

## PROGRAM STRUCTURE

### I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	201HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	201BS1T01	Differential Equations and Linear algebra		✓		Students are able to demonstrate problem solving skills by modeling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	201BS1T04	Engineering Chemistry				
4	201ES1T02	Programming for Problem Solving using C	✓			Students are able to acquire skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
5	201ES1I02	Computer Engineering Workshop		✓		Students are able to acquire skills related to microsoft office tools, basics of Machine Learning and IOT.
6	201HS1L01	Communicative English Lab		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

7	201BS1L03	Engineering Chemistry Lab	✓			
8	201ES1L02	Programming for Problem Solving using C Lab	✓			Students are able to acquire skills related to basic programming using C, enabling them to be employed as software developers.
9	201MC1T01	Environmental Science				

## II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	201BS2T07	Numerical Methods and Complex Variables		✓		Students are able to demonstrate problem-solving skills by learning numerical methods for solving equations, differential equations, integrals, analytical properties of functions of complex variables, and complex integration.
11	201BS2T09	Applied Physics				
12	201ES2T11	Computer Organization	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
13	201ES2T04	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
14	201ES2T07	Data Structures through C	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers

15	201BS2L04	Applied Physics Lab				
16	201ES2L06	Data Structures through C Lab	✓			Students are able to acquire programming skills related to OOP's, and Basic OOPs structure like stacks, queues, linked lists, trees and tries which enable them to employed as a product developer.
17	201ES2L14	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
18	201MC2L01	Professional Communication Skills Lab			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
19	201MC2T02	Constitution of India				

## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	191BS3T14	Discrete Mathematics		✓		Students are able to demonstrate problem-solving skills by learning Mathematical logic, Inference Theory, and graph Theory.
21	191ES3T13	Digital Logic Design				
22	191HS3T02	Managerial Economics and Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
23	191CS3T01	Software Engineering	✓			Students are able to acquire skills relates to software engineering, project estimation and management enabling them to acquire employed as software developer.
24	191CS3T02	Object Oriented Programming through Java	✓			Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using Java, enabling them to be employed as software developers.
25	191CS3T03	Advanced Data Structures	✓			

26	191CS3L01	Object Oriented Programming through Java Lab	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
27	191CS3L02	Advanced Data Structures Lab	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
28	191MC3A03	Employability Skills - I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence
29	191MC3A04	Essence of Indian Traditional Knowledge				

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	191BS4T18	Probability and Statistics		✓		Students are able to demonstrate problem solving skills by learning about random variables , probability distributions, sampling theory , test of hypothesis , correlation and regression.
31	191IT4T01	Theory of Computation				
32	191CS4T05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
33	191CS4T06	Design and Analysis of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design.
34	191ES4T15	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
35	191CS4T07	Computer Organization	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
36	191CS4L03	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
37	191ES4L17	Internet of Things Lab	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.

38	191MC4A05	Employability Skills - II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
39	191MC4A06	Biology for Engineers				

## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	171IT5T02	Computer Networks				
41	171CS5T12	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
42	171IT5T03	Unix and Shell Programming				
43	171CS5T14	Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities.
44	171IT5E01	Artificial Intelligence		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
45	171CS5E02	Advanced Computer Architecture	✓			Students are able to acquire skills related to design, and synthesize advanced computers enabling them to be employed for designing and manufacturing of computer architectures.
46	171CS5E03	Computer Graphics	✓			Students are able to acquire related 2D,3D graphical representations and basic graphic programming using OpenGL enabling them to be employed as graphic designer.
47	171CS5E04	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.

48	171HS5T06	Employability Skills – III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
49	171IT5L01	Operating Systems and Computer Networks Lab	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities.
50	171CS5L06	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
51	171CS5L07	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
52	171IT5L02	Unix and Shell Programming Lab		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations.
53	171IT5S01	MOOCs – I		✓		Students are able to acquire technical skills by choosing an online course of their choice which is not related to academics.

## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
54	171IT6T04	Object Oriented Analysis and Design Using UML		✓		Students are able to acquire technical skills to develop different UML diagrams like usecase, class, sequence, collaboration, component and deployment diagrams
55	171CS6T16	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
56	171CS6T17	Data Warehousing and Data Mining	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
57	171CS6E05	Software Quality Assurance		✓		Students are able to demonstrate technical skills by Understanding the fundamental concepts of software automation.
58	171IT6E02	Neural Networks		✓		Students are able to demonstrate technical skill of Perceptron, NN's and Deep Neural Network's.
59	171CS6E08	Social Networks and Semantic Web		✓		Students are able to acquire technical skills with the fundamentals of Semantic Web technologies.

60	171IT6E03	Design and Analysis of Algorithms	✓			Students are able to acquire technical skills to work with different algorithmic strategies like greedy, dynamics programming, back tracking which enable them to be employed as a product developer.
61	171IT6E04	Advanced Computer Networks		✓		Students are able to demonstrate technical skills of different routing techniques, MANET's and protocols applied at different levels
62	171CS6E10	Parallel Computing		✓		Students are able to understand techniques of parallel algorithm development and programming on different parallel platform.
63	171IT6E05	Multimedia Programming		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
64	171CS6E12	E – Commerce		✓		Students are able to Understand the basic concepts and technologies used in the field of management.
65	171HS6T07	Employability Skills – IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations competence.
66	171IT6L03	Unified Modeling Language Lab		✓		Students are able to acquire technical skills to develop different UML diagrams like usecase, class, sequence, collaboration, component and deployment diagrams

67	171CS6L10	Data Warehousing and Data Mining Lab	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
68	171CS6L11	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
69	171IT6S02	MOOCs – II		✓		Students are able to acquire technical skills by choosing an online course of their choice which is not related to academics

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
70	171CS7T18	Cryptography and Network Security		✓		Students are able to demonstrate technical skill of encryption, decryption and different types of attacks in Cryptography and Network Security.
71	171IT7T05	Big Data Analytics	✓			Students are able to acquire technical skills to work with data on cloud using PIG and HIVE tools which enable them to be employed as Big Data Analyst.
72	171CS7T20	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector.
73	171IT7T06	Mobile Computing		✓		Students are able to demonstrate technical skill of mobile computing nomenclature to describe and analyze existing mobile computing frameworks and architectures
74	171CS7E13	Software Project Management			✓	Students are able to apply the knowledge of Software Project Management skills and enabling them to become an entrepreneur in any domain of their choice.
75	171IT7E06	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
76	171CS7E15	Image Processing		✓		Students are able to acquire technical skills related to image preprocessing, image segmentation, classification algorithms
77	171CS7E16	Cyber Laws		✓		Students are able to acquire skills related to cybercrimes, laws and acts

						to protect data from cyber thefts
78	171CS7E19	Information Retrieval Systems		✓		Students are able to acquire technical skills related to information retrieval systems by using various retrieving techniques used in real time environment.
79	171IT7E07	Human Computer Interaction		✓		Students are able to acquire technical skills in identifying the design issues and constraints while designing the GUI for an application.
80	171IT7E08	Distributed Systems		✓		Students are able to acquire skills to understand the protocols and architectures needed to establish a distributed network
81	171IT7E09	Decision Support System		✓		Students are able to acquire skills related to classification and regression techniques
82	171IT7L04	Mobile Computing Lab	✓			Students are able to acquire technical skills which helps them in developing mobile applications using J2EE and android which enable them to be employed as Mobile Application Developer.
83	171CS7L13	Big Data Analytics Lab	✓			Students are able to acquire technical skills to work with data on cloud using PIG and HIVE tools which enable them to be employed as Big Data Analyst.
84	171IT7P01	Industry Oriented (Internship) Minor Project	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
85	171CS8E21	Agile Methodologies	✓			Students are able to acquire skills relates to software Process models and enabling them to acquire employed as software developer.
86	171CS8E22	Cyber Security	✓			Students are able to acquire skills related to design, develop and evaluate the performance of secure systems enabling them to be employed for designing and manufacturing of secure communication equipment.
87	171CS8E23	Distributed Databases				Students are able to demonstrate technical skills of Query Optimization, Reliability and Concurrency Control in projects.
88	171IT8E10	Pattern Recognition		✓		Students are able to acquire technical skills to design systems and algorithms for pattern recognition, with focus on sequences of patterns that are analyzed using, e.g., hidden Markov models (HMM)
89	171IT8O01	Management Information System		✓		Students are able to demonstrate technical skill to demonstrate System Analysis, Design and decision making in a business environment
90	171CS8O01	Microprocessor and Multi Core Systems		✓		Students are able to demonstrate technical skills of modern multi-core processors and its applications.

91	171CS8O02	Embedded Systems		✓		Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System.
92	171IT8O02	Computer Vision		✓		
93	171EE8O05	Robotics		✓		Students are able to acquire skills related to the measurement of linear and angular measuring instruments, working of measuring instruments and control systems.
94	171CS8O04	Operations Research		✓		Students are able to demonstrate technical skill to formulate and solve problems as networks and graphs.
95	171CS8O05	Optical Communications	✓			Students are able to acquire skills related to design, fabricate and evaluate the performance of optical communication systems enabling them to be employed for designing, manufacturing and implementation of fiber optic communication systems
96	171EE8O07	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
97	171EC8O02	Disaster Management				Students are able to demonstrate technical skill of characterizing various disasters occurring in the environment and apply them in various disciplines of day to day life
98	171CS8O07	Nano Technology and its Applications		✓		Students are able to acquire technical skills by understanding the basic mathematical techniques for describing nano systems

99	171IT8P02	Major Project	✓			Employability : students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		99	43	44	5	

**Program coordinator****Head of the Department**

*Head of the Department*  
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Aditya Engineering College