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				
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	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.
20	171BS3T08	Mathematical Foundations of Computer Science				
21	171ES3T23	Digital Logic Design		✓		Students are able to demonstrate technical skills related to working with logic circuits, developing K-Maps and working with multiplexers.
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 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.
24	171CS3T04	Advanced Data Structures	✓			Students are able to aquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
25	171HS3A10	Employability Skills	✓			This subject helps the students to accquire skills to be placed in a company as it will impart employability

		– I				skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
26	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills hich help them in becoming a professional with ethical and human values.
27	171CS3L01	Object Oriented Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
28	171CS3L02	Advanced Data Structures Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
29	171CS4T05	Software Engineering	✓			Students are able to aquire skills relates to software engineering,project estimation and management enabling them to aquire employed as software developer.
30	171CS4T07	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
31	171IT4T01	Language Processors		✓		Students are able to demonstrate technical skills realted to regular, context-free and recursively enumerable languages.
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 develop.
33	171HS4T05	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.
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	171HS4A11	Employability Skills	✓			This subject helps the students to accquire skills to be placed in a company as it will impart employability skills in students, which will

		– II				enable the students to feel comfortable to face several competitive examinations with confidence and competence.
37	171HS4A08	IPR and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
38	171CS4L04	Database Management Systems Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
39	R1631121	Human Computer Interaction				
40	R1631052	Unix and Shell Programming		✓		skill Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations.
41	R1631122	Advanced Java Programming	✓			Students are able to acquire skills related to advanced Java programming enabling them to be employed as software developers.
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	R1631123	Advanced Java Programming Lab	✓			Students are able to acquire skills related to advanced Java programming enabling them to be employed as software developers.
45	R1631124	Unix and Operating Systems 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 unix

						programming which enables them to be employed for Hardware core job opportunities
46	R1631125	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

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
47	R1631049	Professional Ethics and Human Values				
48	R1632051	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.
49	R1632121	Data Mining	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classifiarion and prediction algorithms which enable them to be employed as Data Analyst.
50	R1632054	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and statergies.
51	R1632122	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
52	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.
53	R1632123A	Social Networks and Semantic Web		✓		Students are able to acquire technical skills with the fundamentals of Semantic Web technologies.

54	R1632055D	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.
55	R1632055E	Embedded Systems		✓		Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System.
56	R1632025D	Robotics	✓			Students are able to acquire skills to understand the concepts of robot kinematics, Dynamics and trajectory planning enabling them to be employed in robot manufacturing companies
57	R1632123B	Operations 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.
58	RT32059	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
59	R1632125	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and statergies.
60	R1632126	Data Mining Lab	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classifiarion and prediction algorithms which enable them to be employed as Data Analyst.
61	R1632049	IPR and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

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	RT41121	Embedded and Real Time System				Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System.
66	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.
67	RT41058	Multimedia Computing		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.

68	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.
69	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)
70	RT41122	Computer Vision		✓		Students are able to acquire technical skills related to image processing by using various tools related to computer vision.
71	RT4105E	Advanced Databases		✓		Students are able to demonstrate technical skills of Query Optimization, Reliability and Concurrency Control in projects.
72	RT4112L	UML and Design Patterns Lab		✓		Students are able to demonstrate technical skills.
73	RT4112M	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.
74	RT4112O	Software Engineering Lab		✓		Students are able to acquire technical skills by applying different software Engineering techniques and statergies.
75	RT4112N	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 analyics role.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
76	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.
77	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.
78	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.
79	RT42053D	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
80	RT42051	Distributed 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

81	RT42121	Mathematical Opimization (LP, Scheduling, Simulation, QT, Markov analysis, NLP, PERT CPM Network related problems etc)		✓		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
82	RT42052	Management Science			✓	Students are able to acquire skills to plan and manage projects at each stage of the software development life cycle (SDLC)
TOTAL		**82**	**31**	**33**	**5**	

Program coordinator

Head of the Department

Head of the Department
Department of IT
Aditya Engineering College