

## PROGRAM STRUCTURE

### I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	171HS1T01	English – I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics – I		✓		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	171BS1T02	Mathematics – II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
4	171BS1T04	Applied Physics				
5	171ES1T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
6	171ES1T01	Computer Programming	✓			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.
7	171HS1L01	English Communication Skills Lab – I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L04	Applied Physics Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

## II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English – II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T06	Mathematics – III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
12	171HS2T02	Environmental Studies				
13	171BS2T05	Applied Chemistry				
14	171ES2T02	Engineering Mechanics	✓			Students are able to acquire skills related to principles of friction, kinetics, kinematics, resolving forces, trusses etc which forms the crux of design sciences.
15	171CS2T01	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	171HS2L02	English Communication Skills Lab – II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L03	Applied Chemistry Lab				
18	171ES2L02	Engineering Workshop & 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.

## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	171BS3T08	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by learning Mathematical logic , Graph Theory and Number Theory .
20	171ES3T23	Digital Logic Design				
21	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
22	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.
23	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.
24	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.
25	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.
26	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.
27	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.
28	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
29	171CS4T05	Software Engineering	✓			
30	171CS4T06	Formal Languages & Automata Theory		✓		Students are able to demonstrate technical skills related to regular, context-free and recursively enumerable languages
31	171CS4T07	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
32	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
33	171CS4T09	Principles of Programming Languages		✓		Students are able to demonstrate programming and technical skills by comparing different programming paradigms.
34	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.
35	171CS4L03	Java Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
36	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
37	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.
38	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
39	R1631051	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.
40	R1631052	Unix Programming		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
41	R1631053	Object Oriented Analysis and Design using UML		✓		Students are able to acquire technical skills to acquired importance of modelling in the software development life cycle
42	R1631054	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
43	R1631055	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	R1631056	Unified Modeling Lab		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
45	R1631057	Operating System & Linux Programming 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 using Linux programming which enables them to be employed for Hardware core job opportunities
46	R1631058	Database Management System Lab	✓			Students are able to acquire skills related to SQL commands, constraints, views, pl/SQL programming enabling them to be employed for backend developer
47	R1631049	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.

## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	R1632049	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
49	R1632051	Computer Networks				
50	R1632052	Data Warehousing and 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.
51	R1632053	Design and Analysis of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design
52	R1632054	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
53	R163205A	Artificial Intelligence		✓		Students are able to demonstrate technical skills related to algorithms of AI to recognize, model, and solve problems in the analysis and design of information systems
54	R163205B	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
55	R163205C	Cyber Security	✓			Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
56	R163205D	Digital Signal Processing	✓			Students are able to acquire skills related to processing of digital signals enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
57	R163205E	Embedded Systems	✓			Students are able to acquire skills related to design, program and implement embedded systems and evaluate their performance enabling them to be employed for designing and manufacturing of electronic equipment with embedded systems.



58	R163205F	Robotics				
59	R1632056	Network Programming 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
60	R1632057	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
61	R1632058	Data Warehousing and 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.

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
62	RT41051	Cryptography and Network Security		✓		Students are able to acquire technical skills to work with different cryptographic techniques, Symmetric and asymmetric cryptographic techniques, key management and security at network level.
63	RT41052	UML and Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
64	RT41053	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.
65	RT41054	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
66	RT41055	Simulation Modeling		✓		Students are able to simulate the models for the purpose of optimum control by using software.
67	RT41056	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.
68	RT41057	Artificial Intelligence		✓		Students are able to demonstrate technical skills related to algorithms of AI to recognize, model, and solve problems in the analysis and design of information systems
69	RT41058	Multimedia Computing		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
70	RT41059	High Performance Computing		✓		Students are able to demonstrate technical skills related to the principles of multi-threading and distributed computing



71	RT4105A	Digital Forensics	✓			Students are able to gain skills related to Analyze and evaluate the cyber security needs of an organization enabling them to be employed in forensic department.
72	RT4105B	Hadoop and Big Data	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
73	RT4105C	Software Project Management		✓		Students are able to acquire skills to plan and manage projects at each stage of the software development life cycle (SDLC)
74	RT4105D	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
75	RT4105E	Advanced Databases	✓			Students are able to acquire technical skills to design and implement advanced queries using Structured Query Language and also design, construct and maintain a database and database objects using procedural language constructs which enable them to employed as Database Administrator.
76	RT4105M	Mobile Application Development Lab	✓			Students are able to gain skills related to how to develop a mobile application enabling them to be employed as app developer.
77	RT4105N	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
78	RT4105O	Hadoop and Bigdata Lab	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
79	RT4105L	UML and Design Patterns Lab		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.

## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
80	RT42051	Distributed Systems		✓		Students are able to demonstrate technical skills of Interprocess Communication using java RMI, Distributed File Systems and analysis various distributed algorithms in projects.
81	RT42052	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.
82	RT42053A	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.
83	RT42053B	Advanced 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
84	RT42053C	Mobile Adhoc & Sensor Networks		✓		Students are able to acquire technical skills to work on issues and solutions of various layers of Manets, namely MAC layer, Network Layer and Transport Layer in Manets and WSN.
85	RT42053D	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
86	RT42053E	Digital Image Processing	✓			Students are able to acquire skills related to digital image processing techniques, enabling them to be employed in the field of biomedical image processing field
87	RT42053F	Micro processors and Multi Core Systems		✓		Students are able to demonstrate technical skills and extensive knowledge of microprocessor-based systems

88	RT42043B	Embedded and Real Time Systems	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of mixed signal circuits enabling them to be employed for designing and manufacturing of mixed signal ICs.
89	RT42043C	Neural Networks & Soft Computing		✓		Students are able to acquire technical skills of Implement, evaluate and compare solutions by various neural networks and soft computing approaches for finding the optimal solutions.
90	RT42043D	Social Networks and the Semantic Web	✓			Students are able to acquire skills related to design, and evaluate the performance of RF circuits enabling them to be employed for designing and manufacturing of communication equipment.
91	RT42043E	Cloud Computing	✓			Students are able to acquire skills related to cloud computing and distributed computing enabling them to be employed for cloud services sector.
92	RT42055	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.
<b>TOTAL</b>		<b>92</b>	<b>42</b>	<b>38</b>	<b>4</b>	

  
Program Coordinator

  
Head of the Department

Head of the Department  
Department of CSE  
ADITYA ENGINEERING COLLEGE (A9)