

# PROGRAM STRUCTURE

## I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	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	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T03	Applied Physics				
4	191ES1T01	Programming For Problem Solving Using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab -I		✓		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
6	191BS1L03	Applied Physics Lab				
7	191ES1L01	Programming For Problem Solving Using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry..
8	191ES1L02	Basic Engineering Workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.

9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India				

## II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T09	Engineering Chemistry				
12	191BS2T10	Numerical Methods and Complex Variables		✓		Students are able to demonstrate problem solving skills by studying analytical properties of functions of complex variables whose applications can be observed in various engineering disciplines
13	191ES2T02	Engineering Graphics and Design				
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
15	191ES2T09	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
16	191HS2L02	Communicative English Lab-II		✓		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
17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L10	Data Structures Through C++ Lab	✓			Students are able to acquire programming skills related to OOP's, and Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to employed as a product developer.
19	191ES2L11	IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.
20	191PR2P01	Engineering Exploration 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.

## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171BS3T08	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by learning Mathematical logic , Graph Theory and Number Theory .
22	171ES3T23	Digital Logic Design		✓		
23	171CS3T02	Statistics with R Programming	✓			Students are able to acquire skills related to R commands, Graphical representation of data sets, and visualization Techniques and also enabling them to be employed for Data analyst
24	171CS3T03	Object Oriented Programming Through C++	✓			Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
25	171HS3T04	Managerial Economics & 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.
26	171CS3T04	Advanced Data Structures	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
27	171CS3L01	Object Oriented Programming Lab	✓			Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
28	171CS3L02	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.



29	171HS3A10	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 and competence.
30	171HS3A09	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171CS4T05	Software Engineering				
32	171CS4T06	Formal Languages & Automata Theory		✓		Students are able to demonstrate technical skills related to regular, context-free and recursively enumerable languages
33	171CS4T07	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
34	171CS4T08	Database Management Systems	✓			Students are able to acquire skills related to SQL commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer
35	171CS4T09	Principles of Programming Languages		✓		Students are able to demonstrate programming and technical skills by comparing different programming paradigms.
36	171CS4T10	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.
37	171CS4L03	Java Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
38	171CS4L04	Database Management Systems Lab	✓			Students are able to acquire skills related to SQL commands, constraints, views, pl/SQL programming enabling them to be employed for backend developer
39	171HS4A11	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.
40	171HS4A08	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171CS5T11	Compiler Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of Different Language Compilers and enabling them to be employed for designing of Compilers.
42	171CS5T12	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
43	171CS5T13	Design & Analysis of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design
44	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
45	171CS5E01	Unix and Shell Programming		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
46	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.
47	171CS5E03	Computer Graphics				
48	171CS5E04	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
49	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.

50	171CS5L05	Operating System and Linux 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 with Unix which enables them to be employed for Hardware core side job opportunities
51	171CS5L06	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
52	171CS5L07	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
53	171CS5L08	Compiler Design Lab	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of Different Language Compilers and enabling them to be employed for designing of Compilers.
54	171CS5S01	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
55	171CS6T15	Computer Networks	✓			Students are able to acquire skills related to computer networks, functionalities of reference model layers and transmitting data between nodes enabling them to be employed for networking environment
56	171CS6T16	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
57	171CS6T17	Data Ware Housing and Data Mining	✓			Students are able to acquire technical skills to synthesize and pre-process the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
58	171CS6E05	Software Quality Assurance		✓		Students are able to demonstrate technical skills by Understanding the fundamental concepts of software automation
59	171CS6E06	Bio Informatics		✓		Students are able to gain knowledge on forensic analysis, gene therapy and molecular medicine
60	171CS6E07	Human Computer Interaction		✓		Students are able to demonstrate GUI components such as Menus, Forms, Dialog boxes and gain knowledge on various design paradigms, online documentation concepts, information retrieval & its presentation.
61	171CS6E08	Social Networks and Semantic Web		✓		Students are able to acquire technical skills with the fundamentals of Semantic Web technologies.
62	171CS6E09	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
63	171CS6E10	Parallel Computing		✓		Students are able to understand techniques of parallel algorithm development and programming on different parallel platform.
64	171CS6E11	Storage Area Networks		✓		Students are able to acquire technical skill by understand the Storage Area Networks characteristics and components.
65	171CS6E12	E - Commerce		✓		Students are able to Understand the basic concepts and technologies used in the field of management.

66	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 with confidence and competence.
67	171CS6L09	Computer Networks Lab	✓			Students are able to acquire skills related to computer networks, functionalities of reference model layers and transmitting data between nodes enabling them to be employed for networking environment
68	171CS6L10	Data Ware Housing and Data Mining Lab	✓			Students are able to acquire technical skills to synthesize and pre-process the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
69	171CS6L11	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
70	171CS6S02	MOOCs – II		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
71	R1641051	Cryptography and Network Security		✓		Students are able to demonstrate technical skill of encryption, decryption and different types of attacks in Cryptography and Network Security
72	R1641052	Software Architecture & Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
73	R1641053	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
74	R1641054	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.
75	R1641057	Software Architectures & Design Patterns Lab		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
76	R1641058	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
77	R164105A	Big Data Analysis	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
78	R164105B	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	R164105C	Mobile Computing	✓			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.
80	R164105D	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector



81	R164105E	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.
82	R164105F	Scripting Languages		✓		Students are able to acquire programming skills related to building scripts that control a sequence of operations.




## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
83	R1642051	Distributed Systems		✓		Students are able to demonstrate technical skills of Interposes Communication using java RMI, Distributed File Systems and analysis various distributed algorithms in projects.
84	R1642052	Management Science			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
85	R1642053	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
86	R1642055	Seminar	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in mining engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
87	R1642056	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.
88	R164205A	Concurrent and Parallel Programming		✓		Students are able to acquire skills related to parallel processors, parallel computing, hardware and configuration required to perform parallel processing.

89	R164205B	Artificial Neural Network		✓		Students are able to demonstrate technical skill of Perceptron, NN's and Deep Neural Networks.
90	R164205C	Operation Research	✓			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
TOTAL		90	42	34	5	

  
Program Coordinator

  
Head of the Department  
Head of the Department  
Department of CSE  
ADITYA ENGINEERING COLLEGE (A&S)