



ADITYA ENGINEERING COLLEGE

An Autonomous Institution

Approved by AICTE • Permanently Affiliated to JNTUK • Accredited by NAAC with 'A' Grade
Recognised by UGC under sections 2(f) and 12(B) of UGC Act, 1956

Aditya Nagar, ADB Road, Surampalem - 533437, Near Kakinada, E.G.Dt., Ph:99498 76662

1.1.3 Mapping of courses having focus on employability/ entrepreneurship/ skill development offered by the institution during the academic year 2021-22.

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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	201BS1T03	Engineering Physics				
4	201ES1T02	Building Materials & Construction		✓		Students are able to acquire skills related to various aspects of materials used in construction
5	201ES1I01	Engineering Graphics		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
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	201BS1L02	Engineering Physics Lab				
8	201ES1L02	Engineering Workshop		✓		Students are able to acquire skills related to building various joints in different trades for several applications.
9	201MC1T01	Environmental Science				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	201BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modeling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
11	201BS2T06	Chemistry of Materials				
12	201ES2T07	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.
13	201ES2T09	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.
14	201ES2T13	Surveying			✓	Students are able to demonstrate competency in the domain of measuring distances and calculate areas enabling them to become a surveyor.
15	201ES2L06	Surveying field Work		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modeling and analysis helps in training the students to face real time measurements and calculations as surveyors
16	201ES2L09	Engineering Chemistry Lab				
17	201ES2L11	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.

18	201MC2L01	Professional communications skills 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
19	201MC2T02	Constitution of India		✓		This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T12	Integral transforms and applications of Partial Differential Equations		✓		Students are able to demonstrate problem solving skills by modeling physical phenomenon using partial differential equations and by learning Fourier Transforms and Laplace Transforms and their applications
21	201CE3T01	Strength of Materials-I	✓			Students are able to acquire skills related to resistance to mechanical forces and enabling them to be employed for constructional activities.
22	201CE3T02	Fluid Mechanics	✓			Students are able to acquire skills related to mechanics of fluids (liquids, gases, and plasmas) and the forces on them in pipe design calculations enabling them to be employed in constructional industry.
23	201CE3T03	Structural Analysis	✓			Students are able to acquire skills related to various aspects of framed structures which can be applied in any real time projects.
24	201CE3T04	Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
25	201CE3L01	Building Planning & Drawing Lab		✓		Students are able to demonstrate technical skills related to planning and construction of buildings
26	201CE3L02	Concrete Technology Lab		✓		Students are able to acquire technical skills related to properties of concrete, design and test the concrete useful in constructional activities
27	201CE3L03	Strength of Materials Lab		✓		Students are able to demonstrate technical skills related to resistance of materials to mechanical forces and apply them in constructional industry

A.Y. 2021-2022

B. Tech Civil Engineering

28	201SC3L01	CAD Lab		✓		Students are able to demonstrate technical skill of various construction elements using AutoCAD
29	201MC3T03	Biology for Engineers				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	201BS4T15	Numerical Methods and Statistical Techniques		✓		Students are able to demonstrate problem solving skills by learning numerical methods for solving equations, differential equations, integrals, probability distributions, sampling theory and test of hypothesis.
31	201CE4T05	Engineering Geology	✓			Students are able to acquire skills related to various aspects of soil strata and subsurface formation in foundation and subsurface structures in civil constructions enabling them to be employed in constructional sector.
32	201CE4T06	Strength of Materials-II	✓			Students are able to acquire skills related to quantitative description of the motion and deformation of solid materials enabling them to be employed for constructional sector.
33	201CE4T07	Hydraulics & Hydraulic Machinery	✓			Students are able to acquire skills related to dam construction, mainly for maximum efficiency of resources available in the surroundings of the establishment enabling them to be employed for designing of dams and related structures.
34	201HS4T02	Management Science			✓	Students are able to demonstrate competency in the domain of business management enabling them to become an entrepreneur.
35	201CE4T08	Soil Mechanics	✓			Students are able to acquire skills related to various properties of soil deciding the strength required in substructure design of a building/construction enabling them to be employed in construction industry.
36	201CE4L04	Engineering Geology Lab		✓		Students are able to demonstrate technical skill of geological knowledge in selection of suitable sites for construction and gather raw material like rocks and sand used as materials in buildings enabling them to be employed in constructional industry
37	201CE4L05	FM & HM Lab		✓		Students are able to demonstrate technical skills in working with turbines, pumps and understand flow behaviour at various sections of harnessing energy from alternate energy sources.

38	201SC4L13	3D Modeling using Revit		✓		Students are able to demonstrate technical skill of revit software enabling them to be employed in constructional industry
39	201MC4T04	Essence of Indian Traditional Knowledge		✓		This subject demonstrate technical skills as they were able to understand concept of Traditional knowledge and its importance, enactments related to the protection of traditional knowledge and traditional knowledge in Agriculture and Medicine.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	191CE5T09	Irrigation & water resource Engineering	✓			Students are able to acquire skills related to characteristics of flood analysis based on hydrograph which help in predicting precipitation and deciding level of rainfall received in an area enabling them to be employed in drought management department of government
41	191CE5T10	Engineering geology	✓			Students are able to acquire skills related to various aspects of soil strata and subsurface formation in foundation and subsurface structures. in civil constructions enabling them to be employed in constructional sector.
42	191CE5T11	Design & drawing of Reinforced concrete structures	✓			Students are able to acquire skills related to designing of structural elements like beams, columns, slabs and foundations enabling them to be employed as designers and planners
43	191CE5T12	Geotechnical engineering	✓			Students are able to acquire skills related to various properties of soil deciding the strength required in substructure design of a building/construction enabling them to be employed in construction industry.
44	191CE5E02	PE I Construction Technology & Management	✓			Students are able to acquire skills related to various management principles involved in constructions and the machinery used in the field of constructional activities enabling them to be employed as designers in development of various machinery
45	191CE5E04	Subsurface Investigation and Instrumentation	✓			Students are able to acquire skills related to various aspects of subsurface investigation and various instruments used in it enabling them to be employed in Constructional industry
46	191CE5E01	Airport Planning and Design	✓			Students are able to acquire skills related to various aspects of study of airport charactersites enabling them to be employed in consttuctional industry
47	191CE5E05	Urban Hydrology	✓			Students are able to acquire skills related to concepts of drainage principles of surface runoff and its importance in conservation of water in the society enabling them to be employed as civil engineers
48	191CE5E03	Environmental Pollution and Control	✓			Students are able to acquire skills related to concepts of pollution of various sectors of environment and apply them in sustainable development of the society enabling them to be employed as environmental managers
49	191EE5O01	OE I Electrical Safety		✓		Students are able to demonstrate safety skills by providing knowledge on hazards with growing penetration of electricla devices in strategic areas including Space, mining and Nuclear energy.

50	191EE5O02	Electrical Materials		✓		Students are able to demonstrate technical skills in manufacturing of the electrical components depending on the application.
51	191EE5O03	Basic Electrical Measurements	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
52	191ME5O02	Fundamentals of Mechanical Engineering		✓		Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.
53	191ME5O03	Supply Chain Management	✓			The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
54	191ME5O04	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
55	191ME5O05	Entrepreneurship Development and Incubation	✓			Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
56	191EC5O01	Signals & Systems	✓			Students are able to acquire skills related to analysis of signals enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
57	191EC5O02	Digital Electronics and Logic Design	✓			Students are able to acquire knowledge related to characteristics of digital electronic devices and skills related to basic ckt. design enabling them to be employed for designing and manufacturing of digital electronic equipment.
58	191EC5O03	Semi conductor devices	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
59	191CS5O01	Data Structures	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
60	191CS5O02	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.
61	191CS5O03	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
62	191CS5O04	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

63	191IT5O01	Data Base 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
64	191IT5O02	Computer Graphics	✓			Students are able to aquire related 2D,3D graphical representations and basic graphic programming using openGL enabling them to employed as graphic designer.
65	191MI5O01	Overview of Mining				
66	191PT5O01	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications ,modeling and analysis of process in Petroleum Industry.
67	191PT5O02	Fundamentals of Petroleum Industry				
68	191AG5O01	Basic Crop Production Practices	✓			Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as agricultural field manager
69	191CE5L05	Engineering geology lab		✓		Students are able to demonstrate technical skill of geological knowledge in selection of suitable sites for construction and gather raw material like rocks and sand used as materials in buildings enabling them to be employed in constructional industry
70	191CE5L06	Geotechnical engineering lab		✓		Students are able to demonstrate technical skill of characterizing soil tests on various types of soil to decide suitability of soil for construction acitvities as a civil engineer
71	191HS5T06	Employability Skills - III	✓			This subject helps the students to accquire 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.
72	191PR5P02	Socially Relevant Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in eletronics and communication domain through the aquired technical, cognitive,communication and creative skills to address societal needs.
73	191MC5A07	Survey camp		✓		Students are able to demonstrate Problem solving skills to the case studies they undertake as mini projects involving various surveying techniques

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
74	191CE6T13	Design & drawing of steel Structures	✓			Students are able to acquire skills related to properties of steel structures and designing of connections between the structural members at industrial, offshore, high rise building enabling them to be employed for designing of building units.
75	191CE6T14	Highway engineering	✓			Students are able to acquire skills related to geometric properties of road enabling them to be employed for R and B department.
76	191CE6T15	Foundation engineering	✓			Students are able to acquire skills related to various properties of soil deciding the strength required in substructure design of a building/construction enabling them to be employed in construction industry.
77	191CE6E10	PE-II Repair and Rehabilitation of Structures	✓			Students are able to acquire skills related to various aspects of studying deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed in civil industry
78	191CE6E07	Ground Improvement Techniques	✓			Students are able to acquire skills related to roadway design enabling them to be employed in R and B industry
79	191CE6E09	Railway Engineering	✓			Students are able to acquire skills related to various aspects of geometric properties of road and apply the concept in design of railway enabling them to be employed in constructional industry
80	191CE6E08	Hydropower Development	✓			Students are able to demonstrate technical skill of harnessing hydropower enabling them to be employed in various projects.
81	191CE6E06	Air Pollution Engineering	✓			Students are able to acquire skills related to various aspects of air pollution concepts and their control and their application in the society enabling them to be employed as environmental engineers
82	191CE6E13	PE -III Finite Element Methods		✓		Students are able to acquire problem solving skills related to structural related problems and developing software programs and enabling them to be employed in various software related constructional industries
83	191CE6E12	Expansive Soils		✓		Students are able to demonstrate technical skill of characterizing the nature of soils with respect to their expansive nature
84	191CE6E11	Docks and Harbour Engineering	✓			Students are able to acquire skills related to various aspects of harbour

						construction along the shore enabling them to be employed in constructional industry
85	191CE6E15	Water Resources System Analysis	✓			Students are able to acquire skills related to planning of various water sources and their conservational principles in the society enabling them to be employed in civil industry
86	191CE6E14	Industrial Waste & Waste-Water Engineering	✓			Students are able to acquire skills related to the industrial requirement and treatment of the waste water from various industries enabling them to be employed as environmental engineers
87	191EE6O04	OE II Energy Audit and Conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance activities, creates the trust among the students to have own company.
88	191EE6O05	Non Conventional Energy resources	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
89	191EE6O06	Instrumentation	✓			Students are able to acquire skills related to various types of electrical instruments that enable them to get employed in core (electrical) industry/company related to instrumentation of electrical parameters.
90	191ME6O06	Solar Energy Utilisation		✓		Students are able to demonstrate problem solving skills in analyzing the basic thermodynamics and basic heat transfer mechanisms.
91	191ME6O07	Basic Thermodynamics and Heat Transfer	✓			Students are able to acquire skills related to various thermodynamic systems and power cycles and enabling them to be employed as Thermodynamic engineer.
92	191ME6O09	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
93	191ME6O06	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 industries
94	191ME6O12	Entrepreneurship Development and Incubation	✓			Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
95	191ME6O07	Biomedical Instrumentation	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of biomedical instrumentation circuits enabling them to be employed for designing and manufacturing of electronic equipment like ECG, EMC etc.
96	191ME6O08	ECAD Tools	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.

97	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
98	191CS6O06	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
99	191CS6O07	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
100	191CS6O08	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.
101	191CS6O09	AR / VR				
102	191IT6O03	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.
103	191IT6O04	AI Tools & Techniques		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
104	191AG6O03	Bio-energy systems design and applications	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
105	191IT6O05	Robotic Process Automation		✓		Students are able to demonstrate technical skill to develop applications using UIPath Programming and extraction techniques to deploy robot configurations
106	191MI6O02	Industrial Safety Practices		✓		Students are able to demonstrate technical skill related to various safety practices to be followed in different industrial environments.
107	191MI6O03	Electrical Equipment's in Mines		✓		Students are able to acquire knowledge about various electrical equipment used in mines which useful in mining activity.
108	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modeling and analysis of reserves .
109	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
110	191AG6O02	Weather forecast in Agriculture				
111	191CE6L07	Transportation engineering lab		✓		Students are able to demonstrate technical skill of testing of materials and traffic data collection applied in real time situation of RandB industry

112	191CE6L08	Computer aided design lab		✓		Students are able to demonstrate computer based drawing and reducing manual drawing in constructional activities
113	191CE6L09	Irrigation design & drawing		✓		Students are able to demonstrate technical skill of characterizing various types of irrigation structures and their design use ful in the agricultural industry
114	191HS6T07	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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
115	171CE7T18	Geotechnical Engineering - II	✓			Students are able to acquire skills related to slopes and finding out the earth pressures using various methodologies applied in foundation design of a building enabling them to be employed for constructional sector.
116	171CE7T19	Environmental Engineering	✓			Students are able to acquire skills related to design and evaluate the water supply system and treatment of wastewater generated in the society and its management enabling them to be employed for designing deals with as civil engineers
117	171CE7T20	Remote Sensing and GIS Applications	✓			Students are able to acquire skills related to classification and map making for various spatial references like, ground water, forestry, transportation in the real world enabling them to be employed in various industries
118	171CE7T21	Estimation, Specifications and Contracts	✓			Students are able to acquire skills related to estimating material and cost of it for various constructional activities enabling them to be employed in constructional industry.
119	171CE7E10	PE IV Advanced Structural Engineering	✓			Students are able to acquire skills related to application of recent trends in analysis of dynamic behaviour of a structure, which can further be applied in developing Earth quake resistant buildings enabling them to be employed as designers of buildings
120	171CE7E11	Watershed Management	✓			Students are able to acquire skills related to the effective usage of water and land resources for sustainable future in the society enabling them to be employed as civil engineers
121	171CE7E12	Design of Tall Buildings	✓			Students are able to acquire skills related to design, evaluate and construct apartments/high rise buildings enabling them to be employed in constructional industry
122	171CE7E13	PE V Bridge Engineering	✓			Students are able to acquire skills related to design, evaluate and study the force applied by a the flow of water and relating it to design of dynamics/cyclic loads in various types of bridges enabling them to be employed in constructional industry
123	171CE7E14	Environmental Impact Assessment and Management	✓			Students are able to acquire skills related to assessment of the impact of any developmental activity in any sector of the environment and mitigation of negative impacts in the environment enabling them to be employed inas environmental managers/engineers
124	171CE7E15	Water Resources Systems	✓			Students are able to acquire skills related to planning of various water sources and

		Planning				their conservational principles in the society enabling them to be employed in civil industry
125	171CE7L08	Environmental Engineering Lab		✓		Students are able to demonstrate technical skill of characterizing water samples with respect to physical and chemical examination required for drinking water supply and constructional activities and waste water for treatment and disposal in municipal sector of the society
126	171CE7L09	GIS And Computer Aided Design (CAD) Lab		✓		Students are able to demonstrate technical skill of experimenting various remote sensing software like Arc GIS, ERDAS etc. used in image analysis and map making at various land scape in constructional industry
127	171CE7P01	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
128	171CE8E16	PE VI Urban Transportation Planning Engineering				Students are able to demonstrate technical skill of generation of trips and trip modeling in R and B industry
129	171CE8E17	Soil Dynamics and Foundations				
130	171CE8E18	Solid And Hazardous Waste Management				Students are able to acquire skills related to various aspects of managing the municipal solid waste generated and its importance in sustainable development of the society in various industries and municipalities enabling them to be employed as sanitary engineers/managers/inspectors
131	171CE8E19	Air Pollution and Control				Students are able to acquire skills related to various aspects of air pollution concepts and their control and their application in the society enabling them to be employed as environmental engineers
132	171CE8O01	OE Electronic Instrumentation				
133	171CE8O02	Database Management Systems				Students are able to acquire skills related to sql commands, constraints, views, pl/sql programming enabling them to be employed for backend developer
134	171CE8O03	Alternative Energy Sources				Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
135	171CE8O04	Waste Water Management				Students are able to demonstrate technical skill of characterizing various waste water treatment technologies.
136	171CE8O05	Fundamentals of Liquefied Natural Gas				Students are able to demonstrate technical skill of characterizing different gas components, modeling and analysis of liquefactions.
137	171CE8O06	Green Fuel Technologies				Students are able to demonstrate technical skill of characterizing different energy resources, modeling and analysis of energy sector..
138	171CE8O07	Green Engineering Systems				Students are able to demonstrate problem solving skills in analyzing the significance of alternative sources of energy, green energy systems.
139	171CE8P02	Major 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.
TOTAL		139	76	48	4	



Program Coordinator



Head of the Department
 Head of the Department
 Dept. of Civil Engineering
 ADITYA ENGINEERING COLLEGE (A9)

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 modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	201BS1T03	Applied Physics				
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	201ES1I01	Engineering Graphics and Design		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
6	201HS1L01	Communicative English Lab		✓		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.
7	201BS1L02	Applied Physics 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	201BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations, vector differentiation, vector integration and their applications in various engineering disciplines.
11	201BS2T06	Transform Techniques		✓		Students are able to demonstrate problem solving skills by learning Fourier Transforms, Laplace Transforms, Z-Transforms and their applications
12	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
13	201ES2T09	Basic Electrical Circuits	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.
14	201ES2T13	Basic Civil and Mechanical Engineering				
15	201ES2L06	Data Structures through C Lab	✓			Students are able to acquire programming skills related to OOPs, and Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to employed as a product developer.
16	201ES2L09	Electrical Engineering Workshop		✓		Students are able to demonstrate engineering skills by acquiring basic knowledge on the working of various semi-conductor devices
17	201ES2L11	Basic Civil and Mechanical Engineering Lab				
18	201MC2L01	Professional Communications Skills 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.
19	201MC2T02	Constitution of India		✓		This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T11	Numerical methods & 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, complex integration.
21	201EE3T01	Analog Electronic Circuits	✓			Students are able to acquire skills related to modulation and demodulation techniques, transmission and reception of signals enabling them to be employed for designing and manufacturing of communication systems
22	201EE3T02	Electrical Circuit Analysis	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.
23	201EE3T03	DC Machines and transformers		✓		This subject helps the student to demonstrate technical skills as they are able to analyze electrical networks using network theorems, performance of AC and DC Machines, diode characteristics and its application and simulation of diode and transistor.
24	201EE3T04	Electromagnetic Fields	✓			Students are able to acquire skills related to signal processing and digital communications which enables them to be employed in EMF application industries.
25	201EE3L01	DC machines and transformers Lab		✓		This subject helps the student to demonstrate technical skills as they are able to analyze electrical networks using network theorems, performance of AC and DC Machines, diode characteristics and its application and simulation of diode and transistor.
26	201EE3L02	Electrical Circuits Lab	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.
27	201EE3L03	Analog Electronic Circuits Lab	✓			Students are able to acquire skills related to modulation and demodulation techniques, transmission and reception of signals enabling them to be employed for designing and manufacturing of communication systems

28	201SO3L02	Design of Electrical Circuits using Engineering Software Tools	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.
29	201MC3T03	Biology For Engineers				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	201EE4T05	Electrical Power Generation and Distribution Systems	✓			Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges imposed by the growth in non-dispatchable renewable generation on electric grids consideration that enables them to get employed in power transmission company.
31	201EE4T06	Digital Electronics	✓			Students are able to acquire knowledge related to characteristics of digital electronic devices and skills related to basic ckt. design enabling them to be employed for designing and manufacturing of digital electronic equipment.
32	201EE4T07	Induction and Synchronous Machines		✓		This subject helps the students to improve their skills by making them know the performance evaluation methods of various flow measuring equipment and hydraulic turbines and pumps. This subject helps the students to demonstrate their skills as they will identify and know the uses of different pumps which will be used in underground and open cast mines
33	201HS4T03	Managerial Economics and Financial Analysis			✓	Students are able to demonstrate competency in the domain of business management enabling them to become an entrepreneur.
34	201ES4T18	Python Programming	✓			Students are able to acquire skills related to Python Programming to give solutions to Realtime problems in creative way.
35	201ES4L15	Python Programming Lab	✓			Students are able to acquire skills related to Python Programming to give solutions to Realtime problems in creative way.
36	201EE4L04	Induction and Synchronous Machines Lab		✓		This subject helps the students to improve their skills by making them know the performance evaluation methods of various flow measuring equipment and hydraulic turbines and pumps. This subject helps the students to demonstrate their skills as they will identify and know the uses of different pumps which will be used in underground and open cast mines.
37	201EE4L05	Digital Electronics lab		✓		Students are able to acquire knowledge related to characteristics of digital electronic devices and skills related to basic ckt. design enabling them to

						be employed for designing and manufacturing of digital electronic equipment.
38	201SC4L14	IoT Applications of Electrical Engineering	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
39	201MC4T04	Essence of Indian Traditional Knowledge				

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	191EE5T10	Power Systems –II	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
41	191EE5T11	Power Electronics	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
42	191EE5T12	Electrical Measurements and Instrumentation	✓			Students are able to acquire skills related to various types of electrical instruments that enable them to get employed in core (electrical) industry/company related to instrumentation of electrical parameters.
43	191HS5T05	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.
44	191EE5E03	Renewable energy systems	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
45	191EE5E02	Electrical Machine Modeling and Analysis	✓			Students are able to acquire skills related to machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be employed for controlling, designing and manufacturing in power station, wind turbines, etc
46	191EE5E01	Advanced Control Systems		✓		The students re able to acquire technical skills related to strategic advanced control methods to improving productivity and enhancing the best practices of the company.
47	191EE5E03	Renewable energy systems	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.

48	191ME5O02	Fundamentals of Mechanical Engineering	✓			Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.
49	191ME5O03	Supply Chain Management	✓			The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service-based companies
50	191ME5O04	3D Printing				
51	191ME5O05	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
52	191CS5O02	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.
53	191CS5O03	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
54	191CS5O04	R Programming				
55	191IT5O01	Data Base 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
56	191IT5O02	Computer Graphics	✓			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.
57	191MI5O01	Overview of Mining				
58	191PT5O01	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
59	191PT5O02	Fundamentals of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of petroleum industry.
60	191AG5O01	Basic Crop Production Practices				
61	191EE5L04	Electrical Machines-II Lab	✓			Students are able to acquire skills related to machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be

						employed for controlling, designing and manufacturing in power station, wind turbines, etc
62	191EE5L05	Control Systems Lab	✓			Students are able to acquire skills related to strategic methods to improving productivity and enhancing the best practices of the company that enables them to get employed in industries related to controlling of operations
63	191HS5T06	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.
64	191PR5P02	Socially Relevant 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.
65	191MC5A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
66	191EE6T13	Microprocessor & Interfacing		✓		Students are able to demonstrate technical skills of modern multi-core processors and its applications.
67	191EE6T14	Power System Analysis	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
68	191EE6T15	Power Converter Drives	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
69	191EE6E07	Electrical Distribution Systems	✓			Students are able to acquire skills related to mitigating some of the potential distribution of electrical power challenges imposed by the growth in non-dispatchable renewable generation on electric grids that enables them to get employed in power distribution company.
70	191EE6E05	Advanced Power Electronics Converters	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
71	191EE6E06	Digital Control Systems		✓		The students are able to acquire technical skills related to strategic advanced control methods to improving productivity and enhancing the best practices of the company.
72	191EE6E08	Energy Audit, Conservation & Management			✓	The course focuses on the loss and profit studies and other company maintenance activities, creates the entrust among the students to have own company.
73	191EE6E11	High Voltage Transmission	✓			Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.

74	191EE6E12	Switched mode power Converters	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
75	191EE6E09	Control Systems Design	✓			Imparts foundations of control systems, which are helpful in controlling industrial and domestic processes, making the student employable.
76	191EE6E10	Electrical Safety	✓			Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.
77	191CE6O02	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
78	191ME6O06	Solar Energy Utilization				
79	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analyzing the hydraulic and pneumatic systems
80	191ME6O09	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
81	191ME6O10	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
82	191ME6O11	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.
83	191ME6O12	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
84	191EC6O04	Biomedical Instrumentation	✓			Students are able to acquire skills to understand and apply the biomedical instrumentation enabling them to be employed in various organizations, which developed and fabricate biomedical instruments like ECG etc.
85	191EC6O05	ECAD Tools	✓			Students are able to acquire skills related to ECAD tools, enabling them to be employed as Design engineers

86	191CS6O06	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
87	191CS6O07	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front-end developers.
88	191CS6O08	Cyber Security	✓			Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
89	191CS6O09	AR / VR	✓			Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.
90	191IT6O03	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
91	191IT6O04	AI Tools & Techniques		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
92	191IT6O05	Robotic Process Automation		✓		Students are able to demonstrate technical skill to develop applications using UI Path Programming and extraction techniques to deploy robot configurations
93	191MI6O02	Industrial Safety Practices				
94	191MI6O03	Electrical Equipment's in Mines		✓		This subject helps the student to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthing methods and applicability. This subject will guide the students of mining to be self-sufficient for the electrical related problems in mines.
95	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves.
96	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
97	191AG6O02	Weather forecast in Agriculture	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.

98	191AG6O03	Bio-energy systems design and applications	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
99	191EE6L06	Electrical Measurements & Instrumentation Lab	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
100	191EE6L07	Power Electronics Lab	✓			Students are able to acquire skills related to the various methods that are used in power electronic based devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
101	191HS6T07	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.
102	191MC6A09	Professional Ethics and Human Values		✓		This subject helps the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
103	171EE7T18	Utilization of Electrical Energy	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to get employed in industries focusing on optimum utilization of electricity.
104	171EE7T19	Linear and Digital IC Applications		✓		Students are able to demonstrate technical solving skills by providing knowledge on ICs with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.
105	171EE7T20	Power System Operation and Control	✓			Students are able to acquire skills related to a well-designed power system that ensures robust performance and maximizes plant availability under all operating conditions, including transient conditions like motor starting, non-linear loads and generator loss enabling them to get employed in electrical power sectors.
106	171EE7T21	Switch Gear and Protection	✓			Students are able to acquire skills related to mitigating some of the potential protection challenges imposed by the growth in non-dispatchable renewable generation on electric grids is an important consideration enabling them to be employed in protection of power system industry.
107	171EE7E11	Optimization Techniques		✓		Students are able to demonstrate technical skill of optimization that helps to gain problem-solving skills optimally i.e., to solve a problem in a logical as well as creative way in an optimized manner.
108	171EE7E12	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.
109	171EE7E13	Special Electrical Machines	✓			Students are able to acquire skills related to special machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be employed for controlling, designing and manufacturing in power station, wind turbines, etc
110	171EE7E14	High Voltage Engineering	✓			Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.

111	171EE7E15	Electric Power Quality	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to be employed in industries focusing in saving money on electricity bill and carbon footprint.
112	171EE7E16	EHVAC Transmission	✓			Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.
113	171EE7L09	Power Systems Simulation Lab	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
114	171EE7L10	Micro Processor and Micro Controllers Lab	✓	✓		Employability: Students are able to acquire skills related to basic machine level and assembly level programming of processors and controllers enabling them to be employed for designing and manufacturing of digital electronic equipment. Skill Development: Students are able to demonstrate programming skill related to microprocessors and controllers, interfacing of peripherals etc
115	171EE7P01	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
116	171EE8E17	HVDC Transmission	✓			Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.
117	171EE8E18	Flexible AC Transmission Systems	✓			Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.
118	171EE8E19	Power System Reforms	✓			Students are able to acquire skills related to analyze of reforms that is required to achieve government's vision of energy access, efficiency, sustainability and security that enables them to get employed in energy sectors.
119	171EE8E20	Digital Control Systems		✓		This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.
120	171EE8O01	Energy Audit, Conservation and Management			✓	the course focuses on the loss and profit studies and other company maintenance actives, creates the entrust among the students to have own company.
121	171EE8O02	VLSI Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of VLSI circuits enabling them to be employed for designing and manufacturing of complex electronic equipment in the fields of communications, control and instrumentation etc.
122	171EE8O03	Unix and Shell Programming		✓		Students are able to demonstrate programming skill for coding and building applications which is required for software industries.
123	171EE8O04	Neural Networks and Fuzzy Logic	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems
124	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.

125	171EE8O06	Vehicular Electric Power Systems	✓			Students are able to acquire skills related to various types of hybrid vehicles operations and control enabling the students to get employed in EV sector.
126	171EE8O07	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
127	171EE8O08	Cyber Security	✓			Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
128	171EE8P02	Major 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.
Total		128	74	32	8	


Program Coordinator


Head of the Department
Head of The Department
Dept: Of Electrical & Electronics Engineering,
Aditya Engineering College (A9)

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 modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	201BS1T02	Engineering Physics				
4	201ES1T03	Essential Electrical and Electronics Engineering		✓		This subject helps the student to demonstrate their technical skills by analyzing various electrical networks, knowing the operation of Dc generators, analyzing the performance of single phase transformers and 3-phase induction motors. This will create skills among student so that wherever they will find these types of machine their deal with their complexities.
5	201ES1T05	Engineering Graphics		✓		This subject helps the student to demonstrate technical skills as they have knowledge about engineering drawing and AutoCAD software for orthographic projections and isometric projection.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
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	201BS1L01	Engineering Physics Lab				
8	201ES1L03	Essential Electrical and Electronics Engineering Lab		✓		This subject helps the student to demonstrate technical skills as they are able to analyze electrical networks using network theorems, performance of AC and DC Machines, diode characteristics and its application and simulation of diode and transistor.
9	201MC1T01	Environment Science				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	201BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations, vector differentiation, vector integration and their applications in various engineering disciplines.
11	201BS2T08	Chemistry of Materials	✓			Students are able to acquire skills related to creation, characterization and application of materials
12	201ES2T06	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.
13	201ES2T08	Programming for Problem Solving using C		✓		Students are able to acquire skills related to basic programming using C, enabling them to be employed as software developers.
14	201ES2L07	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
15	201ES2L12	Computer Aided Drafting Lab		✓		Students are able to acquire skills related to drafting of mechanical components/assemblies through AUTOCAD software enabling them to be employed as a design engineer.
16	201HS2L02	Professional Communications Skills 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.
17	201BS2L05	Engineering Chemistry Lab				
18	201ES2L10	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.
19	201MC2T02	Constitution of India		✓		This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T12	Integral Transforms and Applications of partial differential equations		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and by learning Fourier Transforms and Laplace Transforms and their applications
21	201ME3T01	Production Technology	✓			Students are able to acquire skills related to various manufacturing process, different joining techniques and bulk metal deforming processes enabling them to be employed in manufacturing industries
22	201ME3T02	Fluid Mechanics & Hydraulic Machines	✓			Students are able to acquire skills related to concepts of fluid statics, dynamics and performance characteristics of turbines and pumps and enabling them to be employed as a fluid engineer.
23	201ES3T15	Thermodynamics	✓			Students are able to acquire skills related to various thermodynamic systems and power cycles and enabling them to be employed as Thermodynamic engineer.
24	201ES3T16	Metallurgy & Material Science	✓			Students are able to acquire skills related to basic concepts of Metallurgy and materials science and various types of heat treatments of alloys and can be employed as a material science engineer.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
25	201ME3T01	Computer Aided Machine Drawing Lab		✓		Students are able to acquire skills related to construction of assembly drawings from the part drawings for manufacturing and enabling them to be employed as a computer aided design engineer.
26	201ME3L01	Production Technology Lab		✓		Students are able to acquire skills related to various manufacturing process, different joining techniques and bulk metal deforming processes.
27	201ME3L02	Fluid Mechanics & Hydraulic Machines Lab		✓		Students are able to demonstrate technical skills in determining the efficiencies of pumps and turbines, enabling them to be employed in piping design industries.
28	201SC3L03	Skill oriented Course-I(Java Programming Lab)	✓			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
29	201MC3T03	Biology For Engineers		✓		Students are able to demonstrate skills related to to biology in a general way by providing a framework for understanding life at the cellular and molecular structures

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	201BS4T15	Numerical methods & Statistical Techniques		✓		Students are able to demonstrate problem solving skills by learning numerical methods for solving equations, differential equations, integrals, probability distributions, sampling theory and test of hypothesis
31	201HS4T04	Industrial Engineering and Management			✓	Students are able to demonstrate Competency to understand the knowledge of industrial engineering domain and enabling them to be an entrepreneur.
32	201ME4T03	Mechanics of Solids	✓			Students are able to acquire skills related to bending and shear stresses for beams of various loads and supports enabling them to be employed as a stress analysis engineer in core design industries.
33	201ME4T04	Theory of Machines-I	✓			Students are able to acquire skills related to the concepts of kinematics of machine elements, chains and mechanisms and enabling them to be employed in mechanical design field.
34	201ME4T05	Thermal Engineering-I	✓			Students are able to acquire skills related to working of I.C. Engines, Compressors and enabling them to be employed in thermal Power Plants.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
35	201ME4L04	Theory of Machines Lab		✓		Students are able to acquire skills related to analysis of mechanisms for a specified type of motion in machine.
36	201ME4L05	Mechanics of Solids & Metallurgy Lab		✓		Materials engineering subject develops the skill improvement of the student as it makes the student to understand the basic concepts of Metallurgy and materials science and various types of heat treatments of alloys. This helps the student to understand the melting point of different minerals and mixing of alloys to make a metal more efficient and durable.
37	201ME4L06	Thermal Engineering Lab		✓		Students are able to acquire analytical skills on working and performance of Incentives and Reciprocating compressors.
38	201SC4L15	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
39	201MC4T04	Essence of Indian Traditional Knowledge		✓		This subject demonstrate technical skills as they were able to understand concept of Traditional knowledge and its importance, enactments related to the protection of traditional knowledge and traditional knowledge in Agriculture and Medicine.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	191ME5T09	Dynamics of Machinery	✓			Students are able to acquire skills in analysing the machines in dynamic conditions and enabling them to be employed in automotive and aerospace industries.
41	191ME5T10	Design of Machine members-I	✓			Students are able to acquire skills related to design of machine members and enabling them to be employed in design engineering field.
42	191ME5T11	Thermal Engineering -II	✓			Students are able to acquire skills on basic knowledge of Rankine cycles, boilers, chimneys, gas turbines and enabling them to be employed in thermal power plants.
43	191ME5E01	Automobile Engineering	✓			Students are able to acquire skills related to the fundamental working principles and technologies and enabling them to be employed in automotive sector.
44	191ME5E02	Composite Materials	✓			Students are able to acquire skills related to design of unidirectional composites and laminates and can be placed as a materials engineer
45	191ME5E03	Fluid Engineering	✓			Students are able to acquire skills related to the efficiency of reciprocating and rotary pumps and compressors.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
46	191ME5E04	Mechanical Vibrations	✓			Students are able to acquire skills related to analysis of periodic responses of an vibrating system without and with damping systems.
47	191ME5E05	Metrology & Instrumentation	✓			Students are able to acquire skills related to the measurement of linear and angular measuring instruments, working of measuring instruments and control systems.
48	191ME5E06	Organizational Behavior	✓			Students are able to acquire skills on organizational communication and culture to cope up with the organization in a better way.
49	191CE5O01	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
50	191EE5O01	Electrical Safety	✓			Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.
51	191EE5O02	Electrical Materials	✓			Students are able to acquire skills related to electrical materials and enables them to get employed in power transmission company.
52	191EE5O03	Basic electrical Measurements	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	191EC5O01	Signals& Systems		✓		Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analysed and deciphered by complex data processing techniques.
54	191EC5O02	Digital Electronics& Logic Design	✓			Students are able to acquire skills related to design, and synthesize basic of digital ckts enabling them to be employed for designing and manufacturing of electronic equipment.
55	191EC5O03	Semi-conductor devices	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
56	191CS5O01	Data structures	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
57	191CS5O02	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.
58	191CS5O03	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
59	191CS5004	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
60	191IT5001	Data Base Management Systems	✓			Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.
61	191IT5002	Computer Graphics	✓			Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2d and 3d applications.
62	191MI5001	Overview of Mining		✓		This course demonstrates the technical skills of the student by giving them knowledge about life cycle of mines, ventilation, lighting and permanent lining of underground mines. It also gives knowledge about modern techniques of shaft sinking.
63	191PT5001	Process Intensification in Petroleum industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
64	191PT5002	Fundamentals of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of petroleum industry.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
65	191AG5O01	Basic Crop Production Practices	✓			Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as agricultural field manager
66	191ME5L05	Metrology/ICS Lab		✓		Students are able to acquire technical skills in measuring linear and angular measurements and calibrate pressure gauge, Temperature detectors and LVDT and enabling them to be employed in material characterization labs and various manufacturing industries.
67	191ME5L06	Theory of Machines Lab		✓		Students are able to acquire skills related to analysis of mechanisms for a specified type of motion in machine.
68	191ME5L07	Thermal Engineering Lab		✓		Students are able to acquire analytical skills on working and performance of Incentives and Reciprocating compressors.
69	191HS5T06	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
70	191PR5P02	Socially Relevant 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.
71	191MC5A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
72	191ME6T12	Heat Transfer	✓			Students are able to acquire analytical skills on the concept of heat transfer through conduction, convection, radiation and performance of heat exchangers enabling them to be employed in piping design industries.
73	191ME6T13	Design of Machine members-II	✓			Students are able to acquire skills related to design of machine members and enabling them to be employed in design engineering field.
74	191ME6T14	Metal Cutting. and Machine Tools		✓		Students are able to acquire skills and fundamental knowledge on principles of material removal processes, enabling them to be employed in manufacturing industries
75	191ME6E07	Industrial Engineering and Management			✓	Students are able to demonstrate Competency to understand the knowledge of industrial engineering domain and enabling them to be an entrepreneur.
76	191ME6E08	Mechatronics	✓			Students are able to demonstrate Competency to understand the knowledge of industrial engineering domain and enabling them to be an entrepreneur.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
77	191ME6E09	Non-Destructive Evaluation	✓			Students are able to acquire skills in characterizing the material behaviour through different Non-destructive evaluation methods and enabling them to be employed in automotive and aerospace industries.
78	191ME6E10	Refrigeration and Air Conditioning	✓			Students are able to acquire skills on working of refrigeration and air conditioning and enabling them to be employed in refrigeration and air conditioning industries.
79	191ME6E11	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
80	191ME6E12	Additive Manufacturing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
81	191ME6E13	Alternative Fuels	✓			Students are able to demonstrate technical skills on properties, performance and emission characteristics of various alternative fuels.
82	191ME6E14	Design for Manufacturing	✓			Students are able to demonstrate technical skills in design of manufacturing through consideration of cost, quality and reliability.
83	191ME6E15	Green Engineering Systems	✓			Students are able to acquire skills in analyzing the significance of alternative sources of energy, green energy systems.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
84	191ME6E16	Lean Manufacturing	✓			Students are able to acquire skills to apply various tools related to primary and secondary manufacturing processes.
85	191CE6O02	Disaster Management	✓			Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
86	191EE6O04	Energy Audit and Conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance activities, creates the interest among the students to have own company.
87	191EE6O05	Non-Conventional Energy Resources	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
88	191EE6O06	Instrumentation	✓			Students are able to acquire skills related to various types of electrical instruments that enable them to get employed in core (electrical) industry/company related to instrumentation of electrical parameters.
89	191ME6O07	Biomedical Instrumentation	✓			Students are able to acquire skills to understand and apply the biomedical instrumentation enabling them to be employed in various organizations, which developed and fabricate biomedical instruments like ECG etc.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
90	191ME6O08	ECAD Tools	✓			Students are able to acquire skills related to ECAD tools, enabling them to be employed as Design engineers
91	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
92	191CS6O06	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
93	191CS6O07	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
94	191CS6O08	Cyber Security	✓			Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
95	191CS6O09	AR/VR	✓			Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.
96	191IT6O03	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
97	191IT6O04	AI Tools & Techniques		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
98	191IT6O05	Robotic Process Automation		✓		Students are able to demonstrate technical skill to develop applications using UIPath Programming and extraction techniques to deploy robot configurations
99	191MI6O02	Industrial Safety Practices			✓	This course helps to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
100	191MI6O03	Electrical Equipment's in Mines		✓		This subject helps the student to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthing methods and applicability. This subject will guide the students of mining to be self-sufficient for the electrical related problems in mines.
101	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves.
102	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
103	191AG6O02	Weather Forecast in Agriculture	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
104	191AG6O03	Bio-energy Systems Design and Applications	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
105	191ME6L08	Machine Cutting and Machine Tools Lab		✓		Students are able to acquire skills to operate various machine tools. enabling them to be employed in Manufacturing sector.
106	191ME6L09	Heat Transfer Lab		✓		Students are able to demonstrate problem solving skills in calculating the heat transfer coefficient through conduction, convection and radiation.
107	191HS6T07	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.
108	191MC6A09	Professional Ethics and Human Values		✓		This subject help the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
109	171ME7T16	CAD/CAM	✓			Students are able to demonstrate problem solving skills for improving productivity and enhancing the best practices of the company.
110	171ME7T17	Mechatronics	✓			Students are able to demonstrate technical skills to measure the load, displacement and temperature using analogue and digital sensors.
111	171ME7T18	Finite Element Methods	✓			Students are able to acquire skills in solving differential equations in fields of structural analysis, heat transfer and fluid flow and enabling them to be employed in mechanical design industries as a FEA-Engineer
112	171ME7T19	Power Plant Engineering	✓			Students are able to acquire skills in analyzing the power plant economics and environmental considerations enabling them to be employed in power sector.
113	171ME7E10	Computational Fluid Dynamics	✓			Students are able to acquire skills related to understand the basics of computational fluid dynamics (CFD) and compare finite difference and finite volume methods applied in CFD and enabling them to be employed as Computational fluid dynamics engineer.
114	171ME7E11	Green Engineering Systems	✓			Students are able to acquire skills in analyzing the significance of alternative sources of energy, green energy systems.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
115	171ME7E12	Nano Materials and Technology	✓			Students are able to acquire skills related to synthesis and characterization of different nano materials for engineering and technological applications.
116	171ME7E13	Gas Dynamics	✓			Students are able to acquire skills in analyzing the behaviour of isentropic flow of ideal gases and enabling them to be employed gains employment in thermal power plants.
117	171ME7E14	Condition Monitoring	✓			Students are able to acquire skills in detecting the faults in the systems by monitoring several parameters to prevent major failures.
118	171ME7E15	Flexible Manufacturing Systems	✓			Students are able to acquire skills in implementing the flexible manufacturing systems and summarize the concepts of advanced flexible manufacturing systems.
119	171ME7L07	CAD/CFD Lab		✓		Students are able to acquire skills related to fundamental knowledge on various analytical tools for engineering simulation and enabling them to be employed in areas of computer aided design
120	171ME7L08	CAM/Mechatronics Lab		✓		Students are able to acquire skills in constructing the Computed numerical control programming for various machining operations, construct ladder diagrams for logical operations.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
121	171ME7P01	Industry Oriented (Internship) Mini Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in mechanical engineering 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
122	171ME8E16	Production Planning and Control	✓			Students are able to acquire skills in improving the concepts of production planning and production control techniques enabling them to be employed in manufacturing industries.
123	171ME8E17	Advanced Materials	✓			Students are able to acquire skills in synthesis and characterization of advanced materials.
124	171ME8E18	Thermal Equipment Design	✓			Students are able to acquire skills in analyzing the performance of different types of heat exchangers, vaporizer, evaporators enabling them to be employed in pipe design industries
125	171CE8O03	Electrical Safety Management	✓			Students are able to demonstrate safety skills by providing knowledge on hazards with growing penetration of electrical devices in strategic areas including Space, mining and Nuclear energy.
126	171ME8O03	Neural networks and fuzzy logic			✓	Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
127	171ME8P02	Major Project		✓		students will be able to demonstrate problem identification, analysis, design solutions or applications in mechanical engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
Total		127	74	42	7	


Program Coordinator
Head of the Department

Head of the Department
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Aditya Engineering College (A)
SURAMPALEM-533 437

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 modelling 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				
5	201ES1H01	Engineering Graphics and Design		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
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	201BS2T06	Transform Techniques		✓		Students are able to demonstrate problem solving skills by learning Fourier Transforms , Laplace Transforms, Z-Transforms and their applications
11	201BS2T09	Applied Physics				
12	201ES2I03	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.
13	201ES2T10	Basic Electrical Engineering	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits or networks enabling them to be employed for designing and manufacturing of electrical circuits.
14	201ES2T14	Network Analysis	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits/networks enabling them to be employed for designing and manufacturing of electrical/ electronic equipment.
15	201ES2L08	Electronics Engineering Workshop		✓		Students are able to demonstrate technical skill of identifying , specifications of various devices, their symbols. They can recognise and make use of various instruments, like CRO, FG etc
16	201BS2L04	Applied Physics Lab				
17	201ES2L13	Basic Electrical Engineering Lab				
18	201MC2L01	Professional Communication Skills 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.
19	201MC2T02	Constitution of India				This subject helps the student to demonstrate their technical skills

						for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.
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III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T10	Numerical Methods & Vector Calculus		✓		Students are able to demonstrate problem solving skills by learning numerical methods for solving equations, differential equations, integrals, vector differentiation and vector integration
21	201EC3T01	Electronic Devices and Circuits	✓			Students are able to acquire skills related to design, of electronic circuits/networks enabling them to be employed for designing and manufacturing of electronic equipment.
22	201EC3T02	Signals and Systems	✓			Students are able to acquire skills related to analysis of signals enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
23	201EC3T03	Digital Electronics and Logic Design	✓			Students are able to acquire skills related to design, of digital electronic circuits/networks enabling them to be employed for designing and manufacturing of electronic equipment.
24	201EC3T04	Random Variables and Stochastic Processes				
25	201EC3L01	Electronic Devices and Circuits Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits.
26	201EC3L02	Signals and Systems Lab		✓		Students are able to demonstrate technical skill of characterizing different types of digital filters.
27	201EC3L03	Digital Electronics and Logic Design Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits.
28	201SO3L04	Skill Oriented Course-I:Python Programming		✓		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.
29	201MC3T03	Biology for Engineers				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	201ES4T19	Linear Control Systems	✓			Students are able to acquire skills related to strategic methods to improving productivity and enhancing the best practices of the company that enables them to get employed in industries related to controlling of operations.
31	201EC4T05	Electronic Circuit Analysis	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electronic circuits/networks enabling them to be employed for designing and manufacturing of electronic equipment.
32	201EC4T06	Integrated Circuits and Applications	✓			Students are able to acquire skills related to basic ckt. design with linear ICs enabling them to be employed for designing and manufacturing of electronic equipment.
33	201EC4T07	Analog Communications	✓			Students are able to acquire skills related to basic analog communication systems enabling them to be employed for designing and manufacturing of basic transceivers
34	201HS4T03	Managerial Economics and Financial Analysis			✓	Students are able to demonstrate competency in the domain of business management enabling them to become an entrepreneur.
35	201EC4L04	Electronic Circuit Analysis Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with linear ICs in the fields of instrumentation, communications etc.
36	201EC4L05	Integrated Circuits and Applications Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with linear ICs in the fields of instrumentation, communications etc.
37	201EC4L06	Analog Communications Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of communication circuits.

38	201SC4L16	Skill Oriented Course-II: a) PCB Designing		✓		Students are able to demonstrate technical skill of Revit software enabling them to be employed in constructional industry
39	201SC4L17	Skill Oriented Course-II: b)Applications of Python Programming		✓		Students are able to demonstrate technical skill of designing and developing PCBs
40	201MC4T04	Essence of Indian Traditional Knowledge				

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	191EC5T08	Integrated Circuits and applications	✓			Students are able to acquire skills related to basic ckt. design with linear ICs enabling them to be employed for designing and manufacturing of electronic equipment.
42	191EC5T09	Digital Communications	✓			Students are able to acquire skills related to digital modulation and demodulation techniques, and noise performance, enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
43	191EC5T10	Antennas and Wave Propagation	✓			Imparts knowledge related to communication concepts, radiation and reception of radio waves using antennas, which is helpful in being employable in the field of communications
44	191EC5T11	Computer Networks	✓			Students are able to acquire skills related to design and evaluate the performance of computer networks enabling them to be employed for designing and manufacturing of networking equipment.
45	191EC5E03	Electromagnetic Interference & Compatibility	✓			Imparts knowledge related to electromagnetic interference caused by surrounding electronic and electrical systems and the techniques to overcome it, which is helpful in being employable in the field of communications and other fields of electronics
46	191EC5E01	Computer System Architecture	✓			Students are able to acquire skills related to design, and evaluate the performance of computers enabling them to be employed for designing and manufacturing of computer systems

47	191EC5E02	Digital System Design-I	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
48	191EC5E04	Python Programming		✓		Students are able to demonstrate programming skill in python
49	191CE5O01	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
50	191EE5O01	Electrical Safety				
51	191EE5O02	Electrical Materials				
52	191EE5O03	Renewable Energy Sources		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.
53	191ME5O02	Fundamentals of Mechanical Engineering	✓			Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.
54	191ME5O03	Supply Chain Management	✓			The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
55	191ME5O04	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
56	191ME5O05	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
57	191CS5O02	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.
58	191CS5O03	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.

59	191CS5O04	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
60	191IT5O01	Data Base Management Systems	✓			Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.
61	191IT5O02	Computer Graphics	✓			Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2d and 3d applications.
62	191MI5O01	Overview of Mining		✓		This course demonstrate the technical skills of the student by giving them knowledge about life cycle of mines, ventilation, lighting and permanent lining of underground mines. It also gives knowledge about modern techniques of shaft sinking.
63	191PT5O01	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications , modelling and analysis of process in Petroleum Industry.
64	191PT5O02	Fundamentals of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of petroleum industry.
65	191AG5O01	Basic Crop Production Practices	✓			Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as agricultural field manager
66	191EC5L05	Integrated Circuits and applications Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with linear ics in the fields of instrumentation, communications etc.
67	191EC5L06	Digital Communications Lab		✓		Develops practical skills required for development of basic communication circuits.
68	191HS5T06	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.

69	191PR5P02	Socially Relevant 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.
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VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
70	191EC6T12	Internet of Things	✓			Students are able to acquire skills related to design, assemble and program IoT building blocks enabling them to be employed for designing and assembling of IoTs
71	191EC6T13	VLSI Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of VLSI circuits enabling them to be employed for designing and manufacturing of complex electronic equipment in the fields of communications, control and instrumentation etc.
72	191EC6T14	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
73	191EC6E07	Information Theory and Coding	✓			Students are able to acquire skills related to operation and performance of digital communication equipment using error detecting, correcting and source coding techniques enabling them to be employed for designing and manufacturing of digital systems.
74	191EC6E06	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.
75	191EC6E05	Digital System Design-II	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
76	191EC6E08	Soft Computing Techniques	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of soft computing techniques enabling them to be employed for designing and manufacturing of efficient embedded systems.

77	191EC6E11	Radar Systems	✓			Students are able to acquire skills related to operation and performance of radar systems enabling them to be employed for designing and manufacturing of radar systems like tracking radars, scan radars etc.
78	191EC6E10	Embedded C	✓			Students are able to acquire skills related to programming using embedded C
79	191EC6E09	Design for Testability	✓			Students are able to acquire skills related to design, implement and evaluate the performance of test circuits built within the chip enabling them to be employed for designing and testing of complex systems
80	191EC6E12	Signal Transform Techniques	✓			Students are able to realise the importance of time frequency analysis and understand important transform techniques enabling them to be employed for designing and development of algorithms in the field of DSP,DIP and DVP.
81	191CE6O02	Disaster Management	✓			Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
82	191EE6O04	Energy Audit and Conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance actives, creates the intrust among the students to have own company.
83	191EE6O05	Non Conventional Energy resources	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
84	191ME6O06	Solar Energy Utilisation				
85	191ME6O07	Basic Thermodynamics and Heat Transfer				
86	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analysing the hydraulics and pneumatic systems
87	191ME6O09	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies

88	191ME6O06	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
89	191ME6O09	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.
90	191ME6O12	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
91	191ME6O07	Biomedical Instrumentation	✓			Students are able to acquire skills to understand the concepts of bio medical instrumentation and can be employed in fabrication of bio medical instruments
92	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
93	191CS6O06	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
94	191CS6O07	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
95	191CS6O08	Cyber Security	✓			Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
96	191CS6O09	AR / VR	✓			Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.
97	191IT6O03	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
98	191IT6O04	AI Tools & Techniques		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.

99	191IT6O05	Robotic Process Automation		✓		Students are able to demonstrate technical skill to develop applications using UIPath Programming and extraction techniques to deploy robot configurations
100	191MI6O02	Industrial Safety Practices				
101	191MI6O03	Electrical Equipment's in Mines		✓		This subject helps the student to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthing methods and applicability. This subject will guide the students of mining to be self sufficient for the electrical related problems in mines.
102	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves .
103	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
104	191AG6O02	Weather forecast in Agriculture	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
105	191AG6O03	Bio-energy systems design and applications	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
106	191EC6L08	VLSI Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in the field of VLSI.
107	191EC6L07	Internet of Things Lab		✓		Students are able to demonstrate technical skill of establishing IoTs
108	191HS6T07	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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
109	171EC7T16	Microwave Engineering	✓			Students are able to acquire skills related to microwave devices, enabling them to be employed for designing and manufacturing of radio communication equipment.
110	171EC7T17	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 , radar systems etc.
111	171EC7T18	Electronic Measurements And Instrumentation	✓			Students are able to acquire skills related to design, analyze and evaluate the performance of instrumentation systems enabling them to be employed for designing and manufacturing of measuring instruments, biomedical instrumentation etc.
112	171EC7T19	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
113	171EC7E10	Digital Signal Processors	✓			Students are able to acquire skills related to design, program and implement digital signal processing systems and evaluate their performance enabling them to be employed for designing and manufacturing of electronic equipment with DSP processors infields like biomedical instrumentation, speech detection systems etc.
114	171EC7E11	Embedded Systems	✓			Students are able to acquire skills related to design, program and implement embedded systems enabling them to be employed for designing and manufacturing of biomedical, communication and radar equipment .
115	171EC7E12	Cellular and Mobile Communications	✓			Students are able to acquire skills related to operation and performance of cellular mobile communication systems enabling them to be employed for designing , manufacturing installing and troubleshooting of mobile communication systems.

116	171EC7E13	Analog IC Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of current mirrors, amplifiers and opamps enabling them to be employed for designing and manufacturing of analog ICs
117	171EC7E14	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.
118	171EC7E15	Radar Systems	✓			Students are able to acquire skills related to operation and performance of radar systems enabling them to be employed for designing and manufacturing of radar systems like tracking radars, scan radars etc.
119	171EC7L10	Microwave Engineering and Optical Communications Lab		✓		Students are able to demonstrate technical skill of characterizing microwave devices, and optical communication devices modelling and analysis of microwave and optical communication circuits.
120	171EC7L11	Digital Signal and Image Processing Lab		✓		Students are able to demonstrate technical skill of application of various algorithms in the fields of communications and image processing fields.
121	171EC7P01	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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
122	171EC8E16	Mixed Signal IC Design		✓		Students are able to demonstrate technical skill of characterizing microwave devices, and optical communication devices modelling and analysis of microwave and optical communication circuits.
123	171EC8E17	Wireless Sensors and Networks		✓		Students are able to demonstrate technical skill of application of various algorithms in the fields of communications and image processing fields.
124	171EC8E18	Satellite Communications	✓			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.
125	171EC8O01	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
126	171CE8O04	Waste Water Management		✓		Students are able to demonstrate technical skill of characterizing various waste water treatment technologies
127	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.
128	171EC8O02	Disaster Management	✓			Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
129	171EE8O07	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
130	171EC8O03	Neural Networks	✓			Gives knowledge related to ANN and applications, which leads to better employability in the field of machine learning.

131	171CE8O03	Alternative Energy Sources		✓		Students are able to demonstrate technical skill of characterizing different Alternative Energy Sources , modelling and analysis of Automobiles..
132	171CE8O02	Database Management Systems	✓			Students are able to acquire skills related to SQL commands, constraints, views, pl/SQL programming enabling them to be employed for backend developer
133	171EC8O04	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
134	171CE8O06	Green Fuel Technologies		✓		Students are able to demonstrate technical skill of characterizing different energy resources , modelling and analysis of energy sector
135	171EC8P02	Major 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.
TOTAL		135	72	41	6	



PROGRAM COORDINATOR



HEAD OF THE DEPARTMENT

Head of the Department
Department of E.C.E.
Aditya Engineering College (A9)

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 modelling 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, 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 Data 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 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.
19	201MC2T02	Constitution of India		✓		This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic

						India, to make them understand the executive, legislative and judiciary system.
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III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201CS3T01	Advanced Data Structures		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
21	201CS3T02	Object Oriented Programming through C++	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
22	201CS3T03	Operating Systems	✓			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	201CS3T04	Software Engineering				
24	201BS3T13	Discrete Mathematics		✓		Students are able to demonstrate problem solving skills by learning Mathematical logic , Inference Theory, Graph Theory .
25	201CS3L01	Object Oriented Programming through C++ 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	201CS3L02	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 which enables them to be employed for Hardware core side job opportunities
27	201CS3L03	Unix and Shell 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 which enables them to be employed for Hardware core side job opportunities
28	201SC3L05	Applications of python-numpy	✓			Students are able to acquire skills related to python-NumPy programming, enabling them to be employed as software developers.

29	201SC3L06	web application development using full stack frontend development-module –I	✓			Students are able to acquire skills related to developing web pages using full stack enabling them to be employed as Front End developers.
30	201MC3T03	Biology for Engineers				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	201BS4T16	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.
32	201CS4T05	Formal Languages and Automata Theory		✓		Students' area able to acquire technical skills related to list, dictionaries, tuples, functions, classes and statistic methods in R tool
33	201CS4T06	Database Management Systems		✓		Students will be able to acquire technical skills related to Finite Automata, Grammars and Parsers.
34	201CS4T07	Java programming	✓			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	201HS4T03	Managerial Economics and Financial Accountancy			✓	Students are able to demonstrate competency in the domain of business management enabling them to become an entrepreneur.
36	201CS4L04	Database Management Systems Lab	✓			Students are able to acquire skills relates to software engineering, project estimation and management enabling them to acquire employed as software developer.
37	201CS4L05	Java Programming Lab	✓			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
38	201CS4L06	R Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
39	201SC4L18	Applications of python-pandas		✓		Students are able to demonstrate programming skill in python programming.
40	201SC4L19	Web application development using full stack frontend development module-II		✓		Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.

41	201MC4T04	Essence of Indian Traditional Knowledge				
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V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
42	191CS5T08	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.
43	191CS5T09	Computer Networks	✓			
44	191CS5T10	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
45	191CS5T11	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
46	191CS5E04	Functional and Logic Programming	✓			Students are able to understand and acquire skills related to different approaches to solving problems: functional decomposition and declarative programming which enables them to be employed as software engineers.
47	191CS5E01	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.
48	191CS5E02	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
49	191CS5E05	Software Requirement and Estimation		✓		Students are able to demonstrate technical skills related to Identify the software requirements for a given project.
50	191CS5E03	Computer Graphics				

51	191CE5O01	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
52	191EE5O01	Electrical Safety		✓		Students are able to demonstrate safety skills by providing knowledge on hazards with growing penetration of electrical devices in strategic areas including Space, mining and Nuclear energy.
53	191EE5O02	Electrical Materials		✓		Students are able to demonstrate technical skills in manufacturing of the electrical components depending on the application.
54	191EE5O03	Basic Electrical Measurements		✓		Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
55	191ME5O01	Renewable Energy Sources		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.
56	191ME5O02	Fundamentals of Mechanical Engineering		✓		Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.
57	191ME5O03	Supply Chain Management		✓		The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
58	191ME5O04	3D Printing		✓		Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
59	191ME5O05	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
60	191EC5O01	Signals & Systems		✓		Skill Development: Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analysed and deciphered by complex data processing techniques.

61	191EC5O02	Digital Electronics and Logic Design	✓			Students are able to acquire skills related to design, and synthesize basic of digital CKTS enabling them to be employed for designing and manufacturing of electronic equipment.
62	191EC5O03	Semi conductor devices	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
63	191CS5O01	Data Structures	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
64	191CS5O02	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.
65	191CS5O03	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
66	191CS5O04	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
67	191IT5O01	Data Base Management Systems	✓			Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.
68	191IT5O02	Computer Graphics	✓			Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2D and 3D applications.
69	191MI5O01	Overview of Mining		✓		This course demonstrate the technical skills of the student by giving them knowledge about life cycle of mines, ventilation, lighting and permanent lining of underground mines. It also gives knowledge about modern techniques of shaft sinking.
70	191PT5O01	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.

71	191PT5O02	Fundamentals of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of petroleum industry.
72	191AG5O01	Basic Crop Production Practices	✓			Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as agricultural field manager
73	191CS5L04	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 with computer networks which enables them to be employed for Hardware core side job opportunities
74	191CS5L05	Database Management Systems Lab	✓			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
75	191HS5T06	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.
76	191PR5P02	Socially Relevant 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.
77	191MC5A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
78	191CS6T12	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.
79	191CS6T13	Object Oriented Analysis and Design		✓		Students are able to acquire technical skills to develop different UML diagrams like use case, class, sequence, collaboration, component and deployment diagrams
80	191CS6T14	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as Front End developers.
81	191CS6E09	Scripting languages		✓		Students are able to acquire programming skills related to building scripts that control a sequence of operations.
82	191CS6E06	Advance Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of Advanced operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities
83	191CS6E08	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
84	191CS6E10	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
85	191CS6E07	Image Processing		✓		Students are able to acquire technical skills related to image processing by using various tools related to computer vision.
86	191CS6E11	C# .Net	✓			Students are able to acquire technical and programming skills related to concepts Design user experience and functional requirements C#.NET application enabling them to be employed as software developers.
87	191CS6E13	Distributed Systems				

88	191CS6E14	Natural Language Processing		✓		Students are able to demonstrate technical skills related to the principles and methods of statistical natural language processing.
89	191CS6E15	Software Quality Assurance		✓		Students are able to demonstrate technical skills by Understanding the fundamental concepts of software automation
90	191CS6E12	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector
91	191CE6O02	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
92	191EE6O04	Energy Audit and Conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance actives, creates the interest among the students to have own company.
93	191EE6O05	Non Conventional Energy resources	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
94	191EE6O06	Instrumentation	✓			Students are able to acquire skills related to various types of electrical instruments that enable them to get employed in core (electrical) industry/company related to instrumentation of electrical parameters.
95	191ME6O06	Solar Energy Utilisation	✓			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 industries
96	191ME6O07	Basic Thermodynamics and Heat Transfer		✓		Students are able to acquire skills to understand the concepts of bio medical instrumentation and can be employed in fabrication of bio medical instruments.
97	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analysing the hydraulics and pneumatic systems
98	191ME6O09	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.

99	191ME6O06	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 industries
100	191ME6O09	Management Science	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
101	191ME6O12	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
102	191ME6O07	Biomedical Instrumentation		✓		Students are able to acquire skills to understand the concepts of bio medical instrumentation and can be employed in fabrication of bio medical instruments.
103	191ME6O08	ECAD Tools		✓		Students are able to demonstrate problem solving skills in analysing the hydraulic and pneumatic systems
104	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
105	191CS6O06	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
106	191CS6O07	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as Front End developers.
107	191CS6O08	Cyber Security	✓			Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
108	191CS6O09	AR / VR	✓			Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.
109	191IT6O03	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.

110	191IT6O04	AI Tools & Techniques		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
111	191IT6O05	Robotic Process Automation		✓		Students are able to demonstrate technical skill to develop applications using UI Path Programming and extraction techniques to deploy robot configurations
112	191MI6O02	Industrial Safety Practices				
113	191MI6O03	Electrical Equipment's in Mines		✓		This subject helps the student to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthing methods and applicability. This subject will guide the students of mining to be self sufficient for the electrical related problems in mines.
114	191PT6O03	Unconventional Hydrocarbon Resources			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
115	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
116	191AG6O02	Weather forecast in Agriculture	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
117	191AG6O03	Bio-energy systems design and applications	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
118	191CS6L06	Data Mining and Object Oriented Analysis and Design Lab	✓			Students are able to acquire skills related to concepts of object-oriented programming and data mining, enabling them to be employed as software developers and analysts.
119	191CS6L07	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as Front End developers.
120	191HS6T07	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.
121	191MC6A09	Professional Ethics and Human Values		✓		This subject helps the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
122	171CS7T18	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.
123	171CS7T19	UML and Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
124	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
125	171HS7T05	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.
126	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.
127	171CS5E14	Big Data Analytics	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
128	171CS7E15	Image Processing		✓		Students are able to acquire technical skills related to image processing by using various tools related to computer vision.
129	171CS7E16	Cyber Laws		✓		The students are able to demonstrate Technical skills by Modelling of cyber laws and security.
130	171CS7E17	Middleware Technologies		✓		Students are able to acquire technical skills related to transfer information from one program to one or more other programs in a distributed environment


131	171CS7E18	Artificial Intelligence and Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
132	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.
133	171CS7E20	Mobile Computing		✓		Students are able to demonstrate technical skill of mobile computing nomenclature to describe and analyze existing mobile computing frameworks and architectures
134	171CS7L12	UML and Design Patterns Lab		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
135	171CS7L13	Big Data Analytics Lab	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
136	171CS7P01	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
137	171CS8E21	Agile Methodologies	✓			Students are able to acquire skills relates to software Process models and enabling them to acquire employed as software developer.
138	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.
139	171CS8E23	Distributed Databases		✓		Students are able to demonstrate technical skills of Query Optimization, Reliability and Concurrency Control in projects.
140	171CS8E24	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.
141	171CS8O01	Microprocessor and Multi Core Systems		✓		Students are able to demonstrate technical skills of modern multi-core processors and its applications.
142	171CS8O02	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.
143	171CS8O03	Soft Computing		✓		Students are able to acquire technical skills of Implement, evaluate and compare solutions by various soft computing approaches for finding the optimal solutions.
144	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.
145	171CS8O04	Operations Research		✓		Students are able to demonstrate technical skill to formulate and solve problems as networks and graphs.
146	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
147	171EE8O07	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
148	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
149	171CS8O06	Renewable Energy sources		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.
150	171CS8O07	Nano Technology and its Applications		✓		Students are able to acquire technical skills by understanding the basic mathematical techniques for describing nano systems
151	171CS8P02	Project Work	✓			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		151	71	59	9	


Program Coordinator


Head of the Department
Head of the Department
Department of CSE
ANITVA ENGINEERING COLLEGE (AO)

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 earning numerical methods for solving equations, differential equations, integrals, analytical properties of functions of complex variables, 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	201BS2T09	Applied Physics Lab	✓			

16	201ES2L06	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.
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	201CS3T01	Advanced data structures	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
21	201CS3T02	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.
22	201CS3T03	Operating Systems				
23	201CS3T04	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	201BS3T13	Discrete Mathematics		✓		Students are able to demonstrate problem solving skills by learning Mathematical logic , Inference Theory, Graph Theory .
25	201CS3L01	Object Oriented Programming through C++ 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	201CS3L02	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 which enables them to be employed for Hardware core side job opportunities
27	201CS3L03	Unix and Shell Programming Lab		✓		Students can demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
28	201SO3L05	Applications of Python numpy		✓		Students are able to apply technical skills related to basics of numpy, arrays in numpy, data representation and preprocessing in numpy
29	201SO3L06	Web application development using full stack frontend development – module –I		✓		Students are able to apply technical skills related to HTML, HTML5, CSS and CSS3
30	201MC3T03	Biology for Engineers				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	201BS4T16	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.
32	201CS4T05	Formal Languages and Automata Theory		✓		Students will be able to acquire technical skills related to Finite Automata, Grammars and Parsers.
33	201CS4T06	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
34	201CS4T07	Java programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
35	201HS4T03	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.

36	201CS4L04	Database Management Systems Lab	✓			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.
37	201CS4L05	Java Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
38	201CS4L06	R Programming Lab		✓		Students are able to acquire technical skills related to list, dictionaries, tuples, functions, classes and statistical methods in R tool
39	201SC4L18	Applications of python-pandas		✓		Students are able to acquire technical skills related to pandas dataframe and series, Preprocessing of dataframe and data cleaning and transformation techniques.
40	201SC4L19	Web application development using full stack frontend development module-II		✓		Students are able to acquire technical skills related to Javascript and XML.
41	201MC4T04	Essence of Indian Traditional Knowledge		✓		

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
42	191CS5T08	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.
43	191CS5T09	Computer Networks				
44	191CS5T10	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.
45	191CS5T11	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
46	191CS5E04	Functional and Logic Programming	✓			Students will be able to acquire technical skills related to logic programming, lists, classes and event handling which enable them to be employed as software developer
47	191CS5E01	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.

48	191CS5E02	Artificial Intelligence		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
49	191CS5E05	Software Requirement and Estimation				
50	191CS5E03	Computer Graphics	✓			Students are able to acquire related 2D,3D graphical representations and basic graphic programming using OpenGL enabling them to employed as graphic designer.
51	191CE5O01	Basic Concrete Technology	✓			Students are able to acquire skills related to basic properties of concrete, design, testing of concrete enabling them to be employed for designing and constructional activities.
52	191EE5O01	Electrical Safety		✓		Students are able to demonstrate safety skills by providing knowledge on hazards with growing penetration of electrical devices in strategic areas including Space, mining and Nuclear energy.
53	191EE5O02	Electrical Materials		✓		Students are able to demonstrate technical skills in manufacturing of the electrical components depending on the application.

54	191EE5O03	Basic Electrical Measurements	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
55	191ME5O01	Renewable Energy Sources		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.
56	191ME5O02	Fundamentals of Mechanical Engineering		✓		Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.
57	191ME5O03	Supply Chain Management		✓		Students are able to acquire skills related to concepts of different levels of supply chain management
58	191ME5O04	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
59	191ME5O05	Entrepreneurship Development and Incubation	✓			Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
60	191EC5O01	Signals and Systems		✓		Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analyzed and deciphered by complex data processing techniques.

61	191EC5002	Digital Electronics and Logic Design	✓			Students are able to acquire skills related to design, and synthesize basic of digital ckts enabling them to be employed for designing and manufacturing of electronic equipment.
62	191EC5003	Semiconductor devices	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
63	191CS5001	Data Structures		✓		Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems.
64	191CS5002	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.
65	191CS5003	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
66	191CS5004	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
67	191IT5001	Data Base Management Systems	✓			Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.

68	191IT5O02	Computer Graphics		✓		Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2d and 3d applications.
69	191MI5O01	Overview of Mining		✓		Students are able to demonstrate technical skill of characterizing different intensifications , modeling and analysis of process in Petroleum Industry.
70	191PT5O01	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications , modeling and analysis of process in Petroleum Industry.
71	191PT5O02	Fundamentals of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams , modeling and analysis of petroleum industry.
72	191AG5O01	Basic Crop Production Practices	✓			Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as agricultural field manager
73	191CS5L04	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 and computer networks which enables them to be employed for Hardware core side job opportunities
74	191CS5L05	Database Management Systems Lab	✓			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

75	191HS5T06	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.
76	191PR5P02	Socially Relevant 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.
77	191MC5A08	Intellectual Property Rights and Patents				

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
78	191CS6T12	Data Ware Housing 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.
79	191CS6T13	Object Oriented Analysis of Design		✓		Students are able to acquire technical skills to develop different UML diagrams like usecase, class, sequence, collaboration, component and deployment diagrams
80	191CS6T14	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
81	191CS6E09	Scripting languages		✓		Students are able to acquire programming skills related to building scripts that control a sequence of operations.
82	191CS6E06	Advance Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of Advanced operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities
83	191CS6E08	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.

84	191CS6E10	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
85	191CS6E07	Image Processing		✓		Students are able to acquire technical skills related to image segmentation, preprocessing and cleaning techniques.
86	191CS6E11	C# .Net	✓			Students are able to acquire technical skills related to classes, OPP's, inheritance, polymorphism, web development concepts in c# which enable them to be employed as C# developer.
87	191CS6E13	Distributed Systems				
88	191CS6E14	Natural Language Processing		✓		Students are able to acquire technical skills related to word stemming and lemmatization, word preprocessing, word identification, frequency techniques and algorithms needed for language processing.
89	191CS6E15	Software Quality Assurance		✓		Students are able to demonstrate technical skills by Understanding the fundamental concepts of software automation
90	191CS6E12	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector
91	191CE6O02	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

92	191EE6O04	Energy Audit and Conservation Management			✓	the course focuses on the loss and profit studeies and other copmany maintenace activies, creates the intrust amoung the students to have own company.
93	191EE6O05	Non-Conventional Energy resources	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get emplyed in renewable energy generation sector.
94	191EE6O06	Instrumentation	✓			Students are able to acquire skills related to various types of electrical instrunments that enable them to get employed in core (electrcal) industry/company releted to instrunmnetation of electial parameters.
95	191ME6O06	Solar Energy Utilization		✓		Students are able to demonstrate problem solving skills in analyzing the basic thermodynamics and basic heat transfer mechanisms.
96	191ME6O07	Basic Thermodynamics and Heat Transfer		✓		Students are able to demonstrate problem solving skills in analyzing the basic thermodynamics and basic heat transfer mechanisms.
97	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analyzing the concepts of hydraulic systems, pneumatic systems and its components.
98	191ME6O09	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.

99	191ME6O10	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
100	191EC6O04	Biomedical Instrumentation	✓			Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
101	191EC6O05	ECAD Tools	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
102	191ME6O11	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.
103	191IT6O03	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
104	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
105	191CS6O06	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
106	191IT6O04	AI Tools and Techniques		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.

107	191CS6O07	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
108	191IT6O05	Robotic Process Automation		✓		Skill development applications using UiPath Programming and extraction techniques to deploy robot configurations
109	191CS6O08	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.
110	191CS6O09	AR / VR	✓			Students are able to acquire skills related to Designing and Developing 3d User Interfaces, 3D Interaction Techniques and Virtual Reality applications that enabling them to be employed as interior designers and developer in industry.
111	191MI6O02	Industrial Safety Practices				
112	191MI6O03	Electrical Equipment's in Mines				
113	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing Resources
114	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Asset Management.

115	191AG6O02	Weather forecast in Agriculture	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
116	191AG6O03	Bio-energy systems design and applications	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
117	191ME6O12	Entrepreneurship Development and Incubation	✓			Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
118	191CS6L06	Data Mining and Object Oriented Analysis of Design Lab		✓		Students are able to acquire technical skills to develop different UML diagrams like usecase, class, sequence, collaboration, component and deployment diagrams and also apply different mining algorithms
119	191CS6L07	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
120	191HS6T07	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.
121	191MC6A09	Professional Ethics and Human Values			✓	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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
122	171CS7T18	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.
123	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.
124	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
125	171IT7T06	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.
126	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.
127	171IT7E06	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.

128	171CS7E15	Image Processing		✓		Students are able to acquire technical skills related to image preprocessing, image segmentation, classification algorithms
129	171CS7E16	Cyber Laws		✓		Students are able to acquire skills related to cybercrimes, laws and acts to protect data from cyber thefts
130	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.
131	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.
132	171IT7E08	Distributed Systems				Students are able to acquire skills to understand the protocols and architectures needed to establish a distributed network
133	171IT7E09	Decision Support System				Students are able to acquire skills related to classification and regression techniques
134	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.
135	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.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
137	171CS8E21	Agile Methodologies	✓			Students are able to acquire skills relates to software Process models and enabling them to acquire employed as software developer.
138	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.
139	171CS8E23	Distributed Databases		✓		Students are able to demonstrate technical skills of Query Optimization, Reliability and Concurrency Control in projects.
140	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).
141	171IT8O01	Management Information System		✓		Students are able to demonstrate technical skill to demonstrate System Analysis, Design and decision making in a business environment.
142	171CS8O01	Microprocessor and Multi Core Systems		✓		Students are able to demonstrate technical skills of modern multi-core processors and its applications.
143	171CS8O02	Embedded Systems		✓		Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System.
144	171IT8O02	Computer Vision		✓		Students are able to demonstrate technical skill of implementing Camera and Projection models, image formation, image features, image calibration techniques and implement image segmentation and object

						identification techniques.
145	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.
146	171CS8O04	Operations Research		✓		Students are able to demonstrate technical skill to formulate and solve problems as networks and graphs.
147	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
148	171EE8O07	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
149	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
150	171CS8O07	Nano Technology and its Applications		✓		Students are able to acquire technical skills by understanding the basic mathematical techniques for describing nano systems.
151	171IT8P02	Major 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.
152	171EC8O02	Disaster		✓		Students are able to demonstrate technical skill of characterizing various disasters occurring in the environment and apply them in various

		Management				disciplines of day to day life
153	171CS8O06	Renewable Energy sources		✓		Students are able to acquire technical skills by understanding the basic mathematical techniques for describing nano systems
154	171CS8O07	Nano Technology and its Applications		✓		students will be able to demonstrate problem identification, analysis, design solutions or applications in Nano technology
155	171CS8P02	Project Work	✓			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		155	74	58	13	



Program coordinator



Head of the Department

Head of the Department
Department of IT
Aditya Engineering College

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 modelling physical phenomenon using partial differential equations, vector differentiation, vector integration and their applications in various engineering disciplines.
3	201BS1T02	Engineering Physics				
4	201ES1T03	Essential Electrical and Electronics Engineering		✓		This subject helps the student to demonstrate their technical skills by analyzing various electrical networks, knowing the operation of Dc generators, analyzing the performance of single phase transformers and 3-phase induction motors. This will create skills among student so that wherever they will find these types of machine they deal with their complexities.
5	201ES1T05	Engineering Graphics		✓		This subject helps the student to demonstrate technical skills as they have knowledge about engineering drawing and AutoCAD software for orthographic projections and isometric projection.
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	201BS1L01	Engineering Physics Lab				
8	201ES1L03	Essential Electrical and Electronics Engineering Lab		✓		This subject helps the student to demonstrate technical skills as they are able to analyze electrical networks using network theorems, performance of AC and DC Machines, diode characteristics and its application and simulation of diode and transistor.
9	201MC1T01	Environmental Science				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	201BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations, vector differentiation , vector integration and their applications in various engineering disciplines.
11	201BS2T08	Chemistry of Materials				
12	201ES2T06	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.
13	201ES2T08	Programming for Problem Solving Using C	✓			Students are able to acquire skills related to basic programming using C, enabling them to be employed as software developers.
14	201ES2L07	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.
15	201ES2L12	Computer Aided Drafting Lab		✓		Students are able to acquire skills related to drafting of mechanical components/assemblies through AUTOCAD software enabling them to be employed as a design engineer.
16	201HS2L02	Professional Communications Skills 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.
17	201BS2L05	Engineering Chemistry Lab				
18	201ES2L10	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.
19	201MC2T02	Constitution of India		✓		This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T14	Numerical Methods and integral transforms		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using Numerical Methods and integral transforms in various engineering disciplines.
21	201PT3T01	Principles of Geology for Petroleum Engineers		✓		Students are able to demonstrate technical skill of characterizing different rocks , modelling and analysis of model of structures.
22	201PT3T02	Material Balance and Energy		✓		Students are able to demonstrate Problem solving skills to analyze Material Balance relations and performance characteristics of it.
23	201PT3T03	Petroleum Exploration	✓			Students are able to demonstrate technical skill of characterizing different exploration methods, modelling and analysis of structures.
24	201PT3T04	Fluid Mechanics for Petroleum Engineers		✓		Students are able to acquire skills related to various aspects of various fluid flow behaviour and designing of fluid flow enabling them to be employed as production engineers.
25	201PT3L01	Principles of Geology for Petroleum Engineers Lab		✓		Students are able to demonstrate technical skill of characterizing different rocks , modelling and analysis of model of structures.
26	201PT3L02	Fluid Mechanics for Petroleum Engineers Lab		✓		Students are able to acquire skills related to various aspects of various fluid flow behaviour and designing of fluid flow enabling them to be employed as production engineers.
27	201PT3L03	Mathematical Methods Lab	✓			Students are able to acquire skills related to various aspects of various mathematical Methods enabling them to be employed as production engineers.
28	201SC3L10	Skill oriented course -Industry Exploration Project	✓			Students are able to demonstrate technical skill of various exploration elements using equipment's and software's

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
29	201ES4T20	Mechanical and Materials Science and Engineering	✓			Students are able to acquire skills related to various aspects of material design enabling them to be employed as material designers
30	201BS4T17	Complex Variables and Statistical Methods		✓		Students are able to demonstrate problem solving skills by analytical properties of functions of complex variables and their applications and also about random variables, sampling theory, test of hypothesis.
31	201PT4T05	Petroleum Geology	✓			Students are able to acquire skills related to various aspects of different structures, traps, stratigraphy's enabling them to be employed as petroleum and sedimentary geologists.
32	201PT4T06	Heat Transfer Operations		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using heat flow systems, study of temperature behaviour in various engineering disciplines.
33	201HS4T06	Management and Organizational Behavior		✓		
34	201ES4L16	Mechanical and Materials Science and Engineering Lab		✓		Students are able to acquire skills related to various aspects of material design enabling them to be employed as material designers
35	201PT4L04	Heat Transfer Operations Lab		✓		Students are able to acquire skills related to various aspects of heat flow systems, study of temperature behaviour in petroleum systems enabling them to be employed as production engineers.
36	201PT4L05	Petroleum Geology Lab	✓			Students are able to acquire skills related to various aspects of different geological structures enabling them to be employed as geologists.
37	201SC4L21	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
38	191PT5T08	Instrumentation and Process Control		✓		Students are able to demonstrate technical skill of characterizing different controllers, modelling and analysis of control valves.
39	191PT5T09	Well Logging and Mud Logging		✓		Students are able to demonstrate technical skill of characterizing different logging tools, modelling and analysis of formations.
40	191PT5T10	Drilling Technology		✓		Students are able to demonstrate technical skill of characterizing different drilling methods, modelling and analysis of well bore.
41	191PT5T11	Thermodynamics for Petroleum Engineers				Students are able to demonstrate technical skill of characterizing different Thermodynamics, modelling and analysis of production process.
42	191PT5E03	Well Engineering and Design		✓		Students are able to demonstrate technical skill of characterizing different well designs, modelling and analysis of well bore.
43	191PT5E02	Pipeline Engineering		✓		Students are able to demonstrate technical skill of characterizing different material behaviours , modelling and analysis of pipeline operations.
44	191PT5E01	Natural Gas Engineering and Processing		✓		Students are able to demonstrate technical skill of characterizing different Separation Techniques, modelling and analysis of distribution .
45	191CE5O01	Basic Concrete Technology				Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
46	191EE5O01	Electrical Safety				
47	191EE5O02	Electrical Materials				
48	191EE5O03	Basic Electrical Measurements				
49	191ME5O01	Renewable Energy Sources				
50	191ME5O02	Fundamentals of Mechanical Engineering		✓		Students are able to acquire skills related to concepts of fundamentals of thermal , manufacturing and design fields in mechanical engineering.

51	191ME5O03	Supply Chain Management	✓			students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
52	191ME5O04	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
53	191ME5O05	Entrepreneurship Development and Incubation	✓			Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
54	191EC5O01	Signals & Systems		✓		Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analyzed and deciphered by complex data processing techniques.
55	191EC5O02	Digital Electronics and Logic Design	✓			Students are able to acquire skills related to design, and synthesize basic of digital ckts enabling them to be employed for designing and manufacturing of electronic equipment.
56	191EC5O03	Semi conductor devices	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
57	191CS5O01	Data Structures	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
58	191CS5O02	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.
59	191CS5O03	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
60	191CS5O04	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
61	191IT5O01	Data Base Management Systems	✓			Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.

62	191IT5O02	Computer Graphics	✓			Students are able to acquire related 2D,3D graphical representations and basic graphic programming using OpenGL enabling them to employed as graphic designer.
63	191MI5O01	Overview of Mining	✓			students to understand atmosphere and mine atmosphere conditions, heat and humidity levels in mines. It also help students to know about standards planning and layout.
64	191PT5O01	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications , modelling and analysis of process in Petroleum Industry.
65	191PT5O02	Fundamentals of Petroleum Industry				Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of operations.
66	191AG5O01	Basic Crop Production Practices	✓			Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as agricultural field manager
67	191PT5L04	Drilling Fluids Lab		✓		Students are able to acquire skills related to different aspects of various mud behaviour enabling them to be employed as mud engineers.
68	191PT5L05	Instrumentation, Process Dynamics and Control Lab		✓		Students are able to acquire skills related to various aspects of different controllers behaviour enabling them to be employed as production engineers.
69	191ES5T16	Employability Skills – III	✓			Students are able 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.
70	191PR5P01	Socially Relevant Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in petroleum technology domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
71	191PT6T12	Petroleum Refinery and Petrochemical Engineering		✓		Students are able to demonstrate technical skill of characterizing different heaters, treaters, distillation columns , modelling and analysis of refinery.
72	191PT6T13	Petroleum Production Engineering		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of production.
73	191PT6T14	Petroleum Reservoir Engineering-I		✓		Students are able to demonstrate technical skill of characterizing different rock properties , modelling and analysis of reservoir.
74	191PT6E06	Well Completions, Testing and Services		✓		Students are able to demonstrate technical skill of characterizing different wells , modelling and analysis of completions.
75	191PT6E05	Operational and Maintenance of Pipelines		✓		Students are able to demonstrate technical skill of characterizing different pipe operations, modelling and analysis of pipelines.
76	191PT6E04	Fundamentals of Liquefied Natural gas		✓		Students are able to demonstrate technical skill of characterizing different gas components, modelling and analysis of liquification's.
77	191PT6E09	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves .
78	191PT6E08	Storage and Transportation of Crude oil and Natural gas		✓		Students are able to demonstrate technical skill of characterizing different Crude oil and Natural gas, modelling and analysis of distribution .
79	191PT6E07	Advanced Separation Techniques		✓		Students are able to demonstrate technical skill of characterizing different Separation Techniques, modelling and analysis of distribution .
80	191CE6O02	Disaster Management		✓		Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
81	191EE6O04	Energy Audit and Conservation Management			✓	Students are able to focuses on the loss and profit studies and other company maintenance actives, creates the intrust among the students to have own company.

82	191EE6O05	Non Conventional Energy resources		✓		Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
83	191EE6O06	Instrumentation		✓		Students are able to acquire skills related to design, analyze and evaluate the performance of instrumentation systems enabling them to be employed for designing and manufacturing of measuring instruments, biomedical instrumentation etc.
84	191ME6O06	Solar Energy Utilisation		✓		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 industries
85	191ME6O07	Basic Thermodynamics and Heat Transfer		✓		Students are able to acquire skills to understand the concepts of bio medical instrumentation and can be employed in fabrication of bio medical instruments.
86	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analysing the hydraulics and pneumatic systems
87	191ME6O09	3D Printing		✓		Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
88	191ME6O06	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
89	191ME6O09	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.
90	191ME6O12	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
91	191ME6O07	Biomedical Instrumentation		✓		Students are able to acquire skills to understand and apply the biomedical instrumentation enabling them to be employed in various organizations, which developed and fabricate biomedical instruments like ECG etc.
92	191ME6O08	ECAD Tools	✓			Students are able to acquire skills related to ECAD tools, enabling them to be employed as Design engineers
93	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers

94	191CS6O06	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
95	191CS6O07	Web Technologies		✓		Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
96	191CS6O08	Cyber Security		✓		Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
97	191CS6O09	AR / VR		✓		Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.
98	191IT6O03	Computer Organization		✓		Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
99	191IT6O04	AI Tools & Techniques	✓			Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
100	191IT6O05	Robotic Process Automation		✓		Students are able to demonstrate technical skill to develop applications using UIPath Programming and extraction techniques to deploy robot configurations
101	191MI6O02	Industrial Safety Practices			✓	Students are able to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
102	191MI6O03	Electrical Equipment's in Mines		✓		Students are able to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthing methods and applicability. This subject will guide the students of mining to be self sufficient for the electrical related problems in mines.
103	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves .
104	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.

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105	191PT6L06	Petroleum Reservoir Engineering Lab		✓		Students are able to acquire skills related to design, synthesize and evaluate the performance of process equipment's enabling them to be employed for designing and evaluation of fluid behaviour in production.
106	191PT6L07	Petroleum Analysis Lab	✓			Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as refining engineers.
107	191ES6T17	Employability Skills - IV	✓			Students are able 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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
108	171PT7T15	Integrated Asset Management and Petroleum Economics			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
109	171PT7T16	Petroleum Reservoir Engineering - II		✓		Students are able to demonstrate technical skill of characterizing different well fluid behaviours , modelling and analysis of reservoir for flow test.
110	171PT7T17	IOR and EOR Techniques		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
111	171PT7T18	Oil and Gas Processing Plant Design		✓		Students are able to demonstrate technical skill of characterizing different separators, compressors , pumps , modelling and analysis of production.
112	171PT7E10	Coal Bed Methane	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of CBM wells enabling them to be employed for designing and evaluation well for methane extraction.
113	171PT7E11	Offshore Engineering		✓		Students are able to demonstrate technical skill of characterizing different structures , modelling and analysis of offshore operations.
114	171PT7E12	Petroleum Corrosion Technology		✓		Students are able to demonstrate technical skill of characterizing different corrosion behaviours, modelling and analysis of treating.
115	171PT7E13	Shale Gas Reservoir Engineering	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of CBM & shale wells enabling them to be employed for designing and evaluation well for methane and oil extraction.
116	171PT7E14	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures , modelling and analysis of production.
117	171PT7E15	Reservoir Modeling and Simulation	✓			Students are able to demonstrate problem solving skills by modelling physical phenomenon using Practical Reservoir Modelling & Simulation (MATLAB Based) in various engineering disciplines.
118	171PT7L07	Petroleum Equipment Design and Simulation Lab		✓		Students are able to acquire skills related to design, synthesize and evaluate the performance of process equipment's enabling them to be employed for designing and evaluation of fluid behaviour in production.

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119	171PT7L08	Petroleum Reservoir Engineering Lab		✓		Students are able to acquire skills related to design, synthesize and evaluate the performance of process equipment's enabling them to be employed for designing and evaluation of fluid behaviour in production.
120	171HS7A04	Managerial Economics and Financial Analysis			✓	Students are able to demonstrate Competency in gaining the managerial skill set and enabling them to be an entrepreneur
121	171PT7P01	Industry Oriented (Internship) Minor Project	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in petroleum technology 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
122	171PT8E16	HSE and FE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.
123	171PT8E17	Reliability and Risk Management in Petroleum Operations			✓	Students are able to demonstrate Competency in the domain of Reliability and Risk Management in Petroleum Operations enabling them to become an entrepreneur.
124	171PT8E18	Deep Sea Production Systems		✓		Students are able to demonstrate technical skill of characterizing different subsea equipment's , modelling and analysis of production.
125	171PT8O01	Green Technologies		✓		Students are able to demonstrate technical skill of characterizing different energy resources , modelling and analysis of energy sector.
126	171PT8O02	Non-Conventional Sources of Energy		✓		Students are able to demonstrate technical skill of characterizing different Non-Conventional Sources , modelling and analysis of energy sector.
127	171PT8O03	Alternative Energy Sources for Automobiles		✓		Students are able to demonstrate technical skill of characterizing different Alternative Energy Sources , modelling and analysis of Automobiles.
128	171PT8O04	Waste Water Treatment		✓		Students are able to demonstrate technical skill of characterizing different waste water materials , modelling and analysis of treatments.
129	171PT8O05	Computational Fluid Dynamics		✓		Students are able to demonstrate technical skill of characterizing different fluid phases , modelling and analysis of fluid dynamics.
130	171PT8O06	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications , modelling and analysis of process in Petroleum Industry.

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131	171EC8O02	Disaster Management	✓			Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
132	171PT8P02	Major Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications petroleum technology domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
	Total		37	69	9	


Program Coordinator


Head of the Department
Head of the Department
Department of Petroleum Technology
Aditya Engineering College
SURAMPAL-EM-533 437

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 modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	201BS1T02	Engineering Physics				
4	201ES1T04	Principles of Agronomy and Soil Science	✓			Students are able to acquire skills related to crop management practices adopted for increasing the crop productivity enabling them to be employed as agriculture field officer.
5	201ES1T05	Engineering Graphics		✓		This subject helps the student to demonstrate technical skills as they have knowledge about engineering drawing and AutoCAD software for orthographic projections and isometric projection.
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	201BS1L01	Engineering Physics Lab				
8	201ES1L04	Soil Science and Agronomy Field Lab		✓		Students are able to demonstrate technical skill of crop management practices adopted for increasing the crop productivity.
9	201MC1T01	Environmental Science				
10	201BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations, vector differentiation, vector integration and their applications in various engineering disciplines.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	201BS2T08	Chemistry of Materials				
12	201ES2T06	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.
13	201ES2T08	Programming for Problem Solving Using C	✓			Students are able to acquire skills related to basic programming using C, enabling them to be employed as software developers.
14	201ES2L07	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.
15	201ES2L12	Computer Aided Drafting Lab		✓		Students are able to acquire skills related to drafting of mechanical components/assemblies through AUTOCAD software enabling them to be employed as a design engineer.
16	201HS2L02	Professional communications skills 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.
17	201BS2L05	Engineering Chemistry Lab				
18	201ES2L10	Programming for Problem Solving Using C	✓			Students are able to acquire skills related to basic programming using C, enabling them to be employed as software developers.
19	201MC2T02	Constitution of India		✓		This subject helps the student to demonstrate their technical skills for constitution making and its importance for building a democratic India, to make them understand the executive, legislative and judiciary system.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T12	Integral Transforms and Applications of Partial Differential Equations		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and by learning Fourier Transforms and Laplace Transforms and their applications
21	201AG3T01	Surveying and Levelling		✓		Students are able to demonstrate technical skill of estimating performance of refrigeration and air conditioning tutors
22	201AG3T02	Fluid Mechanics and Open Channel Hydraulics	✓			Students are able to acquire skills for solving difficulties in chain and compass survey, preparing contour plans and producing layouts enabling them to be employed in farm structure construction companies.
23	201AG3T03	Thermodynamics, Refrigeration and Air Conditioning	✓			Students are able to acquire skills related to interpretation of fluid properties and their influence on fluid motion, Bernoulli's equation and it's applications enabling them to be employed for Hydraulic designing and analysis.
24	201AG3T04	Strength of Materials	✓			Students are able to acquire skills on working of refrigeration and air conditioning and enabling them to be employed in refrigeration and air conditioning industries
25	201AG3L01	Surveying and Levelling Lab	✓			Students are able to acquire skills to enhance the knowledge about IC Engines and calculating COP and enabling them to be employed in automotive industries.
26	201AG3L02	Fluid Mechanics and Open Channel Hydraulics Lab		✓		Students are able to demonstrate technical skill of estimating the levels of existing ground and prepare contour plan, developing the plan or map showing the ground features from data obtained by surveying
27	201AG3L03	Thermodynamics, Refrigeration and Air Conditioning Lab		✓		Students are able to demonstrate technical skill of determining major and minor losses in pipes, flow behaviour in open channels.

28	201SO3L10	1) Computer Aided Manufacturing		✓		Students are able to acquire skills on arithmetic mean, median mode etc, theories of probabilities, types of sampling and estimate deposits with surpac.
29	201SO3L11	2) Computer Aided Design using SolidWorks		✓		Students are able to demonstrate technical skill of computer aided manufacturing
30	201MC3T03	Biology for Engineers				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	201ES4T21	Soil Mechanics	✓			Students are able to acquire skills related to various aspects of material design enabling them to be employed as material designers
32	201BS4T15	Numerical Methods and Statistical Techniques		✓		Students are able to demonstrate problem solving skills by learning numerical methods for solving equations, differential equations, integrals , probability distributions, sampling theory and test of hypothesis
33	201AG4T05	Heat and Mass Transfer	✓			Students are able to acquire skills related to designing various processing equipment's to insure food quality and safety enabling them to be employed as a food engineer.
34	201AG4T06	Tractor Systems and Controls	✓			Students are able to acquire skills related to interpretation of forced and free convection heat transfer mechanism, Application of LMTD and NTU for designing of heat exchangers enabling them to be employed in any food or dairy processing industries.
35	201HS4T07	Entrepreneurship Development and Business Management			✓	Students are able to apply the knowledge of entrepreneurial skills, legal steps to start enterprises ,which enable them to become entrepreneurs
36	201ES4L17	Soil Mechanics Lab	✓			Students are able to acquire skills related to various aspects of material design enabling them to be employed as material designers
37	201AG4L04	Tractor Systems and Controls Lab	✓			Students are able to acquire skills related to designing of food plant, different processing steps enabling them to be employed as Food plant design and operations sector.
38	201AG4L05	Heat and Mass Transfer Lab		✓		Students are able to demonstrate technical skills of periodical maintenance and troubleshooting of all systems like fuel system, lubrication system, cooling system and ignition system and remedial measures for above system.

39	201SC4L23	1) Food Quality and Control		✓		Students are able to demonstrate technical skills of Creating and controlling simple plot and user-interface graphics objects in MATLAB
40	201SC4L22	2) Analysis/Simulation using MATLAB	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
41	201MC4T04	Essence of Indian Traditional Knowledge				

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
42	191AG5T09	Strength of Materials	✓			Students are able to acquire skills related to analysing the deflections in beams under various loading and support conditions, solving the load carrying capacity of columns for different end conditions, and design of riveted and welded joints enabling them to be employed in construction related companies.
43	191AG5T10	Theory and Design of Agricultural Machinery	✓			Students are able to acquire skills related to designing of mechanical power transmission elements, farm machinery implements enabling them to be employed in farm machinery related companies.
44	191AG5T11	Agricultural Process Engineering and Food Quality	✓			Students are able to acquire skills related to unit operations and size reduction processes, designing of mixing equipment's for powder, high and low viscosity liquids enabling them to be employed in food processing industries.
45	191AG5E01	Engineering Properties of Biological Materials	✓			Students are able to acquire skills related to designing various processing equipment's to insure food quality and safety enabling them to be employed as a food engineer.
46	191AG5E02	Mechanical Measurement and Instrumentation	✓			Students are able to acquire skills related to mechanical, electrical and electro-mechanical type pressure measuring transducers, f temperature measuring transducers, and different instruments for measuring sound, speed and motion enabling them to be employed for food or farm machinery related companies.
47	191AG5E03	Theory of Structures	✓			Students are able to acquire skills related to design of beams, slabs, columns, foundations and RCC structures enabling them to be employed in any construction related companies.
48	191CE5O01	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
49	191EE5O01	Electrical Safety	✓			Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.

50	191EE5O02	Electrical Materials	✓			Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.
51	191EE5O03	Basic Electrical Measurements		✓		Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
52	191ME5O02	Fundamentals of Mechanical Engineering	✓			Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.
53	191ME5O03	Supply Chain Management	✓			The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
54	191ME5O04	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
55	191ME5O05	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
56	191EC5O01	Signals & Systems		✓		Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analysed and deciphered by complex data processing techniques.
57	191EC5O02	Digital Electronics and Logic Design	✓			Students are able to acquire skills related to design, and synthesize basic of digital ckts enabling them to be employed for designing and manufacturing of electronic equipment.
58	191EC5O03	Semiconductor devices	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
59	191CS5O01	Data Structures	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers

60	191CS5O02	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.
61	191CS5O03	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
62	191CS5O04	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
63	191IT5O01	Data Base 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
64	191IT5O02	Computer Graphics	✓			Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2d and 3d applications.
65	191MI5O01	Overview of Mining		✓		This course demonstrate the technical skills of the student by giving them knowledge about life cycle of mines, ventilation, lighting and permanent lining of underground mines. It also gives knowledge about modern techniques of shaft sinking.
66	191PT5O01	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications modelling and analysis of process in Petroleum Industry.
67	191PT5O02	Fundamentals of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of petroleum industry.
68	191AG5L07	Soil Mechanics Lab		✓		Students are able to demonstrate technical skill of performing Tri- axial tests and interpreting permeability characteristics of soil
69	191AG5L08	Theory and Design of Agricultural Machine LAB		✓		Students are able to demonstrate technical skill of finding the velocity of linkage mechanism by graphical and analytical methods, designing gears, gear trains and clutches for agricultural machinery.
70	191AG5L09	Agricultural Process Engineering and Food		✓		Students are able to demonstrate technical skill of designing handling and processing equipment's, determining the power requirement in different types of conveyors

		Quality LAB				
71	191HS5T06	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.
72	191PR5P02	Socially Relevant 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.
73	191MC5A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
74	191AG6T12	Irrigation and Drainage Engineering	✓			Students are able to acquire skills related to designing of drainage systems, irrigation canals enabling them to be employed as Irrigation engineers.
75	191AG6T13	Post-Harvest Engineering for Horticultural Produce	✓			Students are able to acquire skills related to development of different packaging technologies, preservation technologies to preserve horticultural crops enabled them to be employed in any horticulture processing/ storing industries
76	191AG6T14	Agricultural Machinery and Equipment	✓			Students are able to acquire skills related to designing of mechanical power transmission elements, farm machinery implements enabling them to be employed in farm machinery related companies.
77	191AG6E06	Human Engineering and Safety			✓	This course helps to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
78	191AG6E04	Agricultural Structures	✓			Students are able to acquire skills related to design of gully control structures, grain storage structures enabling them to be employed in any grain storage companies or irrigation companies.
79	191AG6E05	Agro Industries and By-Product Utilization	✓			Students are able to acquire skills related to treatment techniques of waste water from agricultural/food industry, production of by- products from agricultural and food processing wastes enabling them to be employed in any food industry.
80	191AG6E07	Design of Agricultural Machinery	✓			Students are able to acquire skills related to designing of mechanical power transmission elements, farm machinery implements enabling them to be employed in farm machinery related companies.
81	191AG6E09	Watershed Planning and Management	✓			Students are able to acquire skills related to estimating runoff and water harvesting structures, erosion controlling techniques and water harvesting methods enabling them to be employed in companies related to watershed management projects.

82	191AG6E08	Seed Processing and Storage Engineering	✓			Students are able to acquire skills related to unit operations in seed processing industry, techniques of seed drying, cleaning and plant layout planning enabling them to be employed as seed processing engineer.
83	191CE6O02	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
84	191EE6O04	Energy Audit and Conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance activities, creates the interest among the students to have own company.
85	191EE6O05	Non Conventional Energy resources	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
86	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analysing the hydraulic and pneumatic systems
87	191ME6O09	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
88	191ME6O10	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
89	191ME6O11	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
90	191ME6O07	Biomedical Instrumentation		✓		Students are able to acquire skills to understand the concepts of biomedical instrumentation and can be employed in fabrication of biomedical instruments.
91	191ME6O08	ECAD Tools	✓			Students are able to acquire skills related to ECAD tools, enabling them to be employed as Design engineers

92	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
93	191CS6O06	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
94	191CS6O07	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
95	191CS6O08	Cyber Security	✓			Students are able to acquire technical skills related to Cyber security and enabling them to be employed for cyber security sector.
96	191CS6O09	AR / VR	✓			Students are able to acquire skills related to Design, create, and integrate audio, visual, and interactive elements into a comprehensive immersive experience enabling them to be employed as app developers.
97	191IT6O03	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
98	191IT6O04	AI Tools & Techniques	✓			Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
99	191MI6O03	Electrical Equipment's in Mines		✓		This subject helps the student to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthing methods and applicability. This subject will guide the students of mining to be self-sufficient for the electrical related problems in mines.
100	191PT6O03	Unconventional Hydrocarbon Resources			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
101	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
102	191ME6O12	Entrepreneurship Development and Incubation			✓	Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and enabling them to be employed as a project engineer in various organizations.
103	191AG6L10	Irrigation and Drainage Engineering LAB		✓		Students are able to demonstrate technical skill of evaluating the performance of irrigation and drainage systems, interpretation soil physical and chemical properties.

104	191AG6L11	Agricultural Machinery and Equipment Lab		✓		Students are able to demonstrate technical skill of determining parameters of different farm implements, calibration of seed cum fertilizer drills and sprayers.
105	191HS6T07	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.
106	191MC6A09	Professional Ethics and Human Values		✓		This subject help the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
107	171AG7T20	Dairy and Food Engineering	✓			Students are able to acquire skills related to milk and food processing unit operations, thermal treatment techniques enabling them to employed as dairy engineer.
108	171ES7T26	Mechanical Measurements and Instrumentation	✓			Students are able to acquire skills related to mechanical, electrical and electro-mechanical type pressure measuring transducers, f temperature measuring transducers, and different instruments for measuring sound, speed and motion enabling them to be employed for food or farm machinery related companies.
109	171AG7E09	Seed Processing and Storage Engineering	✓			Students are able to acquire skills related to unit operations in seed processing industry, techniques of seed drying, cleaning and plant layout planning enabling them to be employed as seed processing engineer
110	171AG7E10	Food Processing Plant Design and Layout	✓			Students are able to acquire skills related to designing of food plant, different processing steps enabling them to be employed as Food plant design and operations sector.
111	171AG7E11	Food Packaging Technology	✓			Students are able to acquire skills related to the effect of packaging material on fruits and vegetables, different laws and regulations related to food packaging, and innovations in food packaging technologies enabling them to be employed in food packaging companies.
112	171AG7E12	Aqua Cultural Engineering	✓			Students are able to acquire skills related to designing an aqua farm and modern aquaculture farm system with aquaculture equipment enabling them to be employed as an aqua farm designer.
113	171AG7E13	Soil Dynamics in Tillage and Traction	✓			Students are able to acquire skills related to interpretation of traction mechanics, evaluation of traction device performance enabling them to be employed in any farm machinery designing companies.
114	171AG7E14	Computational Fluid Dynamics		✓		Students are able to acquire skills in analyzing the numerical methods related to fluid modelling.
115	171AG7L06	Farm Machinery Lab – II		✓		Students are able to demonstrate technical skill of determining parameters of different farm implements, calibration of seed cum fertilizer drills and sprayers.

116	171AG7L07	Dairy and Food Engineering Lab		✓		Students are able to demonstrate technical skills of analysing heat treatment processes used in milk preservation and operations involved in milk processing.
117	171AG7P01	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
118	171AG8E17	Design of Agricultural Machinery	✓			Students are able to acquire skills related to designing of mechanical power transmission elements, farm machinery implements enabling them to be employed in farm machinery related companies.
119	171AG8O01	Digital Control systems	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
120	171AG8O02	Industrial Pollution Control Engineering	✓			Students are able to acquire skills related to unit operations and unit processes involved in conversion of highly polluted water to potable standards, analysis and quantification of waste water treatment enabling them to be employed in food industries
121	171AG8O03	Mechatronics		✓		Students are able to demonstrate technical skills to measure the load, displacement and temperature using analogue and digital sensors.
122	171AG8O04	Water Resources Systems Planning and Management	✓			Students are able to acquire skills related to dynamic programming for water resources allocation, evaluating the feasibility of water resource projects by using linear programming methods enabling them to be employed in any water resources managing companies.
123	171CS8O04	Operations Research		✓		Students are able to demonstrate technical skill to formulate and solve problems as networks and graphs.
124	171AG8O05	Image Processing Techniques		✓		Students are able to acquire technical skills related to image processing by using various tools related to computer vision.

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125	171AG8P02	Major 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.
TOTAL		125	68	41	9	


Program Coordinator


Head of the Department
Head of the Department
Department of Agricultural Engineering
ADITYA ENGINEERING COLLEGE (AE)

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 modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	201BS1T02	Engineering Physics				
4	201ES1T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire skills related to crop management practices adopted for increasing the crop productivity enabling them to be employed as agriculture field officer.
5	201ES1T05	Engineering Graphics		✓		This subject helps the student to demonstrate technical skills as they have knowledge about engineering drawing and AutoCAD software for orthographic projections and isometric projection.
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	201BS1L01	Engineering Physics Lab	✓			

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B.Tech Mining Engineering

8	201ES1L03	Essential Electrical and Electronics Engineering Lab		✓		Students are able to demonstrate technical skill of crop management practices adopted for increasing the crop productivity.
9	201MC1T01	Environmental Science				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	201BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations, Vector differentiation and integration, their applications in various engineering disciplines.
11	201BS2T08	Chemistry of Materials				
12	201ES2T06	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.
13	201ES2T08	Programming for Problem Solving Using C	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers.
14	201ES2L07	Engineering Workshop	✓			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 be employed as a product developer.
15	201ES2L12	Computer Aided Drafting Lab		✓		Students are able to acquire skills related to construction orthographic and isometric projection of machine parts using AUTOCAD software.
16	201HS2L02	Professional Communications Skills Lab		✓		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
17	201BS2L05	Engineering Chemistry Lab				

18	201ES2L10	Programming for Problem Solving Using C Lab		✓		Students are able to demonstrate technical skill of identifying, specifications of various devices, their symbols. They can recognise and make use of various instruments, like CRO, FG etc
19	201MC2T02	Constitution of India			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
20	201BS3T14	Numerical Methods and Integral Transforms		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using Numerical Methods and integral transforms in various engineering disciplines.
21	201ES3T17	Basic Mechanical Engineering	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits/networks enabling them to be employed for designing and manufacturing of electrical/ electronic equipment.
22	201MI3T01	Mining Geology		✓		This subject helps the student to improve their skills as they will understand different equipment and compare accuracy levels and to study several experiments and conversant with it.
23	201MI3T02	Mine Surveying		✓		This subject helps the student to improve their skills as they will understand different equipment and compare accuracy levels and to study several experiments and conversant with it.
24	201MI3T03	Development of Mineral Deposits		✓		This subject improve the skills of the student as it helps the student to determination of different levels and level difference and computation of areas, volumes which includes determination of capacity of reservoirs, volumes of barrow pits. This subject help the student to make a career as surveyor or asst. surveyor in the mining field.
25	201MI3L01	Geology Lab	✓			Students are able to acquire skills related to mechanical behaviour of materials under different

						loading conditions enabling them to be employed as a materials engineer.
26	201MI3L02	Basic Mechanical Engineering Lab		✓		This subject helps the student to demonstrate their technical skills as students were able to know the properties of minerals, different faults of minerals and economic justification of minerals. This subject helps the mining students to have ample knowledge about minerals so that they can participate as an independent consultant in buying and selling of minerals.
27	201MI3L03	Mine Surveying Lab -I		✓		This course helps the students to demonstrate their technical skills by making them learn the basic principles of fluid flow, measurement of pressure, discharge and velocity of fluid flow. It also help the students to have practical exposure on the performance evaluation methods of various flow measuring equipment, hydraulic turbines and pumps.
28	201SO3L09	Geo-Statistics through SURPAC		✓		Students are able to apply technical skills related to HTML, HTML5, CSS and CSS3
29	201MC3T03	Biology for Engineers				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	201BS4T17	Complex Variables and Statistical Methods		✓		Students are able to demonstrate problem solving skills by analytical properties of functions of complex variables and their applications and also about random variables, sampling theory, test of hypothesis.
31	201MI4T04	Fundamentals of Rock Mechanics		✓		This subject helps the students to improve technical skills as they were able to understand triangulation survey using theodolite, area using total station, distance, gradient, difference, height between two inaccessible points using total stations.
32	201MI4T05	Surface Mining		✓		This subject demonstrate the technical skills of student by making them learn the basic principles of stress and strain, properties of rocks and their determination and also make them aware of failure theories of rock .
33	201MI4T06	Underground Coal Mining Technology		✓		This subject demonstrate the technical skills and knowledge of students as they get to know about Opencast Mining, Ground Water control, use of drilling machines, Smooth Blasting and Pre- splitting, Mining methods and selection of high angle conveyor and In-Pit Crusher Conveyor System. This subject helps them to get placed in the surface mines as drilling & blasting expert or a surface mining engineer.
34	201BS4T18	Managerial Economics and Financial Accountancy		✓		This subject helps the student to acquire skills to understand managerial economic concept, Break even concept, profit & loss concept and balance sheet of an enterprise which enable them to be employed in the field

						of accounting and trading related jobs in the mines.
35	201MI4L04	Rock Mechanics Lab		✓		This course demonstrate the technical skills of the student by giving them knowledge about life cycle of mines, ventilation, lighting and permanent lining of underground mines. It also gives knowledge about modern techniques of shaft sinking.
36	201MI4L05	Mine Surveying Lab -II		✓		This subject helps the students to improve their technical skills as they will understand geotechnical engineering which will provide an understanding for the assessment of Rock mass characterization based on Rock mass properties
37	201SC4L20	Data Analytics for Mining using Python		✓		Students area able to acquire technical skills related to JavaScript and XML
38	201MC4T04	Essence of Indian Traditional Knowledge				

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
39	191MI5T09	Mine Systems Engineering		✓		This subject helps the student to demonstrate technical skills as they will be able to formulate real-world problems involving decision making, Linear programming problem, transportation and assignment problems also they were able to solve dynamic programming & simulation techniques in real-world problems.
40	191MI5T10	Underground Metal Mining Technology		✓		This subject helps the student to demonstrate their technical skills as they will understand the peculiarities and limitations of metal mining, familiar with different stopping methods, design and planning of stopping methods. Students can be placed in different metal mining companies by possessing a depth knowledge in this subjects.
41	191MI5T11	Mine Environment & Ventilation Engineering		✓		This subject enhance the skill of students to understand atmosphere and mine atmosphere conditions, heat and humidity levels in mines and controlling method. It also help students to know about ventilation standards planning and layout.
42	191MI5T12	Mine Machinery		✓		This subject helps the student to demonstrate their technical skills as they will be able to know surface and pit bottom layouts, various coal face machinery. It also upgrade the skills of students as they will be able to know the design and construction details of excavating & transporting equipment's used in surface mines.
43	191MI5E02	Environmental Impact Assessment	✓			Students are able to acquire skills related to assessment of the impact of any developmental activity in any sector of the environment and mitigation of negative impacts in the

						environment enabling them to be employed in as environmental managers/engineers.
44	191MI5E03	Planning of Underground Coal Mining Project		✓		This subject helps the students to understand different methods of coal mining, advantages and disadvantages which is analyzed the logical application of choice of mining methods can be evaluated in the mines.
45	191MI5E04	Sustainable Mining		✓		This subject helps the student to demonstrate technical skills as they were able to know about different stages of EIA, special methods and components of EIA and assessment of impacts air, water, soil, noise biological, socio & cultural environments.
46	191MI5E01	Drilling & Blasting		✓		This subject helps the students to demonstrate their technical skills as they will get to know the theory of rock breaking, and its applications by using various types of rock drilling and blasting methods.
47	191CE5O01	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
48	191EE5O01	Electrical Safety		✓		Students are able to demonstrate safety skills by providing knowledge on hazards with growing penetration of electrical devices in strategic areas including Space, mining and Nuclear energy.
49	191EE5O02	Electrical Materials		✓		Students are able to demonstrate technical skills in manufacturing of the electrical components depending on the application.
50	191EE5O03	Basic Electrical Measurements	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.

51	191ME5O01	Renewable Energy Sources	✓			Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.
52	191ME5O02	Fundamentals of Mechanical Engineering	✓			Students are able to acquire skills related to concepts of fundamentals of thermal, manufacturing and design fields in mechanical engineering.
53	191ME5O03	Supply Chain Management	✓			The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
54	191ME5O04	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
55	191ME5O05	Entrepreneurship Development and Incubation	✓			Students are able to acquire skills on basic knowledge on concepts of entrepreneurship development.
56	191EC5O01	Signals and Systems		✓		Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analysed and deciphered by complex data processing techniques.
57	191EC5O02	Digital Electronics and Logic Design	✓			Students are able to acquire skills related to design, and synthesize basic of digital ckts enabling them to be employed for designing and manufacturing of electronic equipment.
58	191EC5O03	Semi conductor devices	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.

59	191CS5001	Data Structures	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
60	191CS5001	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.
61	191CS5003	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
62	191CS5004	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
63	191IT5001	Database Management Systems	✓			Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.
64	191IT5002	Computer Graphics	✓			Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2d and 3d applications.
65	191PT5001	Process Intensification in Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
66	191PT5002	Fundamentals of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of petroleum industry.
67	191AG5001	Basic Crop Production Practices	✓			Students are able to acquire skills related to production practices and management techniques of agricultural and horticultural crops enabling them to be employed as

						agricultural field manager
68	191MI5L04	Mine Environment & Ventilation Engineering Lab		✓		This subject demonstrate students to improve technical skills as students will familiar with detection of different gases using deferent methods detectors and multi gas detector, to find flammable index of coal dust and understand the rescue and recovery operations using different rescue apparatus.
69	191HS5T16	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.
70	191PR5P02	Socially Relevant 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.
71	191MC5A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
72	191MI6T13	Mineral Processing Technology		✓		This subject help the students to enhance the technical skills of mining engineering students as they will know different mineral processing techniques and also they will get to know about different type of fuel technology. This subject helps the mining student to get placed in different process related plants.
73	191MI6T14	Mine Hazards & Rescue		✓		Subject will helps the student to demonstrate their technical skills as they were able to understand the fundamentals of mines fire, causes of mine explosion, reasons for inundation and rescue procedures in mining.
74	191MI6T15	Environmental Management in Mines		✓		Subject helps the student to demonstrate technical skills as they able to understand environmental issues in mining, causes of air and water pollution, mine reclamation and environmental impact due to mining
75	191MI6E06	Mine Health & Safety Engineering		✓		This subject demonstrates the technical skills of different aspects of mine health and safety related problems also it create awareness of the hazardous effect of mining in mining workers health.
76	191MI6E07	Planning of Underground Metal Mining Project		✓		This subject helps the student to understand different mining methods in underground metal mining that will help them to know what types of stopping methods can be adopted to different types of mineral deposits.
77	191MI6E05	Green Mining		✓		Subject helps the student to demonstrate technical skills as they were able to understand importance of green mining, mine waste management, mine closure planning and usage of renewable energy in mines.

78	191MI6E08	Rock Fragmentation Engineering		✓		This subject demonstrate technical skills of the students by making them know the estimation of rock mass strength, its behaviour during excavation, types of drilling and blasting methods depend on the rock mass characterization.
79	191MI6E10	Environmental Pollution and Control		✓		Subject demonstrate technical skills of the student as they will able to understand the environmental issues in mining, various causes of air and water pollution, mine reclamation and environmental impact assessment.
80	191MI6E11	Planning of Surface Mining Project		✓		This subject helps the student to improve their skills as here entire phasing and sequencing of equipment planning, selection components are discussed for the optimization of the production and increasing the production cycle coupled with financial analysis.
81	191MI6E09	Deep Sea Mining		✓		Subject demonstrate technical skills as they were able to understand marine environment and profile of sea, marine sediments and continental slope, methods of off shore exploration of oil and gas and deep sea bed mining.
82	191MI6E12	Rock Excavation Engineering		✓		This subject demonstrate technical skills of the students by making them know the estimation of rock mass strength, its behaviour during excavation, types of drilling and blasting methods depend on the rock mass characterization.
83	191CE6O02	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
84	191EE6O04	Energy Audit and Conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance actives, creates the intrust among the students to have own company.

85	191EE6O05	Non-Conventional Energy Sources	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
86	191EE6O06	Instrumentation	✓			Students are able to acquire skills related to various types of electrical instruments that enable them to get employed in core (electrical) industry/company related to instrumentation of electrical parameters.
87	191ME6O06	Solar Energy Utilisation	✓			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 industries
88	191ME6O07	Basic Thermodynamics and Heat Transfer		✓		Students are able to acquire skills to understand the concepts of bio medical instrumentation and can be employed in fabrication of bio medical instruments.
89	191ME6O08	Introduction to Hydraulics and Pneumatics		✓		Students are able to demonstrate problem solving skills in analyzing the hydraulic and pneumatic systems
90	191ME6O09	3D Printing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing companies.
91	191ME6O10	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
92	191ME6O11	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.
93	191ME6O12	Entrepreneurship Development and			✓	Students are able to acquire skills to understand and apply the business plan for preparation and evaluation of project and

		Incubation				enabling them to be employed as a project engineer in various organizations.
94	191EC6O04	Biomedical Instrumentation	✓			Students are able to acquire skills to understand and apply the biomedical instrumentation enabling them to be employed in various organizations, which developed and fabricate biomedical instruments like ECG etc.
95	191EC6O05	ECAD Tools	✓			Students are able to acquire skills related to ECAD tools, enabling them to be employed as Design engineers
96	191CS6O05	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
97	191IT6O03	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
98	191IT6O04	AI Tools & Techniques	✓			Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
99	191IT6O05	Robotic Process Automation	✓			Students are able to demonstrate technical skill to develop applications using UI Path Programming and extraction techniques to deploy robot configurations
100	191PT6O03	Unconventional Hydrocarbon Resources		✓		Students are able to demonstrate technical skill of characterizing different unconventional resources, modelling and analysis of reserves.
101	191PT6O04	Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
102	191AG6O02	Weather forecast in Agriculture				Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and

			✓			bio-diesel production enabling them to be employed in any bio mass energy sector.
103	191AG6O03	Bio-energy systems design and applications	✓			Students are able to acquire skills related to biomass and agrochemical conversion techniques, biomass production and bio-diesel production enabling them to be employed in any bio mass energy sector.
104	191MI6L05	Mine Planning & Design Lab		✓		This subject demonstrate technical skills of students by letting them know creation and utilization of data base for various studies and applications of the same for planning & design of mining projects.
105	191MI6L06	Mineral Processing Lab		✓		Mineral Processing lab helps the students to demonstrate technical skills by giving them hands-on experience to the various laboratory techniques and procedures of mineral processing such as sampling, screening, crushing , grinding, etc which helps them to get placed in different process industry.
106	191HS6T07	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.
107	191MC6A09	Professional Ethics and Human Values		✓		This subject help the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
108	171MI7T17	Mine Economics		✓		This subject helps the student to demonstrate technical skills as they are able to understand the estimation and valuation of mineral deposits and they will possess knowledge about project appraisal, finance and accounting.
109	171MI7T18	Mine Health and Safety Engineering		✓		This subject demonstrates the technical skills of different aspects of mine health and safety related problems also it create awareness of the hazardous effect of mining in mining workers health.
110	171MI7T19	Mine Legislation and General Safety		✓		This subject is vital and important subject of mining as it demonstrate the technical skills by provides an insight to various laws, rules and Acts related to Mines Safety and mining legislation. This subject will help the students to qualify different DGMS certification exam of Mines Manager.
111	171MI7T20	Mine Management	✓			This subject helps the students to acquire skills related to mine management, project management and total quality management enabling them to place in different mining company.
112	171MI7E10	Planning of UGMM Project		✓		This subject helps the student to understand different mining methods in underground metal mining that will help them to know what types of stopping methods can be adopted to different types of mineral deposits.
113	171MI7E11	Planning of UGCM Project		✓		This subject helps the students to understand different methods of coal mining, advantages and disadvantages which is analysed the logical application of choice of mining methods can be evaluated in the mines.

114	171MI7E12	Planning of Surface Mining Project		✓		This subject helps the student to improve their skills as here entire phasing and sequencing of equipment planning, selection components are discussed for the optimization of the production and increasing the production cycle coupled with financial analysis.
115	171MI7E13	Mine mechanization		✓		This subject helps the student to demonstrate their technical skills as they will be able to know surface and pit bottom layouts, various coal face machinery. It also upgrades the skills of students as they will be able to know the design and construction details of excavating & transporting equipment's used in surface mines.
116	171MI7E14	Advance Underground Coal Mining Technology		✓		This subject demonstrates skills that help the student to understand the extraction of thick seam mining methods, problems and issues on multiple seam mine workings, design of underground workings and extraction of locked up pillars
117	171MI7E15	Mine Blasting operation		✓		This subject demonstrates technical skills as students were able to understand blasting methods and the design related to it.
118	171MI7L07	Mine Planning and Design Lab		✓		This subject demonstrates technical skills of students by letting them know creation and utilization of data base for various studies and applications of the same for planning & design of mining projects.
119	171ES7L16	Mechanical Engineering Lab		✓		This course helps the students to demonstrate their technical skills by making them learn the basic principles of fluid flow, measurement of pressure, discharge and velocity of fluid flow. It also helps the students to have practical exposure on the performance evaluation methods of various flow measuring equipment, hydraulic turbines and pumps.
120	171MI7P01	Industry Oriented	✓			Students will be able to demonstrate problem identification,

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		(Internship) Minor Project				analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
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VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
121	171MI8E16	Mine Systems Engineering		✓		This subject helps the student to demonstrate technical skills as they will be able to formulate real-world problems involving decision making, Linear programming problem, transportation and assignment problems also they were able to solve dynamic programming & simulation techniques in real-world problems.
122	171MI8E17	Advance Surface Mining Technology		✓		This subject helps the student to demonstrate technical skills as they will be able to understand modern surface mining technology, design large surface mines, simulation of mining operation, and able to prepare feasibility report.
123	171MI8E18	Advanced Underground Metal Mining Technology		✓		This subject helps the student to demonstrate technical skills as they will be able to understand different advanced metal mining techniques, design underground metal mines, analyse development of feasibility report & detailed mining report, case studies.
124	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.
125	171MI8O01	Environmental Impact Assessment	✓			Students are able to acquire skills related to assessment of the impact of any developmental activity in any sector of the environment and mitigation of negative impacts in the environment enabling them to be employed in as environmental managers/engineers.
126	171MI8O02	Mine Closure and Reclamation		✓		This subject helps the student to demonstrate technical skills as they were able to understand strategies and principle of mine reclamation, challenges of mine planning and mine

						closure plan, handling of waste dumps and closure risk assessment.
127	171MI8O03	Fundamentals of Communication		✓		This subject helps the student to demonstrate technical skills as they were able to understand types of signal and its relation, concepts of continuous wave modulation, concepts of digital modulation techniques and different advanced communication networks.
128	171MI8O04	Remote Sensing and GIS		✓		This subject helps the student to demonstrate technical skills as they were able to understand elements of photogrammetry, concept of remote sensing and false colour composite, principal components and image classification.
129	171MI8O05	Quantitative Decision Making		✓		This subject helps the student to demonstrate technical skills as they were able to understand data using histograms, scatter diagrams and summary statistics, models of decision making spreadsheet simulation models.
130	171MI8P02	Major 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.
TOTAL		130	43	75	6	



Program Coordinator



Head of the Department

Head of the Department
DEPARTMENT OF MINING ENGINEERING
ADITYA ENGINEERING COLLEGE (A9)

**PROGRAM STRUCTURE
I SEMESTER**

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192TE1T01	Advanced Fluid Mechanics		✓		Students are able to acquire skills in analyzing various fluid flow problems using differential equations of fluid mechanics
2	192TE1T02	Computational Fluid Dynamics	✓			Students are able to demonstrate technical skills related to understand the basics of computational fluid dynamics and enabling them to be employed as Computational fluid dynamics engineer.
3	192TE1E01	Advanced IC Engines, Electric and Hybrid vehicles	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.
4	192TE1E02	Gas Dynamics	✓			Students are able to acquire skills in analyzing the behavior of isentropic flow of ideal gases and enabling them to be employed in thermal power plants.
5	192TE1E03	Cryogenic Engineering	✓			Students are able to acquire skills related to the technical knowledge of cryogenic fluids, purification systems and cryogenic refrigeration systems. Enabling them to be employed in refrigeration industries.
6	192TE1E04	Advanced Thermodynamics	✓			Students are able to acquire skills related to various thermodynamic systems and power cycles and enabling them to be employed as Thermodynamic engineer.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
7	192TE1E05	Gas Turbines		✓		Students are able to acquire skills related to performance characteristics and applications of gas turbines.
8	192TE1E06	Alternative Fuel Technologies				Students are able to acquire skills in analyzing potential alternative liquid and potential gaseous fuels.
9	192TE1E07	Energy Conservation and Management	✓			Students are able to acquire skills related to the importance of energy management in the functional area and carrying out budgeting and risk analysis of projects enabling them to be employed in Energy sector.
10	192TE1E08	Theory and Technology of Fuel Cells	✓			Students are able to acquire skills related to the fuel cells and its characteristics, fuel processing and its availability and enabling them to be employed in solar energy-based companies
11	192HS1T01	Research Methodology and IPR		✓		Students can gain knowledge about the methods of study, observation, comparison and experiment along with different types of Intellectual property rights
12	192TE1L01	Computational Fluid Dynamics Lab-I	✓			Students are able to demonstrate technical skills related to understand the basics of computational fluid dynamics and enabling them to be employed as Computational fluid dynamics engineer.
13	19TE1L02	Thermal Engineering Lab -1	✓			Students are able to acquire skills to enhance the knowledge about IC Engines and calculating COP and enabling them to be employed in automotive industries.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
14	192MC1A01/ 192MC2A01	English for research paper writing		✓		Students are able to demonstrate communication writing skills to express fluently in writing form of language which is very much essential for the career growth in research
15	192MC1A02/ 192MC2A02	Disaster Management	✓			Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
16	192MC1A03/ 192MC2A03	Sanskrit for Technical Knowledge		✓		
17	192MC1A04/ 192MC2A04	Value Education		✓		
18	192MC1A05/ 192MC2A05	Constitution of India		✓		
19	192MC1A06/ 192MC2A06	Pedagogy studies		✓		
20	192MC1A07/ 192MC2A07	Stress management by YOGA		✓		
21	192MC1A08/ 192MC2A08	Personality development through life enlightenment skills		✓		

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
22	192MC1A09/ 192MC2A09	Soft skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language, formal written communication in the organizations.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
23	192TE2T03	Advanced Heat Transfer	✓			Students are able to acquire skills related to the conduction in steady and unsteady cases and solve 2-D steady and transient heat conduction problems and enabling them to be employed in piping design industries.
24	192TE2T04	Thermal Measurements and Process Controls	✓			Students are able to acquire skills related to the knowledge of various temperature measuring devices and enabling them to be employed in thermal power plants.
25	192TE2E09	Equipment Design for Thermal Systems	✓			Students are able to acquire skills related to the design of heat exchangers, vaporizers, evaporators enabling them to be employed in thermal power plants.
26	192TE2E10	Solar Energy Technologies	✓			Students are able to acquire skills related to the concepts about the types of solar collectors and their measuring principles and impart the knowledge of the various types of thermal energy storage methods and its applications enabling them to be employed in solar based industries.
27	192TE2E11	Advanced Power Plant Engineering	✓			Students are able to acquire skills related to performance, operational characteristics and instrumental techniques used in power plants enabling them to be employed in power plants.
28	192TE2E12	Combustion, Emissions and Environment		✓		Students are able to acquire skills related to principles and thermodynamics of combustion, emissions and pollution control.

29	192TE2E13	Jet propulsion and Rocket Engineering	✓			Students are able to acquire skills related to the knowledge of the turbojet propulsion system and the principles of jet propulsion, rocketry and nozzle theory enabling them to be employed in defense and aircraft building organizations.
30	192TE2E14	Automotive Engineering	✓			Students are able to acquire skills related to the concepts of fuel and ignition system, lubricating and cooling system, transmission and steering system enabling them to be employed in automotive industries.
31	192TE2E15	Modeling of I.C. Engines	✓			Students are able to acquire skills related to the concepts of modelling and performance of I.C. Engines enabling them to be employed in automotive industries.
32	192TE2E16	Renewable Energy Technologies				Students are able to acquire skills related to the concepts of direct and indirect energy conversion methods.
33	192TE2L03	Computational Fluid Dynamics Lab-II	✓			Students are able to demonstrate technical skills related to understand the concepts of advanced computational fluid dynamics and enabling them to be employed as Computational fluid dynamics engineer.
34	192TE2L04	Thermal Engineering Lab -II	✓			Students are able to acquire skills to enhance the knowledge about advanced IC Engines enabling them to be employed in automotive industries.
35	192TE2P01	Mini Project with Seminar	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in thermal engineering 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
36	192TE3E17	Optimization Techniques and Applications		✓		Students are able to acquire analytical skills in finding optimal solutions of different models using various decision-making techniques.
37	192TE3E18	Design and Analysis of Experiments		✓		Students are able to acquire analytical skills related to design and analysis of experiments and applying the concepts in various disciplines of engineering
38	192TE3E19	Convective Heat Transfer		✓		Students are able to acquire skills related to the basics of convective heat transfer, free and forced convection in heat transfer.
39	192TE3E20	Waste to Energy		✓		Students are able to acquire skills related to different methods of waste to energy conversion.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	192ST3O01	Repair & Rehabilitation of Structures	✓			Students are able to acquire skills related to deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed as engineers in related field.
41	192ST3O02	Green Building Systems				Students are able to demonstrate technical skill of various green principles related to buildings in constructional activities
42	192ST3O03	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
43	192ST3O04	Basic Foundation Engineering		✓		Students are able to acquire skills related to basic concepts of foundations and their importance to various structures/buildings
44	192PD3O01	Renewable Energy Technologies	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
45	192PD3O02	Hybrid Electric Vehicles	✓			Students are able to acquire skills related to various types hybrid vehicles operations and control enabling the students to get employed in EV sector.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
46	192PD3O03	Energy Audit and conservation Management			✓	This course focuses on the loss and profit studies and other company maintenance actives, creates the interest among the students to have own company.
47	192PD3O04	Neural Networks and Fuzzy Logic	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems
48	192PD3O05	Industrial Safety			✓	This course helps to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
49	192PD3O06	Composite Materials		✓		Students are able to acquire skills related to synthesis and characterization of various types of composite materials
50	192ES3O01	Embedded System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of electronic systems
51	192ES3O02	Digital System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
52	192ES3O03	Programming Languages for Embedded Systems	✓			Students are able to acquire skills related to design, and developed programs with C and C++ enabling them to be employed for designing and manufacturing of Embedded systems.
53	192ES3O04	Sensors & Actuators	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of sensors and actuators enabling them to be employed for designing and manufacturing of electrical/ electronic systems
54	192VD3O01	Physical Design Automation	✓			Students are able to acquire knowledge related to partitioning, placement and routing techniques in a physical design, enabling them to be employed for designing and manufacturing and utilization of ICs.
55	192VD3O02	VLSI Technology	✓			Students are able to acquire knowledge related to fabrication process of VLSI enabling them to be employed for fabrication and testing of ICs
56	192VD3O03	Nano-electronics	✓			Students are able to acquire knowledge related to different nanoelectronics building blocks such as carbon nanotubes, quantum dots, nano wires enabling them to be employed in the field of VLSI

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
57	192CS3O01	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
58	192CS3O02	Principles of 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.
59	192CS3O03	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
60	192CS3O04	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
61	192CS3O05	Artificial Intelligence	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems
62	192CS3O06	Deep Learning	✓			Students are able to acquire skills related to Deep learning, to analysis of different Deep learning algorithms and solving process in creative way.
63	192PE3O01	Introduction to Petroleum Engineering		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of process in Petroleum Industry.

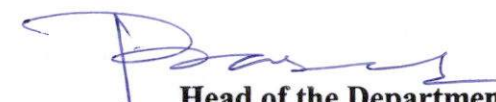
S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
64	192PE3O02	Process Intensification		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
65	192PE3O03	Fundamentals of Liquefied Natural Gas	✓			Students are able to acquire skills related to various aspects of different crude behavior enabling them to be employed as process and transport engineers.
66	192PE3O04	Subsea Engineering				Students are able to demonstrate technical skill of characterizing different subsea structures , modelling and analysis of production.
67	192PE3O05	Geology	✓			Students are able to acquire skills related to various aspects of various structures , traps, stratigraphy's enabling them to be employed as petroleum geologists.
68	192PE3O06	HSE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.
69	192TE3P02	Dissertation/Industrial 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.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
70		Dissertation-II	✓			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		70	43	20	3	



Program Coordinator



Head of the Department

Head of the Department
Department of Mechanical Engineering
Aditya Engineering College (A)
SURAMPALEM-533 437

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192PD1T01	Electrical Machine Modeling and Analysis	✓			Students are able to acquire skills related to fundamental knowledge on various analytical tools for electrical engineering machines simulation and enabling them to be employed in areas of computer aided design of electrical components.
2	192PD1T02	Analysis of Power Electronic Converters	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
3	192HS1T01	Research Methodology and IPR		✓		Students can gain knowledge about the methods of study, observation, comparison and experiment along with different types of Intellectual property rights
4	192PD1L01	Power Electronics Simulation Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
5	192PD1L02	Power Converters Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
6	192PD1E01	Modern Control Theory		✓		This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.
7	192PD1E02	Power Quality and Custom Power Devices	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to get employed in industries focusing in saving money on electricity bill and carbon footprint.
8	192PD1E03	Programmable Logic Controllers & Applications		✓		Students are able to demonstrate technical solving skills by providing knowledge on PLCs with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.

9	192PD1E04	Artificial Intelligence Techniques	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
10	192PD1E05	Renewable Energy Technologies	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
11	192PD1E06	HVDC Transmission and Flexible AC Transmission Systems	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.

I / II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	19MC1A01 19MC2A01	English for Research Paper Writing		✓		Students are able to demonstrate communication writing skills to express fluently in writing form of language which is very much essential for the career growth in research
13	19MC1A02 19MC2A02	Disaster Management				
14	19MC1A03 19MC2A03	Sanskrit for Technical Knowledge				
15	19MC1A04 19MC2A04	Value Education				
16	19MC1A05 19MC2A05	Constitution of India				
17	19MC1A06 19MC2A06	Pedagogy Studies				
18	19MC1A07 19MC2A07	Stress Management by Yoga				
19	19MC1A08 19MC2A08	Personality Development through Life Enlightenment Skills				
20	19MC1A09 19MC2A09	Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language, formal written communication in the organizations.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	192PD2T03	Switched Mode Power Conversion	✓			Students are able to acquire skills related to fundamental knowledge on SMPS working and operations and enabling them to be employed in areas of inverters, charging, etc.
22	192PD2T04	Power Electronic Control of Electrical Drives	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
23	192PD2L03	Electric Drives Simulation Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
24	192PD2L04	Electric Drives Laboratory	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
25	192PD2P01	Mini Project with Seminar				
26	192PD2E07	Control & Integration of Renewable Energy Systems	✓			Students are able to acquire skills related to various types of pivotal role in the development of a sustainable energy supply enabling the students to get employed in renewable energy generation sector.
27	192PD2E08	Hybrid Electric Vehicles	✓			Students are able to acquire skills related to various types hybrid vehicles operations and control enabling the students to get employed in EV sector.
28	192PD2E09	Digital Control Systems		✓		This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.
29	192PD2E10	Advanced Digital Signal Processing		✓		Students are able to acquire skills related to mathematics of signal processing that aids them in getting jobs in industries that use X-rays, MRIs and CT scans, allowing medical images to be analysed and deciphered by complex data processing techniques.

30	192PD2E11	Applications of Power Converters	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
31	192PD2E12	Microcontrollers		✓		Students are able to demonstrate technical solving skills by providing knowledge on microprocessors with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
32	192PD3P02	Dissertation I/Industrial 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.
33	192PD3E13	Digital Signal Processing Controlled Drives	✓			Students are able to acquire skills related to analysis of signals enabling them to be employed for designing and manufacturing of electronic/communication equipment.
34	192PD3E14	Smart Grid Technologies	✓			Students are able to acquire skills related to smart grid technologies and its challenges imposed by the growth in non-dispatchable renewable generation on electric grids that enables them to get employed in power company.
35	192PD3E15	Modeling & Simulation of Power Electronic Systems	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
36	19ST3O01	Repair and Rehabilitation of Structures				
37	19ST3O02	Green Building Systems		✓		Students are able to demonstrate technical skill of various green principles related to buildings in constructional activities
38	19ST3O03	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
39	19ST3O04	Basic Foundation Engineering		✓		Students are able to acquire skills related to basic concepts of foundations and their importance to various structures/buildings
40	19STE3O01	Fuels and Combustion	✓			Students are able to acquire skills in analyzing various fuels and the effect of combustion of fuels on environment enabling them to be employed in automotive, aerospace sectors.


41	19STE3O02	IC Engines	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.
42	19STE3O03	Automotive Technology	✓			Students are able to acquire skills related to the concepts of transmission system, various braking systems and suspension systems enabling them to be employed in automotive sector.
43	19STE3O04	Embedded System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of electronic systems
44	19STE3O05	Digital System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
45	19ES3O01	Embedded System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of electronic systems
46	19ES3O02	Digital System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
47	19ES3O03	Programming Languages for Embedded Systems	✓			Students are able to acquire skills related to design, and developed programs with C and C++ enabling them to be employed for designing and manufacturing of Embedded systems.
48	19ES3O04	Sensors and Actuators				
49	19VD3O01	Physical Design Automation	✓			Students are able to acquire knowledge related to partitioning, placement and routing techniques in a physical design, enabling them to be employed for designing and manufacturing and utilization of ICs.
50	19VD3O02	VLSI Technology	✓			Students are able to acquire knowledge related to fabrication process of VLSI enabling them to be employed for fabrication and testing of ICs
51	19VD3O03	Nano-electronics	✓			Students are able to acquire knowledge related to different nanoelectronics building blocks such as carbon nanotubes, quantum dots, nano wires enabling them to be employed in the field of VLSI.
52	19CS3O01	Python Programming (CSE)	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.

53	19CS3O02	Principles of 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.
54	19CS3O03	Internet of Things	✓			Students will be able to acquire technical skills to develop real time IOT devices which can be used in the field of medicine, agriculture, Vigilance, safety and security services which enable them to be employed as IOT developer.
55	19CS3O04	Machine Learning	✓			Students are able to gain skills related to how to evaluate models generated from data enabling them to be employed for data analytics role.
56	19CS3O05	Artificial Intelligence	✓			Students are able to acquire technical skills to understand the evaluation of the AI, problem solving approaches, expert systems, kr in Expert systems and fuzzy logic problem solutions.
57	19CS3O06	Deep Learning	✓			Students are able to acquire skills related to Deep learning, to analysis of different Deep learning algorithms and solving process in creative way.
58	19PE3O01	Introduction to Petroleum Engineering		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of process in Petroleum Industry.
59	19PE3O02	Process Intensification		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
60	19PE3O03	Fundamentals of Liquefied Natural Gas	✓			Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as process and transport engineers.
61	19PE3O04	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures, modelling and analysis of production.
62	19PE3O05	Geology				
63	19PE3O06	HSE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
64	192PD4P03	Dissertation II	✓			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		64	39	13	1	


Program Coordinator


Head of the Department
Head of The Department
Dept. Of Electrical & Electronics Engineer
Aditva Engineering College (A9)

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192CS1T01	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by implementing mathematical logic, number theory and graph theory.
2	192CS1T02	Advanced Data Structures & Algorithms	✓			Students are able to acquire technical skills related to demonstrate advance algorithmic problems enabling them to be employed as software developers.
3	192CS1E01	Big Data Analytics	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
4	192CS1E02	Digital Image Processing		✓		Students are able to acquire technical skills related to image processing by using various tools related to computer vision.
5	192CS1E03	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 and output and memory operations which enables them to be employed for Hardware core side job opportunities
6	192CS1E04	Advanced Computer Networks				
7	192CS1E05	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
8	192CS1E06	Object Oriented Software Engineering		✓		Students are able to acquire technical skills to understand various O-O concepts along with their applicability contexts
9	192HS1T01	Research Methodology and IPR		✓		Students can gain knowledge about the methods of study, observation, comparison and experiment along with different types of Intellectual property rights.

10	192CS1L01	Advanced Data Structures & Algorithms Lab	✓			Students are able to acquire technical skills related to demonstrate advance algorithmic problems enabling them to be employed as software developers.
11	192CS1L02	Advanced Computing Lab	✓			Students can get hands on experience on web services, virtual environments, use of Hadoop enabling them to work easily as big data engineers.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	192CS2T03	Machine learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
13	192CS2T04	MEAN Stack Technologies	✓			Students are able to deploy and test web applications using MongoDB, Angular and Node js enabling them to be employed as mean stack developers
14	192CS2E07	Advanced Databases and Mining		✓		Students are able to get knowledge on advanced databases by learning about data at logical and view levels by implementing mining technologies and statistics
15	192CS2E08	Ad Hoc & Sensor Networks	✓			Students are able to acquire knowledge on Adhoc networks and their applications and knows how to use different sensors in different scenarios enabling them to work in IoT and Networking sectors
16	192CS2E09	Soft Computing				
17	192CS2E10	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector
18	192CS2E11	Principles of computer security		✓		Students are able to acquire knowledge on principles and methods to secure digital devices and networks
19	192CS2E12	High Performance Computing				
20	192CS2L03	Machine Learning with Python lab	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
21	192CS2L04	MEAN Stack Technologies Lab	✓			Students are able to get hands-on experience on deploying and testing web applications using MongoDB, Angular and Node JS.
22	192CS2P01	Mini Project with Seminar				

23	192MC1A01/ /192MC2A01	English for Research Paper Writing		✓		Students are able to demonstrate communication writing skills to express fluently in writing form of language which is very much essential for the career growth in research
24	191MC2A02 /192MC2A02	Disaster Management				
25	192MC1A03/ 192MC2A03	Sanskrit for Technical Knowledge				
26	192MC1A04/ 192MC2A04	Value Education				
27	192MC1A05/ 192MC2A05	Constitution of India				
28	192MC1A06 /192MC2A06	Pedagogy Studies				
29	192MC1A07 /192MC2A07	Stress Management by Yoga				
30	192MC1A08 /192MC2A08	Personality Development through Life Enlightenment Skills				
31	192MC1A09 /192MC2A09	Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language, formal written communication in the organizations.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
32	192CS3P02	Dissertation-I/ Industrial 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.
33	192CS3E13	Deep Learning	✓			Students are able to acquire skills related to Deep learning, to analysis of different Deep learning algorithms and solving process in creative way.
34	192CS3E14	Social Network Analysis		✓		Students are able to acquire technical skills to Analyze a social network through data wrangling and visualizing a network.
35	192ST3O01	Repair & Rehabilitation of Structures	✓			Students are able to acquire skills related to various aspects of studying deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed in civil industry.
36	192ST3O02	Green Building Systems		✓		Students are able to demonstrate technical skill of various green principles related to buildings in constructional activities
37	192ST3O03	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
38	192ST3O04	Basic Foundation Engineering		✓		Students are able to acquire skills related to basic concepts of foundations and their importance to various structures/buildings.
39	192PD3O01	Renewable Energy Technologies		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.

40	192PD3O02	Hybrid Electric Vehicles	✓			Students are able to acquire skills related to various types hybrid vehicles operations and control enabling the students to get employed in EV sector.
41	192PD3O03	Energy Audit and conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance actives, creates the in trust among the students to have own company.
42	192PD3O04	Neural Networks and Fuzzy Logic	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems.
43	192PD3O05	Industrial Safety			✓	This course helps to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
44	192PD3O06	Composite Materials		✓		Students are able to acquire skills related to synthesis and characterization of various types of composite materials.
45	192TE3O01	Energy Systems	✓			Students are able to acquire skills related to the importance of energy management in the functional area and carrying out budgeting and risk analysis of projects enabling them to be employed in Energy sector.
46	192TE3O02	Fuels and Combustion	✓			Students are able to acquire skills in analysing various fuels and the effect of combustion of fuels on environment enabling them to be employed in automotive, aerospace sectors.
47	192TE3O03	Green Engineering Technology		✓		Students are able to acquire skills in analyzing the significance of alternative sources of energy, green energy systems.
48	192TE3O04	IC Engines	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.
49	192TE3O05	Automotive Technology	✓			Students are able to acquire skills related to the concepts of

						transmission system, various braking systems and suspension systems enabling them to be employed in automotive sector.
50	192ES3O01	Embedded System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of electronic systems
51	192ES3O02	Digital System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
52	192ES3O03	Programming Languages for Embedded Systems	✓			Students are able to acquire skills related to design, and develop programs with C and C++ enabling them to be employed for designing and manufacturing of Embedded systems.
53	192ES3O04	Sensors & Actuators	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of sensors and actuators enabling them to be employed for designing and manufacturing of electrical/ electronic systems
54	192VD3O01	Physical Design Automation	✓			Students are able to acquire knowledge related to partitioning, placement and routing techniques in a physical design, enabling them to be employed for designing and manufacturing and utilisation of ICs.
55	192VD3O02	VLSI Technology	✓			Students are able to acquire skills related to design, and processing technology, enabling them to be employed for designing and manufacturing of VLSI CHIPS.
56	192VD3O03	Nano-electronics	✓			Students are able to acquire knowledge related to different nano electronics building blocks such as carbon nano tubes, quantum dots, nano wires enabling them to be employed in the field of VLSI.
57	192CS3O05	Artificial Intelligence	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems


58	192CS3O06	Deep Learning	✓			Students are able to acquire skills related to Deep learning, to analysis of different Deep learning algorithms and solving process in creative way.
59	192PE3O01	Introduction to Petroleum Engineering		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of process in Petroleum Industry.
60	192PE3O02	Process Intensification		✓		Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
61	192PE3O03	Fundamentals of Liquefied Natural Gas	✓			Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as process and transport engineers.
62	192PE3O04	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures, modelling and analysis of production.
63	192PE3O05	Geology	✓			Students are able to acquire skills related to various aspects of various structures, traps, stratigraphy's enabling them to be employed as petroleum geologists.
64	192PE3O06	HSE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
65	192CS4P03	Dissertation-II	✓			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		65	34	17	03	



Program Coordinator



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

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192VD1T01	CMOS Analog IC Design	✓			Students are able to acquire knowledge related to different analog IC Design techniques enabling them to be employed in the field of VLSI
2	192VD1T02	CMOS Digital IC Design	✓			Students are able to acquire knowledge related to different digital IC Design techniques enabling them to be employed in the field of VLSI
3	192HS1T01	Research methodology and IPR				
4	192VD1E01	VLSI Technology	✓			Students are able to acquire knowledge related to fabrication process of VLSI enabling them to be employed for fabrication and testing of Ics
5	192VD1E02	Nano materials and Nanotechnology	✓			Students are able to acquire knowledge related to fabrication process and applications of nano materials enabling them to be employed in the field of nanotechnology
6	192VD1E03	MEMS Technology	✓			Students are able to acquire knowledge related to fabrication process and applications of MEMS enabling them to be employed in the field of VLSI and ES
7	192VD1E04	Device Modelling	✓			Students are able to acquire knowledge related to fabrication process and modelling of devices to be fabricated enabling them to be employed in the field of VLSI
8	192VD1E05	Nano-Electronics	✓			Students are able to acquire knowledge related to different nanoelectronics building blocks such as carbon nanotubes, quantum dots, nano wires enabling them to be employed in the field of VLSI
9	192VD1E06	Photonics				
10	192VD1L01	CMOS Analog IC Design Lab		✓		Students are able to acquire knowledge related to different analog IC Design techniques enabling them to be employed in the field of VLSI

11	192VD1L02	CMOS Digital IC Design Lab		✓		Students are able to acquire knowledge related to different digital IC Design techniques enabling them to be employed in the field of VLSI
12	192MC1A01/19 2MC2A01	English for Research Paper Writing		✓		Students are able to demonstrate communication writing skills to express fluently in writing form of language which is very much essential for the career growth in research
13	192MC1A02/19 2MC2A02	Disaster Management				
14	192MC1A03/19 2MC2A03	Sanskrit for Technical Knowledge				
15	192MC1A04/19 2MC2A04	Value Education				
16	192MC1A05/19 2MC2A05	Constitution of India				
17	192MC1A06/19 2MC2A06	Pedagogy Studies				
18	192MC1A07/19 2MC2A07	Stress Management by Yoga				
19	192MC1A08/19 2MC2A08	Personality Development through Life Enlightenment Skills				
20	192MC1A09/19 2MC2A09	Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language ,formal written communication in the organizations.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	192VD2T03	Mixed Signal & RF IC Design	✓			Students are able to acquire knowledge related to different mixed signal and RF IC design techniques enabling them to be employed in industries fabricating rf communication equipment.
22	192VD2T04	Physical Design Automation	✓			Students are able to acquire knowledge related to partitioning, placement and routing techniques in a physical design, enabling them to be employed for designing and manufacturing and utilisation of ICs.
23	192VD2E07	Design For Testability	✓			Students are able to acquire skills related to design, implement and evaluate the performance of test circuits built within the chip enabling them to be employed for designing and testing of complex systems
24	192VD2E08	IoT & Its Applications	✓			Students will be able to acquire technical skills to develop real time IOT devices which can be used in the field of medicine, agriculture, Vigilance, safety and security services which enable them to be employed as IOT developer.
25	192VD2E09	VLSI Signal Processing	✓			Students are able to acquire skills related to design and development of visa signal processing, enabling them to be employed for designing and manufacturing of ICs
26	192VD2E10	Microcontrollers & programmable Digital Signal Processors	✓			Students will be able to acquire technical skills to program and interface microcontrollers and DSP processors which enable them to be employed as ES developer.
27	192EM2E11	Network Security & Cryptography				
28	192VD2E11	Low Power VLSI Design	✓			Students are able to acquire skills related to design and development of ices that consume less power, increasing the operating time of battery operated systems, enabling them to be employed for

						designing and manufacturing of Ics
29	192VD2L03	Mixed Signal IC Design Lab		✓		Students are able to acquire technical skills related to simulate mixed signal circuits , enabling them to be employed for designing and manufacturing and utilisation of ICs.
30	192VD2L04	Physical Design Automation Lab		✓		Students are able to acquire technical skills related to partitioning, placement and routing techniques in a physical design , enabling them to be employed for designing and manufacturing and utilisation of ICs.
31	192VD2P01	Mini Project with Seminar	✓			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
32	192VD3E12	Scripting Languages for VLSI	✓			Students are able to acquire skills related to Create and run scripts using PERL/ TCL/ PYTHON in CAD Tools, enabling them to be employed for designing and modelling of systems
33	192VD3E13	Digital System Design & Verification	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital electronic circuits enabling them to be employed for designing and manufacturing of electronic equipment.
34	192EM3E14	Hardware Software co-design	✓			Students are able to acquire skills related to design and development of hardware and software components of an embedded system enabling them to be employed for designing and manufacturing of embedded systems.
35	192ST3O01	Repair & Rehabilitation of Structures	✓			Students are able to acquire skills related to various aspects of studying deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed in civil industry
36	192ST3O02	Green Building Systems				
37	192ST3O03	Basic Concrete Technology	✓			Students are able to acquire cognitive skills related to properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed in constructional sector.
38	192ST3O04	Basic Foundation Engineering		✓		Students are able to acquire skills related to basic concepts of foundations and their importance to various structures/buildings
39	192PD3O01	Renewable Energy Technologies		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.


40	192PD3O02	Hybrid Electric Vehicles	✓			Students are able to acquire skills related to various types hybrid vehicles operations and control enabling the students to get employed in EV sector.
41	192PD3O03	Energy Audit and conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance actives, creates the intrust among the students to have own company.
42	192PD3O04	Neural Networks and Fuzzy Logic	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems
43	192PD3O05	Industrial Safety			✓	This course helps to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
44	192PD3O06	Composite Materials			✓	Students are able to acquire skills related to synthesis and characterization of various types of composite materials
45	192TE3O01	Energy Systems	✓			Students are able to acquire skills related to the importance of energy management in the functional area and carrying out budgeting and risk analysis of projects enabling them to be employed in Energy sector.
46	192TE3O02	Fuels and Combustion	✓			Students are able to acquire skills in analysing various fuels and the effect of combustion of fuels on environment enabling them to be employed in automotive, aerospace sectors.
47	192TE3O03	Green Engineering Technology		✓		Students are able to acquire skills in analyzing the significance of alternative sources of energy, green energy systems.
48	192TE3O04	IC Engines	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.
49	192TE3O05	Automotive Technology	✓			Students are able to acquire skills related to the concepts of transmission system, various braking systems and suspension systems enabling them to be employed in automotive sector.

50	192ES3O01	Embedded System Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of electronic systems
51	192ES3O03	Programming Languages for Embedded Systems	✓			Students are able to acquire skills related to design, and develop programs with C and C++ enabling them to be employed for designing and manufacturing of Embedded systems.
52	192ES3O04	Sensors & Actuators	✓			Students are able to acquire skills related to design,, synthesize and evaluate the performance of sensors and actuators enabling them to be employed for designing and manufacturing of electrical/ electronic systems
53	192CS3O01	Python Programming (CSE)	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
54	192CS3O02	Principles of 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.
55	192CS3O03	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
56	192CS3O04	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists
57	192CS3O05	Artificial Intelligence	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems
58	192CS3O06	Deep Learning	✓			Students are able to acquire skills related to Deep learning, to analysis of different Deep learning algorithms and solving process in creative way.
59	192PE3O01	Introduction to Petroleum Engineering		✓		Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of process in Petroleum Industry.
60	192PE3O02	Process Intensification		✓		Students are able to demonstrate technical skill of characterizing different intensifications , modelling and analysis of process in

						Petroleum Industry.
61	192PE3O03	Fundamentals of Liquefied Natural Gas	✓			Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as process and transport engineers.
62	192PE3O04	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures , modelling and analysis of production
63	192PE3O05	Geology	✓			Students are able to acquire skills related to various aspects of various structures , traps, stratigraphy's enabling them to be employed as petroleum geologists.
64	192PE3O06	HSE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.
65	192VD3P03	Dissertation-I/ Industrial 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

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
66	192VD4P04	Dissertation-II	✓			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		66	39	12	4	


PROGRAM COORDINATOR
HEAD OF THE DEPARTMENT
Head of the Department
Department of E.C.E.
Aditya Engineering College (A9)

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192ST1T01	Theory of Elasticity	✓			Students are able to acquire skills related to designing of beam to support load enabling them to be employed for constructional sector. Example, Roof & bridges.
2	192ST1T02	Structural dynamics	✓			Students are able to acquire analyzing skills related to the behaviour of structure subjected to dynamic loading enabling them to be employed as civil engineers.
3	192ST1T03	Advanced Concrete Technology	✓			Students are able to acquire cognitive skills related to advanced concepts of properties of concrete, design and test the concrete useful in constructional activities enabling them to be employed as structural engineers.
4	1925T1E03	Design of RCC Foundations		✓		Students are able to acquire skills related to designing of foundations based on soil properties which further influence the structural elements like beams, columns, slabs and foundations enabling them to be employed as designers and planners
5	1925T1E01	Matrix Analysis of Structures	✓			Students are able to demonstrate analytical skills to solve practical problems of trusses, beams & frames during designing of various constructional elements.
6	1925T1E02	Analytical & Numerical Method for Structural Engineering		✓		Students are able to acquire analytical skills related to designing of the structural elements like beams, columns, slabs and foundations enabling them to be employed as designers and planners

7	1925T1E05	Repair & Rehabilitation of Structures	✓			Students are able to acquire skills related to deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed as engineers in related field.
8	1925T1E04	Bridge Engineering	✓			Students are able to acquire skills related to force applied by the flow of water and relating it to design of dynamics/cyclic loads in various types of bridges enabling them to be employed as design engineers.
9	1925T1E06	Advanced Reinforced Concrete Design	✓			Students are able to acquire skills related to designing of structural elements like beams, columns, slabs and foundations using advanced reinforced materials along with concrete enabling them to be employed as designers and planners
10	1925T1L01	Advanced Concrete Technology Laboratory		✓		Students are able to acquire technical skills related to properties of concrete, design and test the concrete useful in constructional activities
11	1925T1L02	Advanced Structural Engineering Laboratory		✓		Students are able to demonstrate technical skill of testing advanced composite materials, light weight structures and engineering optimization.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneur ship	Remarks
12	192ST2T04	Finite Element Methods in Structural Engineering	✓			Students are able to demonstrate problem solving skills to analyze structural related problems and developing software development programs enabling them to be employed in various industries.
13	192ST2T05	Theory of Plates and Shells	✓			Students are able to acquire skills related to structural action against in stronger, thinner & lighter in structural members enabling them to be employed as civil engineers.
14	192ST2E07	Stability of Structures	✓			Students are able to acquire skills related to various aspects of soil mechanics, to ensure the safety of structures against collapse enabling them to be employed as designers of various constructional elements.
15	192ST2E08	Advanced Steel Design	✓			Students are able to acquire skills related to properties of steel structures and designing of connections between the structural members at industrial, offshore, high rise building enabling them to be employed for designing of building units.
16	192ST2E09	Analysis of offshore Structures	✓			Students are able to acquire skills related to properties of structural members when subjected to seismic loads and designing earthquake resistant structures enabling them to be employed in civil industry.
17	192ST2E10	Earthquake Restant Design of Buildings	✓			Students are able to acquire skills related to properties of structural members when subjected to seismic loads and designing earthquake resistant structures enabling them to be employed in civil industry.
18	192ST2E11	Precast and Prefabricated Structures		✓		Students are able to acquire skills related to properties of structural members related to precast and prefabricated structures .

19	192ST2E12	Earth Retaining Structures	✓			Students are able to acquire skills related to various aspects of properties of structural members when subjected to seismic loads and designing earthquake resistant structures enabling them to be employed as structural engineers.
20	192ST2L03	Computer Aided Design Laboratory		✓		Students are able to demonstrate technical skill of reducing manual drawing and related problems in designing and planning of constructional activities.
21	192ST2L04	Structural Design Laboratory		✓		Students are able to demonstrate technical skill of designing of various structural elements.
22	192ST2P01	Mini Project With Seminar		✓		Students are able to demonstrate technical skills related to handling real time projects
23	192MC1A01/192MC2A01	English for Research Paper Writing		✓		Students are able to demonstrate writing skills related to various research articles
24	192MC1A02/192MC2A02	Disaster Management		✓		Students are able to acquire skills related to preparedness towards various disasters in the environment.
25	192MC1A03/192MC2A03	Sanskrit for Technical Knowledge				
26	192MC1A04/192MC2A04	Value Education			✓	Students are able to acquire skills related to various values and ethics to be inculcated during maintenance of standards in the constructional sector of the society.
27	192MC1A05/192MC2A05	Constitution of India		✓		Students are able to familiarize themselves with various acts and regulations related to societal activities helping them in handling real time problems.
28	192MC1A06/192MC2A06	Pedagogy Studies		✓		Students are able to acquire skills related to various teaching styles of concepts learnt by them in their curriculum.
29	192MC1A07/192MC2A07	Stress Management by Yoga				
30	192MC1A08/192MC2A08	Personality Development through Life Enlightenment Skills	✓			Students are able to acquire skills related to preparedness to handle situations in day to day life enabling them to help in employment in various sectors.
31	192MC1A09/192MC2A09	Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language, formal written communication in the organizations.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
32	192ST3E13	Design of Pre-stressed Concrete structures	✓			Students are able to acquire skills related to bridge designing and metro constructions enabling them to be employed in structural field of constructional activities.
33	192ST3E14	Structural Health Monitoring	✓			Students are able to acquire skills related to damage detection and characterization strategy for engineering structures helping in performance enhancement in existing structures enabling them to be employed as structural engineers
34	192ST3E15	Industrial Structures	✓			Students are able to acquire various technical skills in the construction of different industrial structures enabling them to be employed in various industries.
35	19STMOOC1	MOOCS-I*		✓		Students are able to demonstrate technical skill of principles learnt in online courses helping in acquainting them with multidisciplinary knowledge apart from their curriculum
36	---	MOOCs-II #		✓		Students are able to demonstrate technical skill of principles learnt in online courses helping in acquainting them with multidisciplinary knowledge apart from their curriculum.
37	192PD3O01	Renewable Energy Technologies		✓		Students are able to acquire skills related to solar, wind and bio-mass energy resources and conversion principles and techniques of various renewable resources.
38	192PD3O02	Hybrid Electric Vehicles	✓			Students are able to acquire skills related to various types hybrid vehicles operations and control enabling the students to get employed in EV sector.
39	192PD3O03	Energy Audit and conservation Management			✓	The course focuses on the loss and profit studies and other company maintenance activities, creates the trust among the students to have own company.
40	192PD3O04	Neural Networks and Fuzzy				

		Logic				
41	192PD3O05	Industrial Safety			✓	This course helps to enable the students learn about environmental factors related to human, to enrich the students with anthropometric principles for work space design and to make the students to acquire knowledge on advance effects of air pollution, safety regulations and standards.
42	192PD3O06	Composite Materials	✓			Students are able to acquire skills related to various materials of different structures enabling them to be employed as structural engineers.
43	192TE3O01	Energy Systems		✓		Students are able to acquire skills related to the importance of energy management in the functional area and carrying out budgeting and risk analysis of projects enabling them to be employed in Energy sector.
44	192TE3O02	Fuels and Combustion	✓			Students are able to acquire skills in analysing various fuels and the effect of combustion of fuels on environment enabling them to be employed in automotive, aerospace sectors.
45	192TE3O04	IC Engines	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.
46	192TE3O05	Automotive Technology	✓			Students are able to acquire skills related to the concepts of transmission system, various braking systems and suspension systems enabling them to be employed in automotive sector.
47	192ES3O01	Embedded System Design				
48	192ES3O02	Digital System Design				
49	192ES3O03	Programming Languages for Embedded Systems				
50	192ES3O04	Sensors & Actuators	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of sensors and actuators enabling them to be employed for designing and manufacturing of electrical/ electronic systems
51	192VD3O01	Physical Design Automation	✓			Students are able to acquire knowledge related to partitioning, placement and routing techniques in a physical design,*enabling them to be employed for designing and manufacturing and utilisation of ICs.
52	192VD3O02	VLSI Technology				

53	192VD3O03	Nano-electronics	✓			Students are able to acquire knowledge related to different nano electronics building blocks such as carbon nano tubes, quantum dots, nano wires enabling them to be employed in the in industries.
54	192CS3O01	Python Programming (CSE)				
55	192CS3O02	Principles of Cyber Security		✓		Students are able to learn various technical skills involved in managing cyber security and avoiding problematic situations in present day world.
56	192CS3O03	Internet of Things		✓		Students will be able to demonstrate various technical dskills involved in relating to physical objects with sensors and communication between devices and the cloud used in day to day life.
57	192CS3O04	Machine Learning				
58	192CS3O05	Artificial Intelligence				
59	192CS3O06	Deep Learning				
60	192PE3O01	Introduction to Petroleum Engineering		✓		Students are able to demonstrate technical skill of characterizing different streams, modelling and analysis of process in Petroleum Industry.
61	192PE3O02	Process Intensification				Students are able to demonstrate technical skill of characterizing different intensifications, modelling and analysis of process in Petroleum Industry.
62	192PE3O03	Fundamentals of Liquified Natural Gas		✓		Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as process and transport engineers.
63	192PE3O04	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures, modelling and analysis of production.
64	192PE3O06	HSE in Petroleum Industry			✓	Students are able to apply the knowledge of safety management enabling them to become an entrepreneur in any domain of their choice.
65	192ST3P02	Dissertation-I/ Industrial Project		✓		Students are able to demonstrate technical skill of principles learnt in various courses in their curriculum .

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
66	192ST4P03	Dissertation-II			✓	Students will be able to demonstrate problem identification, analysis, design solutions or applications in structural engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		66	26	23	5	



Program Coordinator



Head of the Department
Head of the Department
Dept. of Civil Engineering
ADITYA ENGINEERING COLLEGE (A9)

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	192PE1T01	Offshore Drilling.		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
2	192PE1T02	Fundamentals of Petroleum Geology and Reservoir Engineering. (NON-PE stream)		✓		Students are able to demonstrate technical skill of characterizing different offshore structures, modelling and analysis of drilling.
3	192PE1T03	Reservoir Stimulation (PE stream)	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of reservoir rocks enabling them to be employed for designing and evaluation of formation for treatment .
4	192PE1T04	Petroleum Well Drilling and Production Engineering. (NON-PE stream)		✓		Students are able to demonstrate technical skill of characterizing different drilling and production methods, modelling and analysis of subsurface exploration.
5	192PE1E01	Advanced Numerical Methods and Applied Statistics		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using Advanced Numerical Methods and Applied Statistics (MATLAB Based) in various engineering disciplines.
6	192PE1E02	CBM and Shale Gas Engineering			✓	Students are able to acquire skills related to design, synthesize and evaluate the performance of CBM and shale wells enabling them to be employed for designing and evaluation well for methane and oil extraction.
7	192PE1E03	Transportation of Oil and Gas		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
8	192PE1E04	Advanced Well Logging Techniques		✓		Students are able to demonstrate technical skill of characterizing different lift types , modelling and analysis of fluid behaviours in well testing.

		and Well Testing Analysis				
9	192HS1T01	Research Methodology and IPR		✓		Students can gain knowledge about the methods of study, observation, comparison and experiment along with different types of Intellectual property rights
10	192PE1L01	Advanced Numerical Methods and		✓		Students are able to demonstrate technical skill of characterizing different gas wells , modelling and analysis of fluid behaviours.
11	192PE1L02	Drilling Simulation Laboratory	✓			Students are able to learn the concepts of different drilling properties and analyse them by using software

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	192PE2T05	Artificial Lift Techniques		✓		Students are able to demonstrate technical skill of characterizing different lift types , modelling and analysis of fluid behaviours in wells.
13	192PE2T06	Reservoir Modeling and Simulation		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using Practical Reservoir Modelling and Simulation (MATLAB Based) in various engineering disciplines.
14	192PE2E05	Advanced EOR Techniques		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
15	192PE2E06	Advanced Well Completions		✓		Students are able to demonstrate technical skill of characterizing different wells , modelling and analysis of completions.
16	192PE2E07	Flow Assurance		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of flow in wells.
17	192PE2E08	Advanced Horizontal Well Technology				
18	192PE2L03	Reservoir Simulation Laboratory	✓	✓		Students are able to acquire skills related to various aspects of different reservoirs enabling them to be employed as Reservoir Engineers.
19	192PE2L04	Flow Assurance Laboratory		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of flow in wells.
20	192PE2P01	Mini Project with Seminar	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in petroleum engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
21	192MC1A01/ 192MC2A01	English for Research Paper Writing		✓		Students are able to demonstrate communication writing skills to express fluently in writing form of language which is very much essential for the career growth in research

22	192MC1A02/ 192MC2A02	Disaster Management				
23	192MC1A03/ 192MC2A03	Sanskrit for Technical Knowledge				
24	192MC1A04/ 192MC2A04	Value Education				
25	192MC1A05/ 192MC2A05	Constitution of India				
26	192MC1A06/ 192MC2A06	Pedagogy Studies				
27	192MC1A07/ 192MC2A07	Stress Management by Yoga				
28	192MC1A08/ 192MC2A08	Personality Development through Life Enlightenment Skills				
29	192MC1A09/ 192MC2A09	Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language ,formal written communication in the organizations.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	192ST3O01	Repair & Rehabilitation of Structures				
31	192ST3O02	Green Building Systems				
32	192ST3O03	Basic Concrete Technology				
33	192ST3O04	Basic Foundation Engineering				
34	192PD3O01	Renewable Energy Technologies		✓		Students Are Able To Acquire Skills Related To Solar, Wind And Bio-Mass Energy Resources And Conversion Principles And Techniques Of Various Renewable Resources.
35	192PD3O02	Hybrid Electric Vehicles	✓			Students Are Able To Acquire Skills Related To Various Types Hybrid Vehicles Operations And Control Enabling The Students To Get Employed In Ev Sector.
36	192PD3O03	Energy Audit and conservation Management			✓	The Course Focuses On The Loss And Profit Studies And Other Company Maintenance Actives, Creates The Intrust Among The Students To Have Own Company.
37	192PD3O04	Neural Networks and Fuzzy Logic	✓			Students Are Able To Acquire Skills Related To Design, Synthesize And Evaluate The Performance Of Ann Enabling Them To Be Employed For Designing Artificial Intelligence Systems
38	192PD3O05	Industrial Safety			✓	This Course Helps To Enable The Students Learn About Environmental Factors Related To Human, To Enrich The Students With Anthropometric Principles For Work Space Design And To Make The Students To Acquire Knowledge On Advance Effects Of Air Pollution, Safety Regulations And Standards.

39	192PD3O06	Composite Materials		✓		Students Are Able To Acquire Skills Related To Synthesis And Characterization Of Various Types Of Composite Materials
40	192TE3O01	Energy Systems	✓			Students Are Able To Acquire Skills Related To The Importance Of Energy Management In The Functional Area And Carrying Out Budgeting And Risk Analysis Of Projects Enabling Them To Be Employed In Energy Sector.
41	192TE3O02	Fuels and Combustion	✓			Students Are Able To Acquire Skills In Analysing Various Fuels And The Effect Of Combustion Of Fuels On Environment Enabling Them To Be Employed In Automotive, Aerospace Sectors.
42	192TE3O03	Green Engineering Technology		✓		-Students Are Able To Acquire Skills In Analyzing The Significance Of Alternative Sources Of Energy, Green Energy Systems.
43	192TE3O04	IC Engines	✓			Students Are Able To Acquire Skills Related To The Engine Performance By Using Turbo Charging And Super Charging And Enabling Them To Be Employed In Automotive Industries.
44	192TE3O05	Automotive Technology	✓			Students Are Able To Acquire Skills Related To The Concepts Of Transmission System, Various Braking Systems And Suspension Systems Enabling Them To Be Employed In Automotive Sector.
45	192ES3O01	Embedded System Design	✓			Students Are Able To Acquire Skills Related To Design, Synthesize And Evaluate The Performance Of Embedded Systems Enabling Them To Be Employed For Designing And Manufacturing Of Electronic Systems
46	192ES3O02	Digital System Design	✓			Students Are Able To Acquire Skills Related To Design, Synthesize And Evaluate The Performance Of Digital Systems Enabling Them To Be Employed For Designing And Manufacturing Of Electronic Systems
47	192ES3O03	Programming Languages for	✓			Students Are Able To Acquire Skills Related To Various Programming Languages Enabling Them To Be Employed For Designing And Manufacturing Of Embedded Systems
48	192ES3O04	Sensors & Actuators	✓			Students Are Able To Acquire Skills Related To Design, Synthesize And Evaluate The Performance Of Sensors And Actuators Enabling Them To Be Employed For Designing And Manufacturing Of Electrical/ Electronic Systems


49	192VD3O01	Physical Design Automation	✓			Students Are Able To Acquire Knowledge Related To Partitioning, Placement And Routing Techniques In A Physical Design , Enabling Them To Be Employed For Designing And Manufacturing And Utilisation Of Ics.
50	192VD3O02	VLSI Technology	✓			Students Are Able To Acquire Skills Related To Design, And Processing Technology, Enabling Them To Be Employed For Designing And Manufacturing Of Vlsi Chips
51	192VD3O03	Nano-electronics	✓			Students Are Able To Acquire Knowledge Related To Different Nanoelectronics Building Blocks Such As Carbon Nanotubes, Quantum Dots, Nano Wires Enabling Them To Be Employed In The Field Of Vlsi
52	192CS3O01	Python Programming (CSE)	✓			Students Are Able To Acquire Skills Related To Python Programming, Enabling Them To Be Employed As Software Developers.
53	192CS3O02	Principles of 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.
54	192CS3O03	Internet of Things	✓			Students Are Able To Acquire Skills Related To Internet Of Things And Enabling Them To Be Employed For Iot Sector.
55	192CS3O04	Machine Learning	✓			Students Are Able To Acquire Skills Related To Data Science Algorithms, Enabling Them To Be Employed As Data Scientists.
56	192CS3O05	Artificial Intelligence	✓			Students Are Able To Acquire Skills Related To Design, Synthesize And Evaluate The Performance Of Ann Enabling Them To Be Employed For Designing Artificial Intelligence Systems
57	192CS3O06	Deep Learning	✓			Students Are Able To Acquire Skills Related To Deep Learning, To Analysis Of Different Deep Learning Algorithms And Solving Process In Creative Way.
58	192PE3O01	Introduction to Petroleum Engineering		✓		Students Are Able To Demonstrate Technical Skill Of Characterizing Different Streams , Modelling And Analysis Of Process In Petroleum Industry.

59	192PE3O02	Process Intensification		✓		Students Are Able To Demonstrate Technical Skill Of Characterizing Different Intensifications , Modelling And Analysis Of Process In Petroleum Industry.
60	192PE3O03	Fundamentals of Liquefied Natural Gas	✓			Students Are Able To Acquire Skills Related To Various Aspects Of Different Crude Behaviour Enabling Them To Be Employed As Process And Transport Engineers.
61	192PE3O04	Subsea Engineering		✓		Students Are Able To Demonstrate Technical Skill Of Characterizing Different Subsea Structures , Modelling And Analysis Of Production.
62	192PE3O05	Geology	✓			Students Are Able To Acquire Skills Related To Various Aspects Of Various Structures , Traps, Stratigraphy's Enabling Them To Be Employed As Petroleum Geologists.
63	192PE3O06	HSE in Petroleum Industry			✓	Students Are Able To Apply The Knowledge Of Safety Management Enabling Them To Become An Entrepreneur In Any Domain Of Their Choice.
64	192PE3P02	Dissertation-I/ Industrial Project	✓			Students Will Be Able To Demonstrate Problem Identification, Analysis, Design Solutions Or Applications In Petroleum Engineering Domain Through The Acquired Technical, Cognitive, Communication And Creative Skills To Address Societal Needs.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
65	192PE4P03	Dissertation-II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in Petroleum Engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
	Total		23	21	4	


Program Coordinator


Head of the Department
Head of the Department
Department of Petroleum Technology
Aditya Engineering College (A)
SURAMPALEM-5 437

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	194MB1T01	Management and Organizational Behavior		✓		The students are able to demonstrate managerial skills by using the motivational theories ,leadership theories and organizational structure principles.
2	194MB1T02	Managerial Economics		✓		The students are able to demonstrate Problem solving skills by analysing different micro economic factors affecting business
3	194MB1T03	Accounting for Managers	✓			The students are able to acquire skills related to financial statements preparation which enable them to be employed in accounts department of manufacturing and service based companies
4	194MB1T04	Quantitative Analysis for Business Decisions		✓		The students are able to demonstrate problem solving skills by Modelling Linear programming, Dynamic Programming
5	194MB1T05	Legal and Business Environment				.
6	194MB1T06	Business Communication and Soft Skills		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language ,formal written communication in the organizations.
7	194MB1L01	Business Communication and Soft Skills Lab.		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language ,formal written

						communication in the organizations
8	194MB1L02	Information Technology – Lab – I (Spreadsheet and Tally)		✓		The students are able to demonstrate technical skills to analyze the accounts data by using tally .
9	194MBMOOC1	MOOCs: SWAYAM/NPTEL.		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses
10	194MB1O01	Cross Cultural Management.		✓		The students are able to demonstrate managerial skills by analyzing Different work cultures both domestic and International & strategies for organizational change
11	194MB1O02	Rural Innovation Projects.		✓		The students are able to demonstrate analytical skills by modelling of problem identification & analysis of problems in rural areas

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	194MB2T07	Financial Management	✓			The students are able to acquire skills related to Investment decisions, Financial decisions ,dividend decisions which enable them to be employed in Finance department of manufacturing and service based companies
2	194MB2T08	Human Resource Management	✓			The students are able to acquire skills related to recruitment, selection ,performance appraisal which enable them to be employed in HR department of manufacturing and service companies
3	194MB2T09	Marketing Management	✓			The students are able to acquire skills related to marketing reserach,marketing mix ,promotional activities which enable them to be employed in marketing department of manufacturing companies
4	194MB2T10	Operations Management	✓			The students are able to acquire skills related to plant layout designs, productivity improving factors which enable them to be employed in manufacturing companies
5	194MB2T11	Business Research Methods		✓		The students are able to demonstrate Research skills to analyze functional area problems in Industries
6	194MB2L03	IT-Lab – 2 (R		✓		The students are able to demonstrate technical skills to analyze the business data by using R

		Programming)				programming.
7	194MB2O04	Project Management.		✓		The students are able to demonstrate managerial skills by Modelling of project, project management, project life-cycle, project appraisal.
	194MB2O05	Technology Management.		✓		The students are able to demonstrate technical skills by analyzing technological knowledge of business organization
9	194MB2O06	Lean Management.		✓		The students are able to demonstrate technical skills by characterising lean manufacturing techniques from TPS and its contribution for improving organizational performance
10	194MB2O07	Data base Management System.		✓		The students are able to demonstrate technical skills by learning data models of DBMS

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	194MB3T12	Strategic Management			✓	Students are able to apply the knowledge of environmental scanning and generic strategy alternatives ,which enable them to become entrepreneurs .
2	194MB3T13	Operations Research				
3	194HR3E01	Leadership and Change Management	✓			The students are able to acquire skills related to leadership qualities , leader capability which enable them to be employed in HR department of Manufacturing and service companies
4	194HR3E02	Performance Evaluation and Compensation Management	✓			The students are able to acquire skills related to wage payment plans , reward and motivation relation which enable them to be employed in HR department of Manufacturing and service companies.
5	194HR3E03	Human Capital Management	✓			The students are able to acquire skills related to employee's discipline, safety & security at work locations which enable them to be employed in HR department of

						Manufacturing and service companies.
6	194HR3E04	Manpower Planning, Recruitment, and Selection	✓			The students are able to acquire skills related to recruitment, selection ,performance appraisal which enable them to be employed in HR department of manufacturing and service companies
7	194HR3E02	Investment Analysis and Portfolio Management	✓			The students are able to acquire skills related to financial markets risk and return analysis, optimum port folio which enable them to be employed in stock markets.
8	194FI3E02	Managing Banks and Financial Institutions	✓			The students are able to acquire skills related to banking industry ,NPA capital adequacy rules which enable them to be employed in banking Industry.
9	194FI3E03	Financial Markets and Services	✓			The students are able to acquire skills related to mergers, takeovers, valuation of firm after mergers which enable them to be employed in Finance department of manufacturing and service companies
10	194FI3E04	Taxation	✓			The students are able to acquire skills related to Tax structure and tax laws& GST, which enable them to be employed in Finance department of manufacturing and service companies
11	194MA3E01	Consumer Behavior	✓			The students are able to acquire skills related to analysis of consumer behaviour & Strategies which enable them to be

						employed in Marketing department of manufacturing and service based companies.
12	194MA3E02	Retail Management	✓			The students are able to acquire skills related to opportunities in Indian retail marketing and retail industry growth ,strategies which enable them to be employed in Marketing department of manufacturing and service based companies.
13	194MA3E03	Strategic Marketing Management	✓			The students are able to acquire skills related to Strategic marketing techniques techniques which enable them to be employed in Marketing department of manufacturing and service based companies.
14	194MA3E04	Digital and Social Media Marketing	✓			The students are able to acquire skills related to SEO,Digital marketing techniques which enable them to be employed in Marketing department of manufacturing and service based companies.
15	194MB3P01	Industrial Project based on Summer Internship		✓		Students are able to Analyze and find the solution for Present Problems in industry or a particular company
16	194SY3E01	Data Mining for Business Decisions				
17	194SY3E02	Managing Software Projects	✓			The students are able to acquire skills related to Software Cost Estimation And Activity

						Planning., which enable them to be employed in Software companies
18	194SY3E03	Web Designing	✓			The students are able to acquire skills related to HTML ,Website designing which enable them to be employed in Software companies
19	194SY3E04	Business Analytics	✓			The students are able to acquire skills related to system analysis techniques, system designs , which enable them to be employed in Software companies

IV SEMSTER

S. N o	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	194MB4T14	Supply Chain Management and Analytics	✓			The students are able to acquire skills related to logistics management , supply chain designs which enable them to be employed in logistics based service companies.
2	194MB4T15	Innovation and Entrepreneurship			✓	Students are able to apply the knowledge of entrepreneurial skills, legal steps to start enterprises ,which enable them to become entrepreneurs.
3	194HR4E05	Labour Welfare and employment laws	✓			The students are able to acquire skills related to different labour acts ,minimum wages act which enable them to be employed in HR department of manufacturing and service based companies.
4	194HR4E06	International HRM	✓			The students are able to acquire skills related to global recruitment, Cultural diversity, Global training methods which enable them to be employed in HR department of manufacturing and service based companies.
5	194HR4E07	Employee Relations and Engagement	✓			The students are able to acquire skills related to employee relations in relation with work environment which enable them to be employed in HR department of manufacturing and service based companies.

6	194HR4E08	Strategic HRM	✓			The students are able to acquire skills related to Forwards, futures ,options &Swaps which enable them to be employed in Finance department of manufacturing and service companies
7	194FI4E05	Financial Derivatives	✓			The students are able to acquire skills related to international trade mechanism, derivatives ,Exchange rate fluctuations which enable them to be employed in Finance department of manufacturing and service companies
8	194FI4E06	International HRM	✓			The students are able to acquire skills related to Risk management in securities markets, Swaps which enable them to be employed in Finance department of manufacturing and service companies
9	194FI4E07	Risk Management	✓			The students are able to acquire skills related to investor behaviour analysis &rational thinking skill of investor which enable them to be employed in Finance department of manufacturing and service companies
10	194FI4E08	Behavioral Finance	✓			The students are able to acquire skills related to Forwards, futures ,options &Swaps which enable them to be employed in Finance department of manufacturing and service companies
11	194MA4E05	Services Marketing	✓			The students are able to acquire skills related to Indian service industry ,growth ,opportunities and strategies which enable them to be employed in Marketing department of manufacturing and

						service companies
12	194MA4E06	Promotional and Distribution Management	✓			The students are able to acquire skills related to sales promotional activates design ,advertisement strategies which enable them to be employed in Marketing department of manufacturing and service companies
13	194MA4E07	Green Marketing				
14	194MA4E08	Global Marketing Management	✓			The students are able to acquire skills related to global marketing opportunities which enable them to be employed in Marketing department of manufacturing and service companies
15	194MB4C01	Comprehensive Viva - Voce		✓		Project Help the Student to Analyze and find the solution for Present Industry Problems.
16	194SY4E05	Big Data Analytics	✓			The students are able to acquire skills related to Understanding of HDFS concepts, Interfacing the HDFS and Map Reduce Jobs. , which enable them to be employed in Software companies
17	194SY4E06	Enterprise Resource Planning	✓			The students are able to acquire skills related to ERP-SCM, which enable them to be employed in Software companies
18	194SY4E07	Cyber Laws & Security	✓			The students are able to demonstrate Technical skills by Modelling of cyber laws and security.
19	194SY4E08	Artificial Intelligence	✓			The students are able to acquire skills related to A.I algorithms in the different fields of science,

		and Machine Learning				medicine, finance which enable them to be employed in Software companies
	Total	59	35	17	2	

*D. Nehru***Program Coordinator***N. V. Reddy***Head of the Department**

Head of the Department
Department of Management Studies
Aditya Engineering College (A)
SURAMPALEM

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I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	195IM1T01	English Language – 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	195IM1T02	Business Mathematics & Statistics		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using statistical equations , fundamentals mathematics used in various decisions of business.
3	195IM1T03	Fundamentals of Business Organization				.
4	195IM1T04	Financial Accounting – I	✓			The students are able to acquire skills related to basics of accountant, preparation Financial statements which enable them to be employed in accounts department of manufacturing and service based companies
5	195IM1T05	Fundamentals of Computers		✓		The students are able to demonstrate technical skills through learning of different operating systems ,E Business and Epayment methods

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	195IM2T06	English Language – 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.
2	195IM2T07	Business Environment		✓		The students are able to demonstrate Business environment skills by characterising The SWOT of different companies.
3	195IM2T08	Managerial Economics		✓		Core Course Imparts knowledge on micro economics ,Macro economics & understands different market structures ,pricing methods
4	195IM2T09	Financial Accounting – II	✓			The students are able to acquire skills related to Fund flow preparation cash flow preparation ,preparation Financial report which enable them to be employed in accounts department of manufacturing and service based companies
5	195IM2T10	Organizational Communications		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language ,formal written communication in the organizations.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	195IM3T11	Principles of Management		✓		The students are able to demonstrate managerial skills by using the motivational theories ,leadership theories and organizational structure principles.
2	195IM3T12	Cost Accounting	✓			The students are able to acquire skills related to Standard costing ,Marginal costing, Break even analysis which enable them to be employed in accounts department of manufacturing and service based companies
3	195IM3T13	Banking Theory & Practice	✓			The students are able to acquire skills related to banking industry ,NPA capital adequacy rules which enable them to be employed in banking Industry
4	195IM3T14	Business Law				
5	195IM3T15	Entrepreneurship Development			✓	Students are able to apply the knowledge of entrepreneurial skills, legal steps to start enterprises ,which enable them to become entrepreneurs .

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	195IM4T16	Organizational Behavior		✓		The students are able to demonstrate managerial skills by using the Management styles and principles to build an organization.
2	195IM4T17	Management Accounting	✓			The students are able to acquire skills related to accounting concepts Advance accounting tools, which enable them to be employed in Finance department of manufacturing and service companies
3	195IM4T18	Company Law	✓			The students are able to acquire skills related legal and business environment and students will learn the companies Act of 1956 and 2013, which enable them to be employed in IR applicable companies
4	195IM4T19	Elements of Direct & Indirect Taxes	✓			The students are able to acquire skills related to Tax structure and tax laws, which enable them to be employed in Finance department of manufacturing and service companies
5	195IM4T20	Management Information		✓		The students are able to demonstrate technical skills to analyze Different information systems, usage in

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	195IM5T21	Financial Management	✓			The students are able to acquire skills related to Investment decisions, Financial decisions ,dividend decisions which enable them to be employed in Finance department of manufacturing and service based companies
2	195IM5T22	Marketing Management	✓			The students are able to acquire skills related to marketing reserach,marketing mix ,promotional activities which enable them to be employed in marketing department of manufacturing companies
3	195IM5T23	Human Resource Management	✓			The students are able to acquire skills related to recruitment, selection ,performance appraisal which enable them to be employed in HR department of manufacturing and service companies
4	195IM5T24	Operations Management	✓			The students are able to acquire skills related to plant layout designs, productivity improving factors which enable them to be employed in manufacturing companies
5	195IM5T25	Business Research Methodology		✓		The students are able to demonstrate Research skills to analyze functional area problems in Industrie

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	195IM6T26	Operations Research		✓		The students are able to demonstrate problem solving skills by Modelling Linear programming, Dynamic Programming
2	195IM6T27	International Business			✓	Students are able to apply the knowledge of environmental scanning and generic strategy alternatives ,which enable them to become entrepreneurs .
3	195IM6T28	Strategic Management			✓	Students are able to apply the knowledge of International business strategies ,which enable them to become international entrepreneurs .
4	195IM6T29	Decision Support Systems		✓		The students are able to demonstrate managerial Skills by Modelling Decision making systems
5	195IM1P01	Summer Internship (6 Weeks)		✓		Project Help the Student to Analyze and find the solution for Present Industry Problems.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	175HR8E05	Strategic Human Resource Management	✓			The students are able to acquire skills related to recruitment, Competitive strategies which enable them to be employed in HR department of Manufacturing and service based companies.
2	175HR8E06	Organizational Development & Change	✓			The students are able to acquire skills related to resistant to change, change strategies which enable them to be employed in HR department of manufacturing and service based companies.
3	175IM8T32	Total Quality Management		✓		The students are able to demonstrate managerial skills by Modelling of ISO standards ,six sigma methodology, and Total quality management in business processes.
4	175IM8T33	Project Management		✓		The students are able to demonstrate managerial skills by Modelling of project, project management, project life-cycle, project appraisal.
5	175FI8E04	Strategic Financial Management	✓			The students are able to acquire skills related to mergers,takeovers,valuation of the firm after merger which enable them to be employed in accounts department of manufacturing and service based companies.
6	175FI8E05	Portfolio Management	✓			The students are able to acquire skills related to financial markets risk and return analysis, optimum port folio which enable them to be employed in stock markets.
7	175SY8E04	System Analysis & Design				
8	175SY8E05	Business Intelligence	✓			The students are able to acquire skills related to Data

		Insurance Management				industry ,NPA capital adequacy rules which enable them to be employed in banking Industry.
8	175FI7E03	Advanced Management Accounting	✓			The students are able to acquire skills related to Cost accounting, advance accounting techniques which enable them to be employed in accounts department of manufacturing and service based companies.
9	175MA7E03	Supply Chain Management	✓			The students are able to acquire skills related to cost benefit analysis of different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
10	175SY7E01	E-Business	✓			The students are able to acquire skills related to Ecommerce methods,SEO,Digital marketing which enable them to be employed in Software companies
11	175SY7E02	Relational Database Management Systems				
12	175SY7E03	Web Designing	✓			The students are able to acquire skills related to HTML ,Website designing which enable them to be employed in Software companies
13	175MA7E01	Consumer Behavior	✓			The students are able to acquire skills related to analysis of consumer behaviour& Strategies which enable them to be employed in Marketing department of manufacturing and service based companies.
14	175MA7E02	Rural Marketing	✓			The students are able to acquire skills related to opportunities in Indian rural marketing and rural market growth ,strategies which enable them to be employed in Marketing department of manufacturing and service based companies.

						be employed in Software companies.
9	175SY8E06	Enterprise Resource Planning	✓			The students are able to acquire skills related to ERP-SCM, which enable them to be employed in Software companies
10	175FI8E06	Financial Markets and Services	✓			The students are able to acquire skills related to mergers, takeovers, valuation of firm after mergers which enable them to be employed in Finance department of manufacturing and service companies.
11	175MA8E04	Customer Relationship Management	✓			The students are able to acquire skills related to Cost accounting, Strategies for cost reduction and cost control, which enable them to be employed in accounts department of manufacturing and service based companies.
12	175MA8E05	Strategic Marketing Management	✓			Students are able to apply the knowledge of International business strategies, which enable them to become international entrepreneurs.
13	175MA8E06	Services Marketing	✓			The students are able to acquire skills related to Indian service industry, growth, opportunities and strategies which enable them to be employed in Marketing department of manufacturing and service companies

14	175HR8E04	Performance Management	✓			The students are able to acquire skills related to concepts performance evaluation methods, merit rating procedure , limitations relation which enable them to be employed in HR department of Manufacturing and service based companies.

IX SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	175HR9E07	Global Human Resource Management	✓			The students are able to acquire skills related to global recruitment, Cultural diversity, Global training methods which enable them to be employed in HR department of manufacturing and service based companies.
2	175IM9T34	Intellectual Property Rights			✓	Students are able to apply the knowledge of patents ,copyrights, trade marks registration ,which enable them to become entrepreneurs .
3	175IM9T35	Corporate Governance		✓		The students are able to demonstrate managerial skills by learning the corporate ethics, marketing ethics, human resource ethics.
4	175HR9E08	Labor Welfare & Legislation	✓			The students are able to acquire skills related to different labour acts ,minimum wages act which enable them to be employed in HR department of manufacturing and service based companies.
5	175HR9E09	Industrial Relations	✓			The students are able to acquire skills related to Industrial relations acts ,labour laws which enable them to be employed in Marketing department of manufacturing and service based companies.
6	175FI9E07	Global Financial Management	✓			The students are able to acquire skills related to international trade mechanism, derivatives ,Exchange rate fluctuations which enable them to be employed in Finance department of manufacturing and service companies
7	175FI9E08	Risk Management	✓			Employability: The students are able to acquire skills related to international trade mechanism, derivatives ,Exchange rate fluctuations which enable them to be


						employed in Finance department of manufacturing and service companies
8	175FI9E09	Tax Management	✓			The students are able to acquire skills related to Risk management in securities markets, Swaps which enable them to be employed in Finance department of manufacturing and service companies
9	175MA9E07	Promotion and Distribution Management	✓			The students are able to acquire skills related to Tax structure and tax laws& GST, which enable them to be employed in Finance department of manufacturing and service companies
10	175MA9E08	Global Marketing Management	✓			The students are able to acquire skills related to sales promotional activates design ,advertisement strategies which enable them to be employed in Marketing department of manufacturing and service companies
11	175MA9E09	Retail Marketing	✓			The students are able to acquire skills related to global marketing strategies which enable them to be employed in Marketing department of manufacturing and service companies
12	175SY9E07	Cyber Laws & Security		✓		The students are able to demonstrate Technical skills by Modelling of cyber laws and security.
13	175SY9E08	Information Systems & Audit		✓		The students are able to demonstrate technical skills by learning the Normative Models of the Systems Development Process, Data Integrity

14	175SY9E09	SAP		✓		The students are able to demonstrate technical skills by learning the Normative Models of the Systems Development Process, Data Integrity
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X SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	175IMAP02	Major Project	✓			The students are able to acquire skills related to SAP Technology which enable them to be employed in finance or HR of SAP applied Companies
	Total	73	43	21	3	

Program coordinator


Head of the Department
Head of the Department
Department of Management Studies
Aditya Engineering College (A)
SURAMPALEM

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	203MC1T01	Business Communication	✓			Students are able to demonstrate competency in the domain of computers extension and business management enabling them to become an entrepreneur.
2	203MC1T02	Mathematical and Statistical Foundations		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using differential equations, system of linear equations in various engineering disciplines.
3	203MC1T03	Computer Organization & Operating Systems	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
4	203MC1T04	Data Structures		✓		Students are able to demonstrate the learn different sorting searching algorithms and data structures like stack, queue, linked list, Trees and Graphs.
5	203MC1T05	Object Oriented Programming with JAVA		✓		Students are able to demonstrate Problem solving skills to analyze the real time problem, and creative solutions using JAVA Programming language.
6	203MC1L01	Operating Systems and Linux Lab		✓		Students are able to demonstrate the basic knowledge in the operating system and Linux OS, which is very much essential for the career growth
7	203MC1L02	Data Structures Lab		✓		Students are able to demonstrate the data structures helps to gain problem-solving skills i.e. to solve a problem in a logical as well

						as creative way.
8	203MC1L03	JAVA Programming Lab		✓		Students are able to gain problem-solving skills i.e. to solve a problem in a logical as well as creative way using Java programming language.
9	203MC1P01	Socially Relevant Project using Design Thinking		✓		Students are able to analyse the real time problem analysis, and find the solutions in creative way.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	203MC2T06	Database Management Systems		✓		Students are able to demonstrate Problem solving skills to analyze the Data Base Management Systems to gain knowledge in a structured way to store and retrieve the data in effective way.
11	203MC2T07	Computer Networks		✓		Students are able to demonstrate Problem solving skills to analyze basics of CN, different models of Computer Networks, layers protocol suite and Detailed study of the OSI reference model and the TCP IP architectures.
12	203MC2T08	Software Engineering And Design Patterns				
13	203MC2T09	Data Warehousing And Mining		✓		Students are able to demonstrate Problem solving skills to analyze the Data warehousing is a method of organizing and compiling data into one database.
14	203MC2E02	Design And Analysis Of Algorithms				
15	203MC2L04	Dbms Lab		✓		Students are able to demonstrate Problem solving skills to gain problem-solving skills i.e. to solve a problem in a logical as well as creative way using DBMS.
16	203MC2L05	Computer Networks Lab		✓		Students are able to demonstrate Problem solving skills to gain problem-solving skills i.e. to solve a problem in a logical as well as creative way using computer networks.

17	203MC2L06	Software Engineering And Design Patterns Lab		✓		Students are able to demonstrate Problem solving skills to analyze the software engineering and design patterns to achieve the “best” design of software's by imparting the suitable design pattern.
18	203MC2T10	Employability Skills	✓			The students can able to learn solving problems in creatively and can communicate effectively.

III SEMESTER


S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	203MC3T11	Machine Learning With Python	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
20	203MC3T12	Internet Of Things	✓			Students will be able to acquire technical skills to develop real time IOT devices which can be used in the field of medicine, agriculture, Vigilance, safety and security services which enable them to be employed as IOT developer.
21	203MC3T13	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
22	203MC3T14	Cryptography And Network Security				
23	203MC3E08	Cloud Computing				
24	203MC3L07	Machine Learning With Python Lab	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
25	203MC3L08	Iot Lab	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
26	203MC3L09	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.

27	203MC3P02	Internship / Industry Oriented Mini Project/ Skill Development Course	✓			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.
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IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
28	203MC4E13	Deep Learning	✓			Students are able to acquire skills related to Deep learning, to analysis of different Deep learning algorithms and solving process in creative way.
29	203MC4E18	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.
30	203MC4P03	Project Work/ Dissertation	✓			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 No.Courses		30	13	13	0	


Program Coordinator


Head of the Department
Department of MCA
Sriya Engineering College