits, data processing circuits, counters and D/A converters						
C207.3	Demonstrate the simulation of various analog and digital circuits						

DEPARTMENT	CS	SEMESTER	3	COURSE CODE	17CSL38	COURSE ID	C208
COURSE TITLE		<b>Data Structures Laboratory</b>					
COURSE OUTCOME NO	COURSE OUTCOME STATEMENTS After studying this course, students will be able to:						
C208.1	Describe various linear and non-linear data structures						
C208.2	Choose the appropriate data structure for solving real world problems.						
C208.3	Develop and analyze various types of data structures and their applications						



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DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS42	COURSE ID	C212
COURSE TITLE		<b>Object Oriented Concepts</b>					
COURSE OUTCOME NO		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
C212.1		Explain the fundamentals of Object oriented programming and various constructs of Java programming language.					
C212.2		Implement robust console based and GUI based java programs with suitable object oriented concepts for a given scenario					
C212.3		Demonstrate user-defined classes with thread capability and concurrent issues with thread programming.					
C212.4		Develop GUI application using Applets and Swings.					

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS43	COURSE ID	C213
COURSE TITLE		<b>Design &amp; Analysis of Algorithms</b>					
COURSE OUTCOME NO		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
C213.1		Illustrate about various concepts of algorithms.					
C213.2		Write the different types of algorithms					
C213.3		Apply the functionality of various algorithms to solve problems.					
C213.4		Analyze the working methodology of different algorithms.					

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS44	COURSE ID	C214
COURSE TITLE		<b>Microprocessor &amp; Microcontroller</b>					



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

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS45	COURSE ID	C215
<b>COURSE TITLE</b>		<b>Software Engineering</b>					
COURSE OUTCOME NO	COURSE OUTCOME STATEMENTS After studying this course, students will be able to:						
C215.1	Illustrate the process of requirement gathering, classification, specification and validation in software engineering process.						
C215.2	Demonstrate an ability to design the software by applying software engineering design principles.						
C215.3	Apply design patterns, agile methodologies for development of software and also use tools such as SRUM, UML for designing						
C215.4	Illustrate project planning, cost estimation, quality management techniques and be aware of ethics.						

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CS46	COURSE ID	C216
<b>COURSE TITLE</b>							
COURSE OUTCOME NO	COURSE OUTCOME STATEMENTS After studying this course, students will be able to:						
C216.1	Illustrate the operation of various wireless network technologies						



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

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CSL47	COURSE ID	C217
<b>COURSE TITLE</b>		<b>Design and Analysis of Algorithms Lab</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
<b>C217.1</b>		Design algorithms using appropriate design techniques.					
<b>C217.2</b>		Develop variety of algorithms such as sorting, graph related, combinatorial, etc., in a high level language.					
<b>C217.3</b>		Analyze and compare the performance of algorithms using language features.					
<b>C217.4</b>		Apply and implement learned algorithm design techniques and data structures to solve real-world problems.					

DEPARTMENT	CS	SEMESTER	4	COURSE CODE	17CSL48	COURSE ID	C218
<b>COURSE TITLE</b>		<b>Microprocessor and Microcontroller Lab</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
<b>C218.1</b>		Demonstrate the ability to write, assemble, upload, run, debug, download results using relevant toolchain/IDE [MASM toolchain in case 80x86 or Keil IDE in case of ARM] and report the findings.					



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

<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>5</b>	<b>COURSE CODE</b>	<b>15CS51</b>	<b>COURSE ID</b>	<b>C301</b>
<b>COURSE TITLE</b>		<b>Management and Entrepreneurship (15CS51)</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
<b>C301.1</b>		Describe the concepts of managerial skills that includes the functional areas of management, preparation of project, + ERP					
<b>C301.2</b>		Illustrate the stages in entrepreneurial process, industrial policies to set up small scale industry and intellectual property rights.					
<b>C301.3</b>		Analyze the different management functions and entrepreneurial process in real time scenarios					
<b>C301.4</b>		Understand the importance of intellectual property rights and relate the institutional support					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>5</b>	<b>COURSE CODE</b>	<b>15CS52</b>	<b>COURSE ID</b>	<b>C302</b>
<b>COURSE TITLE</b>		<b>Computer Networks</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b> <b>After studying this course, students will be able to:</b>					
<b>C302.1</b>		Illustrate the working of different protocols set in application, transport and network layer.					
<b>C302.2</b>		Interpret the various services provided by computer network and its use.					
<b>C302.3</b>		Explain the structure and components of different types of network.					
<b>C302.4</b>		Describe the features of wireless, mobile and multimedia networking					



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DEPARTMENT	CS	SEMESTER	5	COURSE CODE	15CS53	COURSE ID	C303
COURSE TITLE		<b>Database Management Systems</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C303.1		<b>Define Database Objects, E-R model and relational model</b>					
C303.2		Explain Normalization and basic Structural Query Language (SQL)					
C303.3		Write the SQL commands, Normalization Algorithms and Transaction Processing					
DEPARTMENT	CS	SEMESTER	5	COURSE CODE	15CS54	COURSE ID	C304
COURSE TITLE		<b>Automata Theory and Computability</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C304.1		<b>Recognize different types of automata models from the verbal description of the real system.</b>					
C304.2		Design any applications in terms of appropriate deterministic or nondeterministic Models.					
C304.3		Apply different methods of formal language like Regular Expressions and context free grammar in solving problems on mathematical programming					
C304.4		Analyze and solve many problems with most powerful abstract machine with strategic considerations and decision making, classify decidable and undecidable problems of formal languages.					
DEPARTMENT	CS	SEMESTER	5	COURSE CODE	15CS56	COURSE ID	C306
COURSE TITLE		<b>Artificial Intelligence</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C306.1		<b>Illustrate various techniques for solving issues related to knowledge representation and Game playing</b>					
C306.2		Describe the various searching, reasoning and learning techniques for AI based problems.					
C306.3		Solve the knowledge representation and Game playing problems by using appropriate AI algorithms					





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<b>C306.4</b>		Apply appropriate searching, reasoning and learning algorithms for solving various problems.					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>5</b>	<b>COURSE CODE</b>	<b>15CSL57</b>	<b>COURSE ID</b>	<b>C307</b>
<b>COURSE TITLE</b>		<b>Computer Networks Lab</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C307.1</b>		<b>Demonstrate the working principle of various communication protocols, mobile networks, routing algorithms, concept of data transfer between nodes, error detection, data encryption and decryption algorithm, congestion control algorithm.</b>					
<b>C307.2</b>		Implement networking protocols using NS2 / NS3 and networking concepts using java language.					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>5</b>	<b>COURSE CODE</b>	<b>15CSL58</b>	<b>COURSE ID</b>	<b>C308</b>
<b>COURSE TITLE</b>		<b>Database Management Systems Lab</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C308.1</b>		<b>Write SQL queries for manipulation of data</b>					
<b>C308.2</b>		Design suitable applications using databases					
<b>C308.3</b>		Implement SQL queries and applications, document the results.					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>6</b>	<b>COURSE CODE</b>	<b>15CS61</b>	<b>COURSE ID</b>	<b>C311</b>
<b>COURSE TITLE</b>		<b>Cryptography, Network Security and Cyber Law</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C311.1</b>		<b>Illustrate concepts of cryptography, security protocols, cyber security, and need for cyber law.</b>					
<b>C311.2</b>		Apply the knowledge of various cryptographic algorithms to secure information.					
<b>C311.3</b>		Apply key management techniques to ensure authentication					
<b>C311.4</b>		Analyze various network security threats, cyber-attacks and its counter measures in computer network					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>6</b>	<b>COURSE CODE</b>	<b>15CS62</b>	<b>COURSE ID</b>	<b>C312</b>
<b>COURSE TITLE</b>		<b>Computer Graphics &amp; Visualization</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					



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<b>C312.1</b>	<b>Design algorithms for 2D and 3D graphics primitives, attributes and geometric transformations.</b>						
<b>C312.2</b>	Analyze different input interaction devices, different graphics primitives and animations in Open GI Graphics system						
<b>C312.3</b>	Apply concepts of polygon fill areas, area detection, clipping and visible surface detection, Geometric transformations on 2D and 3D primitives and for viewing and illumination						
<b>C312.4</b>	Illustrate Geometric transformations on both 2D and 3D objects.						
<b>C312.5</b>	Write input interactions and animation programs in Open GL Graphics system						
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>6</b>	<b>COURSE CODE</b>	<b>15CS63</b>	<b>COURSE ID</b>	<b>C313</b>
<b>COURSE TITLE</b>		<b>System Software and Compiler Design</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C313.1</b>	<b>Interpret various types of system software such as compilers, assemblers, loaders, linkers and macro processors.</b>						
<b>C313.2</b>	Design any type of scanners & parsers by using different parsing techniques for the given specifications.						
<b>C313.3</b>	Illustrate the ability to write syntax directed translations of simple statements and the working of procedure calls.						
<b>C313.4</b>	Illustrate Implement Transition diagrams, intermediate code, target code, flow graphs for the given input program and generate object code.						
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>6</b>	<b>COURSE CODE</b>	<b>15CS64</b>	<b>COURSE ID</b>	<b>C314</b>
<b>COURSE TITLE</b>		<b>Operating Systems</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C314.1</b>	<b>Identify various OS techniques and protection mechanism.</b>						
<b>C314.2</b>	Apply the concepts of process scheduling and multithreading on various issues of process management.						
<b>C314.3</b>	Demonstrate Process synchronization & deadlocks						
<b>C314.4</b>	Analyze the different approaches of memory and storage management.						



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DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CS65	COURSE ID	C315
COURSE TITLE		<b>Operation Research</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C315.1		<b>Illustrate various OR problem-solving techniques</b>					
C315.2		Apply OR technique to solve the given problem.					
C315.3		Analyze OR method applicable to given problem.					
C315.4		Formulate OR model suitable to the specific problem					
DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CS66	COURSE ID	C316
COURSE TITLE		<b>Python Application Programming</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C316.1		<b>Illustrate Python programming concepts like conditional execution, data structures, and regular expressions.</b>					
C316.2		Write Python code for concepts like classes and objects, iterations, strings, file handling etc.					
C316.3		Implement a Python application using web services and database concepts.					
C316.4		Design solutions to given problems using Python programming language					
DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CSL67	COURSE ID	C317
COURSE TITLE		<b>System Software &amp; Operating Systems Lab</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C317.1		<b>Demonstrate token generation using Lex tool</b>					
C317.2		Demonstrate parsing using Yacc tool					
C317.3		Implement operating system concept like scheduling, deadlock and page replacement algorithm					
C317.4		Demonstrate technical information by means of oral representation.					
DEPARTMENT	CS	SEMESTER	6	COURSE CODE	15CSL68	COURSE ID	C318
COURSE TITLE		<b>CGV Lab with mini project</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C318.1		<b>Implement computer graphics primitives and algorithms using OpenGL API's</b>					



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<b>C318.2</b>		Write programs on 2D/3D objects using modeling, transformation and illumination concepts.					
<b>C318.3</b>		Design graphics applications using OpenGL API's.					
<b>C318.4</b>		Demonstrate technical information by means of oral presentations and written reports as a team.					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>7</b>	<b>COURSE CODE</b>	<b>15CS71</b>	<b>COURSE ID</b>	<b>C401</b>
<b>COURSE TITLE</b>		<b>Web Technology and its Applications</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C401.1</b>		<b>Illustrate web programming concepts like various HTML elements, stylesheets, client-server model and exception handling.</b>					
<b>C401.2</b>		Implement mark-up language code for presenting the information in web pages.					
<b>C401.3</b>		Write client-side scripts to create interactive web pages.					
<b>C401.4</b>		Design server-side programs to generate dynamic web pages.					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>7</b>	<b>COURSE CODE</b>	<b>15CS72</b>	<b>COURSE ID</b>	<b>C402</b>
<b>COURSE TITLE</b>		<b>Advanced Computer Architecture</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C402.1</b>		<b>Illustrate the concepts of parallel computing like Super Scalar, VLIW , and multi-core and multi-cpu systems.</b>					
<b>C402.2</b>		Interpret various Bus, memory and processor technologies pipelines, dynamic scheduling, branch prediction, caches, and vector processors.					
<b>C402.3</b>		Compare different hardware and software parallel architectures					
<b>C402.4</b>		Design basic and intermediate RISC pipelines, including the instruction set, data paths, and ways of dealing with pipeline hazards					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>7</b>	<b>COURSE CODE</b>	<b>15CS73</b>	<b>COURSE ID</b>	<b>C403</b>
<b>COURSE TITLE</b>		<b>Machine Learning</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					



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<b>C403.1</b>	<b>Describe the terminologies, definitions and basic concepts of machine learning</b>						
<b>C403.2</b>	Explain the different supervised and unsupervised machine learning algorithms in detail						
<b>C403.3</b>	Apply the machine learning algorithms on a given dataset.						
<b>C403.4</b>	Design the different machine learning applications using the state of art Python libraries/tools.						
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>7</b>	<b>COURSE CODE</b>	<b>15CS74</b>	<b>COURSE ID</b>	<b>C404</b>
<b>COURSE TITLE</b>		<b>Information and Network Security</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C404.1</b>	<b>Discuss the terminologies &amp; concepts of cryptography, hash function, zero knowledge mechanism, public key management and cryptography protocols.</b>						
<b>C404.2</b>	Describe Ciphers, hash Function, random number generation, key management, and different cryptography applications.						
<b>C404.3</b>	Apply the cryptographic techniques to secure the data.						
<b>C404.4</b>	Compare cryptographic techniques & generators to secure the data						
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>7</b>	<b>COURSE CODE</b>	<b>15CS75</b>	<b>COURSE ID</b>	<b>C405</b>
<b>COURSE TITLE</b>		<b>Storage Area Networks</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C405.1</b>	<b>Discuss various concepts and terminology of SAN like elements of data center, virtualization.</b>						
<b>C405.2</b>	Identify various RAID Levels, Components of intelligent storage system, Fibre Channel SAN.						
<b>C405.3</b>	Explain the concepts of NAS, CAS, cloud computing & techniques for securing & managing Storage Infrastructure.						
<b>C405.4</b>	Describe various backup, archive & replication methodology						
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>7</b>	<b>COURSE CODE</b>	<b>15CSL76</b>	<b>COURSE ID</b>	<b>C406</b>
<b>COURSE TITLE</b>		<b>Machine Learning Lab</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C406.1</b>	<b>Describe the different supervised and unsupervised machine learning algorithms</b>						



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C406.2		Implement the machine learning algorithms on appropriate datasets using Python language					
C406.3		Calculate the target values, accuracy, precision and f1-score of different algorithms					
DEPARTMENT	CS	SEMESTER	7	COURSE CODE	15CSL77	COURSE ID	C407
COURSE TITLE		<b>Web Technology Laboratory with mini project</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C407.1		<b>Understand the concepts of Markup languages, Scripting languages and Database connectivity</b>					
C407.2		Write a program using client and server side scripting language for developing static and dynamic web pages					
C407.3		Develop client-server applications using web technologies.					
DEPARTMENT	CS	SEMESTER	7	COURSE CODE	15CSP78	COURSE ID	C408
COURSE TITLE		Project Work Phase -1					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					
C408.1		<b>Map the technical knowledge acquired in the previous semesters for solving real world problems.</b>					
C408.2		Apply new technologies & design techniques (platform, database, etc.) concerned for devising a solution for a given problem statement.					
C408.3		Apply project management skills (scheduling work, procuring parts and documenting Expenditures and working within the confines of a deadline).					
C408.4		Work with team mates, sharing due and fair credits and collectively apply effort for making project successful.					
C408.5		Communicate technical information by means of written and oral reports.					
DEPARTMENT	CS	SEMESTER	8	COURSE CODE	15CS81	COURSE ID	C411
COURSE TITLE		<b>Internet of Things</b>					
COURSE OUTCOME NO		COURSE OUTCOME STATEMENTS					



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<b>C411.1</b>	<b>Build simple IoT applications using Arduino UNO /Raspberry Pi</b>						
<b>C411.2</b>	Analyze the essentials, challenges and security issues of Internet of Things (IoT).						
<b>C411.3</b>	Review the use of Machine Learning as a tool for IoT and Data Analytics.						
<b>C411.4</b>	Examine the role of Internet Protocol in IoT Network Layer						
<b>C411.5</b>	Evaluate the IoT architectures various technologies and protocols used for deployment of smart objects in IoT network.						
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>8</b>	<b>COURSE CODE</b>	<b>15CS82</b>	<b>COURSE ID</b>	<b>C412</b>
<b>COURSE TITLE</b>		<b>Big Data Analytics</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C412.1</b>	<b>Describe HDFS, Map reduce programming model &amp; tools, data warehouse architecture &amp; approaches, Business intelligence &amp; data mining to interpret &amp; mine large data.</b>						
<b>C412.2</b>	Apply the data mining algorithms to any given real world scenario.						
<b>C412.3</b>	Apply statistical tools with modern technologies like hadoop and map reduce.						
<b>C412.4</b>	Recognize and implement various ways of selecting suitable model parameters for different machine learning techniques.						
<b>C412.5</b>	Implement machine learning techniques and computing environment that are suitable for the applications under consideration.						
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>8</b>	<b>COURSE CODE</b>	<b>15CS83</b>	<b>COURSE ID</b>	<b>C413</b>
<b>COURSE TITLE</b>		<b>System Modelling and Simulation</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C413.1</b>	<b>Illustrate the fundamentals of simulation, models, queuing systems, Random number generation and distributions of Simulation modelling</b>						
<b>C413.2</b>	Demonstrate ability to simulate and model a real-world system using different simulation techniques.						
<b>C413.3</b>	Apply different goodness of fit tests to validate system model.						



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<b>C413.4</b>		Analyze the different random number generation techniques and distribution of given input data by using the goodness of fit tests					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>8</b>	<b>COURSE CODE</b>	<b>15CS84</b>	<b>COURSE ID</b>	<b>C414</b>
<b>COURSE TITLE</b>		<b>Internship / Professional Practice</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C414.1</b>		<b>Integrate theory and practical knowledge.</b>					
<b>C414.2</b>		Develop work habits and attitudes necessary for internship success.					
<b>C414.3</b>		Develop communication, interpersonal and other critical skills in the internship process.					
<b>C414.4</b>		Identify, write down, and carry out performance objectives related to their task assignment.					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>8</b>	<b>COURSE CODE</b>	<b>15CSP85</b>	<b>COURSE ID</b>	<b>C415</b>
<b>COURSE TITLE</b>		<b>Project Work Phase-2</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					
<b>C415.1</b>		<b>Map the technical knowledge acquired in the previous semesters for solving real world problems.</b>					
<b>C415.2</b>		Apply new technologies & design techniques (platform, database, etc.) concerned for devising a solution for a given problem statement					
<b>C415.3</b>		Apply project management skills (scheduling work, procuring parts and documenting Expenditures and working within the confines of a deadline).					
<b>C415.4</b>		Work with team mates, sharing due and fair credits and collectively apply effort for making project successful.					
<b>C415.5</b>		Communicate technical information by means of written and oral reports.					
<b>DEPARTMENT</b>	<b>CS</b>	<b>SEMESTER</b>	<b>8</b>	<b>COURSE CODE</b>	<b>15CSS86</b>	<b>COURSE ID</b>	<b>C416</b>
<b>COURSE TITLE</b>		<b>Technical Seminar</b>					
<b>COURSE OUTCOME NO</b>		<b>COURSE OUTCOME STATEMENTS</b>					





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