



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 (Program wise) during the academic year 2019-20.

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PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modeling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T02	Engineering Physics				
4	191ES1T01	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	191HS1L01	Communicative English Lab-I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
6	191BS1L01	Engineering Physics Lab				
7	191ES1L01	Programming for Problem Solving Using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
8	191ES1L02	Basic Engineering Workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.
9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India		✓		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.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T05	Partial Differential Equations and Vector Calculus		✓		Students are able to demonstrate problem solving skills by modeling physical phenomenon using partial differential equations, vector differentiation, vector integration and their applications in various engineering disciplines.
12	191BS2T06	Chemistry of Materials				
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate problem solving skills by modeling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modeling and analysis of electronic circuits in logging industry.
15	191ES2T04	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.
16	191HS2L02	Communicative English Lab- II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L03	Essential Electrical and Electronics Engineering Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modeling and analysis of electronic circuits in logging industry.
19	191ES2L04	Civil Engineering Workshop		✓		Students are able to acquire technical skills related to use the various basic principles of creativity in constructional field.
20	191PR2P01	Engineering Exploration Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171BS3T10	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.
22	171ES3T05	Basic Electrical and Electronics Engineering	✓			Students are able to acquire skills related to basic electrical and electronic principles enabling them to be employed for designing civil engineering constructional elements.
23	171ES3T09	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.
24	171CE3T01	Building Materials and Construction	✓			Students are able to acquire skills related to various aspects of construction materials enabling them to be employed in constructional sector.
25	171CE3T02	Surveying			✓	Students are able to demonstrate competency in the domain of measuring distances and calculate areas enabling them to become a surveyor.
26	171CE3T03	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.
27	171CE3L01	Surveying Lab		✓		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
28	171ES3L03	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
29	171HS3A09	Professional Ethics and Human Values				
30	171HS3A10	Employability Skills - I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171CE4T04	Building Planning and Computer Aided Drawing	✓			Students are able to acquire skills related to visualizing the different parts of a building using building by-laws and enabling them to be employed as planners. Students are able to demonstrate technical skills of characterizing buildings and develops creative thinking for future endeavours in constructional industry
32	171CE4T05	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.
33	171CE4T06	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.
34	171CE4T07	Hydraulics and 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.
35	171CE4T08	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.
36	171CE4T09	Structural Analysis - I	✓			Students are able to acquire skills related to various aspects of framed structures which can be applied in any real time projects.
37	171CE4L02	Fluid Mechanics and Hydraulic Machinery 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	171CE4L03	Concrete Technology Lab		✓		Students are able to acquire technical skills related to properties of concrete, design and test the concrete useful in constructional activities
39	171HS4A08	Intellectual property rights and patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
40	171HS4A11	Employability Skills - II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
41	171HS4A04	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.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
42	171HS5T05	Management Science			✓	Students are able to demonstrate competency in the domain of business management enabling them to become an entrepreneur.
43	171CE5T10	Design and 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
44	171CE5T11	Transportation Engineering	✓			Students are able to acquire skills related to various aspects of geometric properties of road and apply the concept in design of railway and study of airport charactersites enabling them to be employed in constructional industry
45	171CE5T12	Structural Analysis - II	✓			Students are able to acquire skills related to analysis of framed structures using advanced methodologies enabling them to be employed in developing structural related software used in constructional industry.
46	171CE5T13	Water Resource Engineering - I	✓			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
47	171CE5E01	(PE I)Construction Technology and Management				
48	171CE5E02	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
49	171CE5E03	Traffic Engineering	✓			Students are able to acquire skills related to traffic behaviour by using traffic flow parameters enabling them to be employed by RandB industry
50	171HS5T06	Employability Skills - III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
51	171CE5L04	Engineering Geology Lab	✓			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
52	171CE5L05	Transportation Engineering Lab	✓			Students are able to acquire skills related to various aspects of geometric properties of road and apply the concept in design of railway and study of airport charactersites enabling them to be employed in constructional industry
53	171CE5S01	MOOCs – I	✓			
54	171CE5P03	Surveying 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
55	171CE6T14	Design and 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.
56	171CE6T15	Geotechnical Engineering - I	✓			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.
57	171CE6T16	Water Resource Engineering - II	✓			Students are able to acquire skills related to various aspects of irrigation structures and their design in agricultural activities enabling them to be employed in the concerned industry.
58	171CE6T17	Prestressed Concrete	✓			Students are able to acquire skills related to bridge desining and metro constructions enabling them to be employed in constructional industry
59	171CE6E04	PE II Ground Water Development	✓			
60	171CE6E05	Pavement Analysis and Design	✓			Students are able to acquire skills related to various aspects of designing of flexible and rigid pavements enabling them to be employed in Rand B industry
61	171CE6E06	Repair and Rehabilitation of Structures				Students are able to acquire skills related to various aspects of studying detroitaton of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other detroitied structures enabling them to be employed in civil industry
62	171CE6E07	PE III Ground Improvement Techniques	✓			Students are able to acquire skills related to roadway design enabling them to be employed in R and B industry
63	171CE6E08	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
64	171CE6E09	Earthquake Resistant Design	✓			Students are able to acquire skills related to design, evaluate the performance and properties of structural members when subjected to seismic loads and designing earthquake resistant structures enabling them to be employed as structural engineers
65	171HS6T07	Employability Skills - IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
66	171CE6L06	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 acitivities as a civil engineer
67	171CE6L07	Irrigation Design and Drawing		✓		Students are able to demonstrate technical skill of characterizing various types of irrigation structures and their design use ful in the agricultural industry
68	171CE6S02	MOOCs - II				Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
69	R1641011	Environmental Engineering - II	✓			Students are able to acquire skills related to design and evaluate the treatment of wastewater generated in the society and its management enabling them to be employed for designing deals with as civil engineers
70	R1641012	Water Resource Engineering - II	✓			Students are able to acquire skills related to various aspects of irrigation structures and their design in agricultural activities enabling them to be employed in the concerned industry.
71	R1641013	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.
72	R1641014	Remote Sensing & 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
73	R164101A	Finite Element Methods(Elective I)		✓		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
74	R164101B	Ground Improvement Techniques	✓			Students are able to acquire skills related to roadway design enabling them to be employed in R and B industry
75	R164101C	Air Pollution & 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
76	R164101D	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
77	R164101E	Traffic Engineering	✓			Students are able to acquire skills related to traffic behaviour by using traffic flow parameters enabling them to be employed by RandB industry
78	R164101F	Advanced Structural Engineering(Elective II)				
79	R164101G	Advanced Foundation Engineering	✓			Students are able to acquire skills related to concepts, advanced principles and application of foundation analysis and design to the undergraduate students of civil engineering industry enabling them to be employed as Structural engineers
80	R164101H	Environmental Impact Assessment & 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 in as environmental managers/engineers
81	R164101I	Ground Water Development	✓			Students are able to acquire skills related to various aspects of application of knowledge in study of subsurface formations to identify aquifers and various artificial


						recharge methods in conservation of water in the society enabling them to be employed as engineers in various sectors of society.
82	R164101J	Pavement Analysis and Design	✓			Students are able to acquire skills related to various aspects of designing of flexible and rigid pavements enabling them to be employed in RandB industry
83	R1641019	IPR & Patents	✓			It helps the graduates safe guard the IP and innovations at their place of work.
84	R1641017	GIS & CAD Lab		✓		Students are able to demonstrate technical skill of experimenting various remote sensing softwares like Arc GIS, ERDAS etc. used in image analysis and map making at various land scapes in constructonal industry
85	R1641018	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

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
86	R1642011	Estimation Specification & 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. Skill development - Students are able to demonstrate problem solving skills to help in handling and managing contracts for their future endeavours as managers
87	R1642012	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
88	R1642013	Prestressed Concrete	✓			Students are able to acquire skills related to bridge designing and metro constructions enabling them to be employed in constructional industry
89	R164201A	Bridge Engineering (Elective III)	✓			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
90	R164201B	Soil Dynamics and Foundations	✓			Students are able to acquire skills related to behavior of a soil subjected to dynamic (actions having high acceleration) loading and impact on the foundations enabling them to be employed in constructional industry
91	R164201C	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
92	R164201D	Water Resources Systems Planning				
93	R164201E	Urban Transportation Planning Engineering		✓		Students are able to demonstrate technical skill of generation of trips and trip modeling in R and B industry
94	R1642015	Seminar on Internship Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in Civil Engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
95	R1642016	Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in Civil Engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		95	55	25	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	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T04	Engineering Chemistry				
4	191ES1T01	Programming for Problem Solving Using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab-I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
6	191BS1L02	Engineering Chemistry Lab				
7	191ES1L01	Programming for Problem Solving Using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
8	191ES1L02	Basic Engineering workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.
9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T05	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.
12	191BS2T07	Applied Physics		✓		
13	191ES2T05	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
14	191EE2T01	Electrical Circuits Analysis -I	✓			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.
15	191ES2T06	Basic Civil and Mechanical Engineering				
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth *
17	191BS2L05	Applied Physics Lab		✓		
18	191ES2L05	Basic Civil and Mechanical Engineering Lab		✓		Students are able to acquire skills related to civil and mechanical to useful work that enables them to get employed in core industries.
19	191ES2L06	Electrical Engineering Workshop		✓		Students are able to acquire skills related to electrical wiring to useful work that enables them to get employed in core industries.
20	191PR2P01	Engineering Exploration Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171EE3T02	Electrical Circuit Analysis - II	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of advanced electric circuits or networks enabling them to be employed for designing and manufacturing of advanced electrical circuits.
22	171EE3T03	Electrical Machines – I	✓			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
23	171EE3T04	Basic Electronics Devices and Circuits				
24	171EE3T05	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	171ES3T10	Thermal and Hydro Prime Movers		✓		Students are able to acquire skills related to prime mover as an engine that converts fuel to useful work that enables them to get employed in locomotives industries.
26	171HS3T04	Managerial Economics and Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
27	171ES3L04	Thermal and Hydro Prime Movers Lab		✓		Students are able to acquire skills related to prime mover as an engine that converts fuel to useful work that enables them to get employed in locomotives industries.
28	171EE3L01	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.
29	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.
30	171HS3A10	Employability Skills - I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the

						students to feel comfortable to face several competitive examinations with confidence and competence.
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IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171EE4T06	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.
32	171EE4T07	Electrical Machines - II	✓			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
33	171ES4T24	Digital Circuits and Logic Design	✓			Students are able to acquire skills related to advanced 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.
34	171EE4T08	Control Systems	✓			Imparts foundations of control systems, which are helpful in controlling industrial and domestic processes, making the student employable.
35	171EE4T09	Power Systems – I	✓			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.
36	171HS4T05	Management Science			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
37	171EE4L02	Electronic Devices and Circuits Lab	✓			Students are able to acquire knowledge related to characteristics of electronic devices and skills related to basic ckt. design enabling them to be employed for designing and manufacturing of electronic equipment. Skill Development: Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits.
38	171EE4L03	Electrical Machines - I 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
39	171HS4A11	Employability Skills - II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	171EE5T10	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	171EE5T11	Power Electronics	✓			Students are able to acquire skills related to the various drives 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.
42	171EE5T12	Pulse and Digital Circuits	✓			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 electronic equipment.
43	171EE5T13	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.
44	171EE5E01	Renewable 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.
45	171EE5E02	Modeling and Analysis of Electrical Machines				
46	171EE5E03	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.
47	171HS5T08	Intellectual Property Rights and Patents		✓		It helps the graduates safe guard the IP and innovations at their place of work.
48	171HS5T06	Employability Skills - III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

49	171EE5L04	Electrical Measurements 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.
50	171EE5L05	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
51	171EE5L06	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.
52	171EE5S01	MOOCs - I	✓			Skill Development: Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	171EE6T14	Power Electronic Controllers and Drives	✓			Students are able to acquire skills related to the various drives 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.
54	171EE6T15	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, including transient conditions like motor starting, non-linear loads and generator loss that enables them to get employed in electrical power industries.
55	171EE6T16	Micro Processor and Micro Controllers		✓		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.
56	171EE6T17	Data Structures		✓		Students are able to acquire programming skills related to Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to get expertise as a product developer.
57	171EE6E04	Computer Architecture		✓		Students are able to demonstrate technical skills in handling the hardware issues of computer during a failure.
58	171EE6E05	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.
59	171EE6E06	Distributed Generation and Microgrid	✓			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.
60	171EE6E07	Advanced Control Systems		✓		This subject ensures that the students develop strategic advanced control methods to improving productivity and enhancing the best practices of the company.

61	171EE6E08	PLC and 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.
62	171EE6E09	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.
63	171EE6E10	OOPs through JAVA		✓		Students are able to demonstrate programming skill in java programming that helps them to gain problem-solving skills i.e. to solve a problem in a logical as well as creative way in an manner.
64	171HS6T07	Employability Skills - IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
65	171EE6L07	Data Structures Lab		✓		Students are able to acquire programming skills related to Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to get expertise as a product developer.
66	171EE6L08	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.
67	171EE6S02	MOOCs - II	✓			Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
68	R1641021	Utilization of Electrical Energy	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to be employed in industries focusing on optimum utilization of electricity.
69	R1641022	Linear 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.
70	R1641023	Power System Operation & Control	✓			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, including transient conditions like motor starting, non-linear loads and generator loss that enables them to get employed in electrical power industries.
71	R1641024	Switchgear 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.
72	R164102A	Electrical Machine Modeling and Analysis	✓			Students are able to acquire skills related to fundamental knowledge on various analytical tools for electrical engineering simulation and enabling them to be employed in areas of computer aided design of electrical components.
73	R164102B	Advanced 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.
74	R164102C	Programmable Logic Controllers and 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.
75	R164102D	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.

76	R164102E	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.
77	R164102F	Electric Power Quality				
78	R164102G	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
79	R1641027	Electrical Simulation Laboratory	✓			Students are able to acquire skills related to fundamental knowledge on various analytical tools for electrical engineering simulation and enabling them to be employed in areas of computer aided design of electrical components.
80	R1641028	Power Systems and Simulation Laboratory	✓			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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
81	R1642021	Digital Control Systems		✓		This subject ensures that the students develop strategic methods to improving productivity and enhancing the best practices of the company.
82	R1642022	HVDC Transmission	✓			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.
83	R1642023	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.
84	R164202A	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.
85	R164202B	Flexible Alternating Current 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.
86	R164202C	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.
87	R1642025	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.
88	R1642026	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	88	51	27	2	.
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Program Coordinator



Head of the Department

Head of The Department
Dept: Of Electrical & Electronics Engineering
Aditva Engineering College (A9)

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T02	Engineering Physics				
4	191ES1T01	Programming for Problem Solving using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab-I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
6	191BS1L01	Engineering Physics Lab				
7	191ES1L01	Programming for Problem Solving using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
8	191ES1L02	Basic Engineering Workshop		✓		Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.
9	191MC1A01	Environment Science				
10	191MC1A02	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.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T05	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.
12	191BS2T06	Chemistry of Materials				
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
15	191ES2T04	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.
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L03	Essential Electrical and Electronics Engineering Lab		✓		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 machines their deal with their complexities.
19	191ES2L07	Mechanical Engineering Workshop		✓		Students are able to acquire skills related to basic fabrication processes and assembling and disassembling of machine parts.
20	191PR2P01	Engineering Exploration Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171ES3T13	Metallurgy & Materials Science	✓			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.
22	171ES3T11	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.
23	171ES3T12	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	171HS3T04	Managerial Economics and Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
25	171ES3T14	Fluid Mechanics & Hydraulic Machinery	✓			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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
26	171ME3T01	Computer Aided Engineering Drawing Practice		✓		Computer Aided Drawing practice is designed to improve the skills of the students as they will be able to draft packages and commands for computer aided drawing and modelling. Students will be able to gain the skills to draw complex drawing by using these tools.
27	171ES3L05	Basic Electrical and Electronics Engg. Lab		✓		Electrical and electronics lab helps the students to improvise their technical skills as they get to know how to determine the efficiency of dc shunt, Single phase transformers. This subject also helps to obtain the characteristics and performance of Dc shunt motors. This subject helps student to solve the Dc motor and transformers related problems at the mine site.
28	171ES3L06	Mechanics of Solids and Metallurgy Lab		✓		Students are able to acquire skills related to testing of material behavior under various direct loads, Microstructure of metals Non metals.
29	171HS3A09	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.
30	171HS3A10	Employability skills-I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171ME4T02	Kinematics of Machinery	✓			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.
32	171ME4T03	Thermal Engineering -I	✓			Students are able to acquire skills related to working of Incentives, Compressors and enabling them to be employed in Thermal Power Plants.
33	171ME4T04	Production Technology	✓			Students are able to acquire skills related to various manufacturing processes, different joining techniques and bulk metal deforming processes.
34	171ME4T05	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.
35	171ME4T06	Industrial Engineering and Management			✓	Students are able to demonstrate Competency related to managerial skill set and enable them to be an entrepreneur.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
36	171ME4T07	Machine Drawing		✓		Students are able to acquire skills related to machine components, part drawings and assembly drawings enabling them to be placed in mechanical design and drafting industries
37	171HS4T08	Intellectual Property rights and patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
38	171ME4L01	Production Technology Lab		✓		Students are able to acquire skills related to various manufacturing process, different joining techniques and bulk metal deforming processes.
39	171ES4L07	Fluid mechanics and Hydraulic Machinery 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.
40	171HS4A11	Employability Skills -II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171ME5T08	Dynamics of Machinery	✓			Students are able to acquire skills in analyzing the machines in dynamic conditions and enabling them to be employed in automotive and aerospace industries.
42	171ME5T09	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
43	171ME5T10	Thermal Engineering -II	✓			Students are able to acquire skills on basic knowledge of rankine cycle, boilers, chimneys, gas turbines and enabling them to be employed in thermal power plants.
44	171ME5T11	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.
45	171ME5T12	Operations Research	✓			Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
46	171ME5E01	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.
47	171ME5E02	Mechanical Vibrations	✓			Students are able to acquire skills related to analysis of periodic responses of a vibrating system without and with damping systems.
48	171ME5E03	Additive Manufacturing	✓			Students are able to acquire skills on basic knowledge of various additive manufacturing processes and enabling them to be employed in manufacturing industries
49	171HS5T06	Employability Skills -III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
50	171ME5L02	Theory of Machines Lab		✓		Students are able to acquire skills related to analysis of mechanisms for a specified type of motion in machine.
51	171ME5L03	Thermal Engineering Lab		✓		Students are able to acquire analytical skills on working and performance of Incentives and Reciprocating compressors.
52	171ME5S01	MOOCS-I		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	171ME6T13	Heat Transfer	✓			Students are able to acquire analytical skills on the concept of heat transfer through conduction, convection, radiation and performance of heat exchangers and enabling them to be employed in piping design industries.
54	171ME6T14	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.
55	171ME6T15	Metrology and Instrumentation	✓			Students are able to acquire skills related to the measurement of linear and angular measuring instruments, working of measuring instruments and control systems.
56	171ME6E04	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

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
57	171ME6E05	Design for Manufacturing	✓			Students are able to demonstrate technical skills in design of manufacturing through consideration of cost, quality and reliability.
58	171ME6E06	Non-Destructive Evaluation	✓			Students are able to acquire skills in characterizing the material behavior through different Non-destructive evaluation methods and enabling them to be employed in automotive and aerospace industries.
59	171ME6E07	Unconventional Machining Processes	✓			Students are able to acquire skills on modern machining processes and working principles enabling them to be employed in machining industries
60	171ME6E08	Industrial Hydraulics and Pneumatics	✓			Students are able to demonstrate problem solving skills in analyzing the concepts of hydraulic systems, pneumatic systems and its components.
61	171ME6E09	Quality & Reliability Engineering	✓			Students are able to acquire skills in improving the quality and reliability of systems and enabling them to be employed in quality control and quality assurance fields
62	171HS6T07	Employability Skills-IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
63	171ME6L04	Machine Tools Lab		✓		Students are able to acquire skills to operate various machine tools. enabling them to be employed in Manufacturing sector.
64	171ME6L05	Heat Transfer Lab		✓		Students are able to demonstrate problem solving skills in calculating the heat transfer coefficient through conduction, convection and radiation.
65	171ME6L06	Metrology & Instrumentation 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.
66	171ME6S02	MOOCS-II		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
67	R1641031	Mechatronics	✓			Students are able to demonstrate technical skills to measure the load, displacement and temperature using analogue and digital sensors.
68	R1641032	CAD/CAM	✓			Students are able to demonstrate problem solving skills for improving productivity and enhancing the best practices of the company.
69	R1641033	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
70	R1641034	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.
71	R164103A	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.
72	R164103B	Condition Monitoring	✓			Students are able to acquire skills in detecting the faults in the systems by monitoring several parameters to prevent major failures.

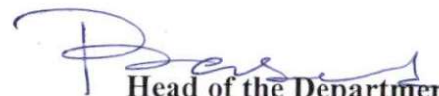
S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
73	R164103C	Additive Manufacturing	✓			Students are able to acquire skills related to the knowledge of Additive manufacturing (AM) principles and the knowledge of liquid, solid and powder based rapid prototyping systems and enabling them to be employed in Additive manufacturing industries.
74	R164103D	Advanced Materials	✓			Students are able to acquire skills in synthesis and characterization of advanced materials.
75	R164103E	Design for Manufacture	✓			Students are able to demonstrate technical skills in design of manufacturing through consideration of cost, quality and reliability.
76	R164103F	Gas Dynamics and Jet Propulsion	✓			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.
77	R1641037	CAD/CAM 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
78	R1641038	Mechatronics Lab		✓		Students are able to demonstrate technical skills to measure the load, displacement and temperature using analogue and digital sensors.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
79	R1642031	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.
80	R1642032	Unconventional Machining Processes	✓			Students are able to acquire skills on modern machining processes and working principles enabling them to be employed in machining industries
81	R1642033	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.
82	R164203A	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 companies.
83	R164203B	Non-Destructive Evaluation	✓			Students are able to acquire skills in characterizing the material behavior through different Non-destructive evaluation methods and enabling them to be employed in automotive and aerospace industries.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
84	R164203C	Quality & Reliability Engineering			✓	Students are able to acquire skills in improving the quality and reliability of systems and enabling them to be employed in quality control and quality assurance fields
85	R1642055	Seminar	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in mining engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
86	R1642036	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		86	49	28	4	


Program Coordinator


Head of the Department

Head of the Department
Department of Mechanical Engineering
Aditya Engineering College (A)
SURAMPALAM-533 407

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T03	Applied Physics				
4	191ES1T01	Programming for Problem Solving Using C				
5	191HS1L01	Communicative English Lab-I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
6	191BS1L03	Applied Physics Lab				
7	191ES1L01	Programming for Problem Solving Using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
8	191ES1L02	Basic Engineering Workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.
9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T08	Transform Techniques		✓		Students are able to demonstrate problem solving skills by learning Fourier Transforms , Laplace Transforms, Z-Transforms and their applications
12	191BS2T09	Engineering Chemistry				
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
14	191ES2T07	Basic Electrical Engineering	✓			Students are able to acquire skills related to basic electrical principles enabling them to be employed to effectively manage hardware industries.
15	191ES2T08	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.
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L08	Basic Electrical Engineering Lab		✓		Students are able to acquire skills related to electrical to useful work that enables them to get employed in core industries.
19	191ES2L09	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
20	191PR2P01	Engineering Exploration Project				

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171EC3T01	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	171EC3T02	Switching Theory 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.
23	171EC3T03	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.
24	171ES3T15	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.
25	171EC3T04	Random Variables and Stochastic Processes				
26	171HS3T04	Managerial Economics and Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
27	171EC3L01	Electronic Devices and Circuits Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits
28	171ES3L08	Networks and Electrical Technology 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
29	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values,
30	171HS3A10	Employability Skills – I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171EC4T05	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	171EC4T06	Electromagnetic Waves and Transmission Lines	✓			Students are able to acquire skills related to propagation of electromagnetic waves enabling them to be employed for designing and manufacturing of communication systems
33	171EC4T07	Analog Communications	✓			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
34	171EC4T08	Pulse and Digital Circuits	✓			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 electronic equipment.
35	171HS4T05	Management Science	✓			Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
36	171ES4T28	Linear Control Systems		✓		Students are able to acquire knowledge on open loop and closed loop control systems, mathematical modelling of systems and various responses using Bode plot, Nyquist plot and Polar plots, and state variable analysis suitable for industrial automation applications
37	171HS4T08	IPR and Patents				
38	171EC4L02	Electronic Circuit Analysis Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of electronic circuits.
39	171EC4L03	Analog Communications Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of communication circuits.
40	171HS4A11	Employability Skills – II	✓		44	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.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171EC5T09	Linear IC Applications	✓			Students are able to acquire skills related to basic ckt. design in the field of analog ICs enabling them to be employed for designing and manufacturing of electronic equipment.
42	171EC5T10	Digital IC Applications	✓			Students are able to acquire skills related to basic ckt. design in the field of digital ICs enabling them to be employed for designing and manufacturing of digital electronic equipment.
43	171EC5T11	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.
44	171EC5T12	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
45	171EC5E01	Computer Architecture and Organization	✓			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
46	171EC5E02	OOPS through JAVA		✓		Students are able to demonstrate programming skill in java programming that helps them to gain problem-solving skills i.e. to solve a problem in a logical as well as creative way in an manner.
47	171EC5E03	Electronic Switching Systems	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electronic switching circuits enabling them to be employed for designing and manufacturing of electronic equipment related to data and voice communication systems
48	171HS5T06	Employability Skills - III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
49	171EC5L04	Linear IC Applications Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with linear ices in the fields of instrumentation, communications etc.

50	171EC5L05	Digital IC Applications Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with digital ices.
51	171EC5L06	Pulse and Digital Circuits Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of electronic circuits.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
52	171EC6T13	Micro Processors and MicroControllers	✓			Students are able to acquire skills related to design of electronic circuits with micro processors and controllers enabling them to be employed for designing and manufacturing of electronic equipment.
53	171EC6T14	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
54	171EC6T15	Digital Signal Processing	✓			Students are able to acquire skills related to processing of digital signals enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
55	171EC6E04	CPLD and FPGA Architectures	✓			Students are able to acquire skills related to design, program and evaluate the performance of CPLDs, and FPGAs and enable them to be employed for designing and manufacturing of electrical equipment with CPLDs and FPGAs.
56	171EC6E05	Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and Linux programming which enables them to be employed as Hardware core side job opportunities
57	171EC6E06	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.
58	171EC6E07	Digital Design Through Verilog	✓			Students are able to acquire skills related to design, program and evaluate the performance of CPLDs, and FPGAs and other programmable devices using Verilog enable them to be employed for designing and manufacturing of electrical equipment with programmable devices.
59	171EC6E08	Biomedical Engineering	✓			Students are able to acquire skills related to design, program and evaluate the performance of biomedical instruments like ECG, EMG etc enable them to be employed for designing and manufacturing of electrical equipment in the field of medicine.
60	171EC6E09	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.
61	171HS6T07	Employability Skills - IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
62	171EC6L07	Micro Processor and Micro Controllers Lab		✓		Students are able to demonstrate programming skill related to microprocessors and controllers, interfacing of peripherals etc
63	171EC6L08	VLSI lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in the field of VLSI.
64	171EC6L09	Digital Communications Lab		✓		Develops practical skills required for development of basic communication circuits.

VII SEMESTER

65	R1641041	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.
66	R1641042	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.
67	R1641043	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.
68	R1641044	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
69	R164104A	TV Engineering	✓			Students are able to acquire knowledge related to television signals, bandwidth requirement and TV circuits enabling them to be employed for designing, manufacturing and implementation of TV systems
70	R164104B	Electronic Switching Systems	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electronic switching circuits enabling them to be employed for designing and manufacturing of electronic equipment related to data and voice communication systems.
71	R164104C	System Design through Verilog	✓			Students are able to acquire skills related to Verilog programming skills, enabling them to be employed for designing, manufacturing and implementation of digital systems.
72	R164104D	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
73	R164104E	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
74	R164104F	Network Security & Cryptography	✓			Students are able to acquire skills related to design, develop and evaluate the performance of secure and cryptographic codes enabling

						them to be employed for designing and interfacing devices with security
75	R1641047	Micro Wave Engineering & Optical communications Lab		✓		Students are able to acquire skills related to characteristics and applications of microwave devices enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
76	R1641048	Digital Signal Processing Lab				Students are able to acquire skills related to design, synthesize and evaluate the performance of digital signal processing systems enabling them to be employed for designing and manufacturing of electronic equipment.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
77	R1642041	Cellular Mobile Communications	✓			Students are able to acquire skills related to cellular concepts enabling them to be employed for designing and manufacturing of mobile communication equipment.
78	R1642042	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.
79	R1642043	Satellite Communications	✓			Students are able to acquire skills related to design, analyze and evaluate the performance of satellite communication systems which serve broadcasting, telephony etc.
80	R164204A	Wireless sensors & Networks	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of wireless adhoc networks enabling them to be employed for designing and implementation of WSNs.
81	R164204B	Digital IC Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital ICs enabling them to be employed for designing and manufacturing of digital ICs.
82	R164204C	Operating Systems	✓			Students are able to acquire skills related to concepts of operating systems enabling them to be employed in the field of software development.
83		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.
84		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	84	49	23	1		


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	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T03	Applied Physics				
4	191ES1T01	Programming For Problem Solving Using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab -I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
6	191BS1L03	Applied Physics Lab				
7	191ES1L01	Programming For Problem Solving Using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry..
8	191ES1L02	Basic Engineering Workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.

9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T09	Engineering Chemistry				
12	191BS2T10	Numerical Methods and Complex Variables		✓		Students are able to demonstrate problem solving skills by studying analytical properties of functions of complex variables whose applications can be observed in various engineering disciplines
13	191ES2T02	Engineering Graphics and Design				
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
15	191ES2T09	Data Structures through C++	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L10	Data Structures Through C++ Lab	✓			Students are able to acquire programming skills related to OOP's, and Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to employed as a product developer.
19	191ES2L11	IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.
20	191PR2P01	Engineering Exploration Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

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

29	171HS3A10	Employability Skills – I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
30	171HS3A09	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171CS4T05	Software Engineering				
32	171CS4T06	Formal Languages & Automata Theory		✓		Students are able to demonstrate technical skills related to regular, context-free and recursively enumerable languages
33	171CS4T07	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
34	171CS4T08	Database Management Systems	✓			Students are able to acquire skills related to SQL commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer
35	171CS4T09	Principles of Programming Languages		✓		Students are able to demonstrate programming and technical skills by comparing different programming paradigms.
36	171CS4T10	Computer Organization	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
37	171CS4L03	Java Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
38	171CS4L04	Database Management Systems Lab	✓			Students are able to acquire skills related to SQL commands, constraints, views, pl/SQL programming enabling them to be employed for backend developer
39	171HS4A11	Employability Skills – II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
40	171HS4A08	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171CS5T11	Compiler Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of Different Language Compilers and enabling them to be employed for designing of Compilers.
42	171CS5T12	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
43	171CS5T13	Design & Analysis of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design
44	171CS5T14	Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities
45	171CS5E01	Unix and Shell Programming		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
46	171CS5E02	Advanced Computer Architecture	✓			Students are able to acquire skills related to design, and synthesize advanced computers enabling them to be employed for designing and manufacturing of computer architectures.
47	171CS5E03	Computer Graphics				
48	171CS5E04	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
49	171HS5T06	Employability Skills – III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

50	171CS5L05	Operating System and Linux Lab	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input & output and memory operations with Unix which enables them to be employed for Hardware core side job opportunities
51	171CS5L06	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
52	171CS5L07	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
53	171CS5L08	Compiler Design Lab	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of Different Language Compilers and enabling them to be employed for designing of Compilers.
54	171CS5S01	MOOCs – I		✓		Students are able to acquire technical skills by choosing an online course of their choice which is not related to academics

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
55	171CS6T15	Computer Networks	✓			Students are able to acquire skills related to computer networks, functionalities of reference model layers and transmitting data between nodes enabling them to be employed for networking environment
56	171CS6T16	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
57	171CS6T17	Data Ware Housing and Data Mining	✓			Students are able to acquire technical skills to synthesize and pre-process the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
58	171CS6E05	Software Quality Assurance		✓		Students are able to demonstrate technical skills by Understanding the fundamental concepts of software automation
59	171CS6E06	Bio Informatics		✓		Students are able to gain knowledge on forensic analysis, gene therapy and molecular medicine
60	171CS6E07	Human Computer Interaction		✓		Students are able to demonstrate GUI components such as Menus, Forms, Dialog boxes and gain knowledge on various design paradigms, online documentation concepts, information retrieval & its presentation.
61	171CS6E08	Social Networks and Semantic Web		✓		Students are able to acquire technical skills with the fundamentals of Semantic Web technologies.
62	171CS6E09	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
63	171CS6E10	Parallel Computing		✓		Students are able to understand techniques of parallel algorithm development and programming on different parallel platform.
64	171CS6E11	Storage Area Networks		✓		Students are able to acquire technical skill by understand the Storage Area Networks characteristics and components.
65	171CS6E12	E - Commerce		✓		Students are able to Understand the basic concepts and technologies used in the field of management.

66	171HS6T07	Employability Skills – IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
67	171CS6L09	Computer Networks Lab	✓			Students are able to acquire skills related to computer networks, functionalities of reference model layers and transmitting data between nodes enabling them to be employed for networking environment
68	171CS6L10	Data Ware Housing and Data Mining Lab	✓			Students are able to acquire technical skills to synthesize and pre-process the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
69	171CS6L11	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
70	171CS6S02	MOOCs – II		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
71	R1641051	Cryptography and Network Security		✓		Students are able to demonstrate technical skill of encryption, decryption and different types of attacks in Cryptography and Network Security
72	R1641052	Software Architecture & Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
73	R1641053	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
74	R1641054	Managerial Economics and Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
75	R1641057	Software Architectures & Design Patterns Lab		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
76	R1641058	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
77	R164105A	Big Data Analysis	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
78	R164105B	Information Retrieval Systems		✓		Students are able to acquire technical skills related to information retrieval systems by using various retrieving techniques used in real time environment.
79	R164105C	Mobile Computing	✓			Students are able to acquire technical skills which helps them in developing mobile applications using J2EE and android which enable them to be employed as Mobile Application Developer.
80	R164105D	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector


81	R164105E	Software Project Management			✓	Students are able to apply the knowledge of Software Project Management skills and enabling them to become an entrepreneur in any domain of their choice.
82	R164105F	Scripting Languages		✓		Students are able to acquire programming skills related to building scripts that control a sequence of operations.

VIII SEMESTER

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

89	R164205B	Artificial Neural Network		✓		Students are able to demonstrate technical skill of Perceptron, NN's and Deep Neural Networks.
90	R164205C	Operation Research	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities
TOTAL		90	42	34	5	


Program Coordinator


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

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modeling physical phenomenon using Partial Differential Equations and Vector Calculus in various engineering disciplines.
3	191BS1T03	Applied Physics				
4	191ES1T01	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	191HS1L01	Communicative English Lab -I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

6	191BS1L03	Applied Physics Lab				
7	191ES1L01	Programming For Problem Solving Using C Lab		✓		Students are able to demonstrate technical skill of solving real time complex problems using C.
8	191ES1L02	Basic Engineering Workshop		✓		Students are able to acquire skills related to building various joints in different trades for several applications.
9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T10	Numerical Methods and Complex Variables		✓		Students are able to demonstrate problem solving skills by studying analytical properties of functions of complex variables whose applications can be observed in various engineering disciplines
12	191BS2T09	Engineering Chemistry		✓		
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate technical skills related to working with logic circuits, developing K-Maps and working with multiplexers
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to demonstrate technical skill of characterizing electronic devices, modeling and analysis of electronic circuits in logging industry.
15	191ES2T09	Data Structures through C++				
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth.
17	191ES2L10	Data Structures Through C++ Lab	✓			Students are able to acquire programming skills related to OOP's, and Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to employed as a product developer.
18	191BS2L04	Engineering Chemistry Lab				

19	191ES2L11	IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.
20	191PR2P01	Engineering Exploration Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171BS3T08	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by implementing mathematical logic, number theory and graph theory.
22	171ES3T23	Digital Logic Design		✓		Students are able to demonstrate technical skills related to working with logic circuits, developing K-Maps and working with multiplexers
23	171CS3T02	Statistics with R Programming	✓			Students are able to acquire skills related to R commands, Graphical representation of data sets, and visualization Techniques and also enabling them to be employed for Data analyst.
24	171CS3T03	Object Oriented Programming through C++	✓			Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
25	171HS3T04	Managerial Economics 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.
26	171CS3T04	Advanced Data Structures	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
27	171HS3A10	Employability Skills – I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive

						examinations with confidence and competence.
28	171CS3L01	Object Oriented Programming Lab	✓			Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
29	171CS3L02	Advanced Data Structures Lab	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
30	171HS3A09	Professional Ethics & Human Values				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171CS4T05	Software Engineering				
32	171IT4T01	Language Processors				
33	171CS4T07	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
34	171CS4T08	Database Management Systems				
35	171HS4T05	Management Science			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
36	171CS4T10	Computer Organization	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
37	171CS4L03	Java Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
38	171CS4L04	Database Management Systems Lab	✓			Students are able to acquire skills related to sql commands, constraints, views, models, transactions, storage and indexing

						enabling them to be employed for backend developer
39	171HS4A11	Employability Skills – II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
40	171HS4A08	IPR and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171IT5T02	Computer Networks	✓			Students are able to acquire skills related to computer networks, functionalities of reference model layers and transmitting data between nodes enabling them to be employed for networking environment.
42	171CS5T12	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
43	171IT5T03	Unix and Shell Programming		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations.
44	171CS5T14	Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities.
45	171IT5E01	Artificial Intelligence		✓		Students are able to demonstrate technical skill of searching techniques used in AI, Expert systems, Knowledge representation and fuzzy logic.
46	171CS5E02	Advanced Computer	✓			Students are able to acquire skills related to design, and synthesize advanced computers enabling them to be employed for designing and

		Architecture				manufacturing of computer architectures.
47	171CS5E03	Computer Graphics	✓			Students are able to acquire related 2D,3D graphical representations and basic graphic programming using OpenGL enabling them to be employed as graphic designer.
48	171CS5E04	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
49	171HS5T06	Employability Skills – III				This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
50	171IT5L01	Operating Systems and Computer Networks Lab	✓			Students are able to understand and acquire skills related to features and functionalities of operating system and understand the utilization of Input & output and memory operations which enables them to be employed for Hardware core side job opportunities.
51	171CS5L06	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
52	171CS5L07	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
53	171IT5L02	Unix and Shell Programming Lab		✓		Students are able to demonstrate programming solving skills by identifying and using UNIX utilities to create and manage simple file processing operations
54	171IT5S01	MOOCs – I				

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
55	171IT6T04	Object Oriented Analysis and Design Using UML		✓		Students are able to acquire technical skills to develop different UML diagrams like usecase, class, sequence, collaboration, component and deployment diagrams.
56	171CS6T16	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
57	171CS6T17	Data Warehousing and Data Mining	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
58	171CS6E05	Software Quality Assurance		✓		Students are able to demonstrate technical skills by Understanding the fundamental concepts of software automation
59	171IT6E02	Neural Networks		✓		Students are able to demonstrate technical skill of Perceptron, NN's and Deep Neural Network's.
60	171CS6E08	Social Networks and Semantic Web		✓		Students are able to acquire technical skills with the fundamentals of Semantic Web technologies.
61	171IT6E03	Design and Analysis of Algorithms	✓			Students are able to acquire technical skills to work with different algorithmic strategies like greedy, dynamic programming, back tracking which enable them to be employed as a product developer.

62	171IT6E04	Advanced Computer Networks		✓		Students are able to demonstrate technical skills of different routing techniques, MANET's and protocols applied at different levels
63	171CS6E10	Parallel Computing		✓		Students are able to understand techniques of parallel algorithm development and programming on different parallel platform.
64	171IT6E05	Multimedia Programming		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
65	171CS6E12	E – Commerce		✓		Students are able to Understand the basic concepts and technologies used in the field of management.
66	171HS6T07	Employability Skills – IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
67	171IT6L03	Unified Modeling Language Lab		✓		Students are able to acquire technical skills to develop different UML diagrams like usecase, class, sequence, collaboration, component and deployment diagrams
68	171CS6L10	Data Warehousing and Data Mining Lab	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.
69	171CS6L11	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.

70	171IT6S02	MOOCs – II				
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VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
71	R1641051	Cryptography and Network Security		✓		Students are able to demonstrate technical skill of encryption, decryption and different types of attacks in Cryptography and Network Security.
72	R164105C	Mobile Computing		✓		Students are able to demonstrate technical skill of mobile computing nomenclature to describe and analyze existing mobile computing frameworks and architectures
73	R1641121	Data Ware Housing and Business Intelligence		✓		Students are able to demonstrate technical skill of involving planning, designing, building, populating, and maintaining a successful data warehouse.
74	R1641054	Managerial Economics and Financial Analysis			✓	Students are able to demonstrate Competency in gaining the managerial skill set and enabling them to be an entrepreneur.
75	R164105A	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.
76	R164105B	Information Retrieval Systems		✓		Students are able to acquire technical skills related to information retrieval systems by using various retrieving techniques used in real time environment.
77	R164112A	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.

78	R164112B	Multimedia Programming		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
79	R164105D	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector.
80	R164105E	Software Project Management			✓	Students are able to apply the knowledge of Software Project Management skills and enabling them to become an entrepreneur in any domain of their choice.
81	R164112C	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
82	R164112D	Decision Support System		✓		Students are able to acquire skills related to classification and regression techniques.
83	R1641127	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.
84	R1641128	Cryptography and Network Security Lab		✓		Students are able to demonstrate technical skill of encryption, decryption and different types of attacks in Cryptography and Network Security.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
85	R1642051	Distributed Systems		✓		Students are able to acquire skills to understand the protocols and architectures needed to establish a distributed network.
86	R1642052	Management Science			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
87	R1642121	Management Information System		✓		Students are able to demonstrate technical skill to demonstrate System Analysis, Design and decision making in a business environment.
88	R164205A	Concurrent and Parallel Programming		✓		Students are able to acquire skills related to parallel processors, parallel computing, hardware and configuration required to perform parallel processing.
89	R164212A	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.
90	R164205B	Artificial Neural Networks		✓		Students are able to demonstrate technical skill of Perceptron, NN's and Deep Neural Network's.
91	R164212B	Software Quality Assurance		✓		Students are able to demonstrate technical skills by Understanding the fundamental concepts of software automation.
92	R1642055	Seminar				

93	R1642056	Project	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		93	36	36	6	

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	191HS1T01	Communicative English		✓		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	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T02	Engineering Physics				
4	191ES1T01	Programming for Problem Solving Using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab-I		✓		Students are able to acquire skills related to principles of friction, kinetics, kinematics, resolving forces, trusses etc which forms the crux of design sciences.
6	191BS1L01	Engineering Physics Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
7	191ES1L01	Programming for Problem Solving Using C Lab		✓		Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
8	191ES1L02	Basic Engineering Workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.
9	191MC1A01	Environmental Science	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.
10	191MC1A02	Constitution of India				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T05	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.
12	191BS2T06	Chemistry of Materials		✓		
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
15	191ES2T04	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.
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L03	Essential Electrical and Electronics Engineering Lab		✓		Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
19	191ES2L13	Petroleum Technology Workshop	✓			Students are able to demonstrate technical skill of characterizing technologies, modelling and analysis of petroleum industry.
20	191PR2P01	Engineering Exploration Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171BS3T09	Complex Variables		✓		Students are able to demonstrate problem solving skills by analytical properties of functions of complex variables , complex integration and conformal mapping
22	171ES3T16	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
23	171ES3T17	General Geology	✓			Students are able to acquire skills related to various aspects of various structures enabling them to be employed as petroleum geologists.
24	171ES3T18	Surveying And Offshore Structures	✓			Students are able to acquire skills related to various aspects of various offshore structures enabling them to be employed as offshore engineers.
25	171PT3T01	Chemical Process Calculations		✓		Students are able to demonstrate Problem solving skills to analyze stylometric relations of chemicals and performance characteristics of it.
26	171ES3T05	Basic Electrical And Electronics Engineering		✓		Students are able to acquire skills related to basic electrical and electronic principles enabling them to be employed for designing logging tools
27	171ES3L09	Basic Engineering Lab	✓			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 equipment in logging industry.
28	171ES3L10	Geology And Surveying Lab	✓			Students are able to acquire skills related to various aspects of various structures enabling them to be employed as petroleum geologists.
29	171HS3A10	Employability Skills - I	✓			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.
30	171HS3A09	Professional Ethics And Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	171BS4T10	Probability And Statistics		✓		Students are able to demonstrate problem solving skills by learning about random variables , probability distributions, sampling theory , test of hypothesis , correlation and regression.
31	171PT4T02	Momentum Transfer		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using fluid flow behaviour and designing of fluid flow in various engineering disciplines.
32	171PT4T03	Petroleum 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.
33	171PT4T04	Thermodynamics For Petroleum Engineers		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using phase equilibrium in the fluid systems in various engineering disciplines.
34	171PT4T05	Process Heat Transfer		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using heat flow systems, study of temperature behaviour in various engineering disciplines.
35	171HS4T05	Management Science	✓			
36	171PT4L01	Momentum Transfer Lab		✓		Students are able to acquire skills related to various aspects of different fluid flow behaviour and designing of fluid flow enabling them to be employed as production engineers.
37	171PT4L02	Process Heat Transfer 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.
38	171HS4A11	Employability Skills - II	✓			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.
39	171HS4A08	IPR And Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	171PT5T06	Process Dynamics and Control		✓		Students are able to demonstrate technical skill of characterizing different controllers, modelling and analysis of control valves.
41	171PT5T07	Petroleum Exploration		✓		Students are able to demonstrate technical skill of characterizing different exploration methods, modeling and analysis of structures.
42	171PT5T08	Process Instrumentation		✓		Students are able to demonstrate technical skill of characterizing different types of instruments, modelling and analysis of instruments.
43	171PT5T09	Well Logging and Formation Evaluation		✓		Students are able to demonstrate technical skill of characterizing different logging tools, modelling and analysis of formations.
44	171PT5T10	Drilling Technology		✓		Students are able to demonstrate technical skill of characterizing different drilling methods, modelling and analysis of well bore.
45	171PT5E01	Well Engineering and Design		✓		Students are able to demonstrate technical skill of characterizing different well designs, modelling and analysis of well bore.
46	171PT5E02	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.
47	171PT5E03	Pipeline Engineering		✓		Students are able to demonstrate technical skill of characterizing different material behaviours, modelling and analysis of pipeline operations.
48	171PT5L03	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.
49	171PT5L04	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.
50	171HS5T06	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.
51	171PT5S01	MOOCs – I	✓			Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
52	171PT6T11	Well Completions, Testing and Services		✓		Students are able to demonstrate technical skill of characterizing different wells , modelling and analysis of completions.
53	171PT6T12	Petroleum Production Engineering		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of production.
54	171PT6T13	Petroleum Reservoir Engineering - I		✓		Students are able to demonstrate technical skill of characterizing different rock properties , modelling and analysis of reservoir.
55	171PT6T14	Surface Production Operations		✓		Students are able to demonstrate technical skill of characterizing different separators , modelling and analysis of production.
56	171PT6E04	Petroleum Refining and Petrochemical Engineering		✓		Students are able to demonstrate technical skill of characterizing different heaters, treaters, distillation columns , modelling and analysis of refinery.
57	171PT6E05	Storage and Transportation of Crude Oil and 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
58	171PT6E06	Reservoir Stimulation		✓		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 .
59	171PT6E07	Natural Gas Hydrates		✓		Students are able to demonstrate technical skill of characterizing different feeds from well , modelling and analysis of hydrates.
60	171PT6E08	Natural Gas Engineering		✓		Students are able to demonstrate technical skill of characterizing different gas wells , modelling and analysis of fluid behaviours.
61	171PT6E09	Horizontal Well Technology	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of horizontal wells enabling them to be employed for designing and evaluation of well integrity.
62	171PT6L05	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.

63	171PT6L06	Petroleum Reservoir Simulation Lab		✓		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 fluid behaviour in cores.
64	171HS6T07	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.
65	171PT5S02	MOOCs – II		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
66	R1641019	IPR and PATENTS			✓	Students are able to safe guard the IP and innovations at their place of work.
67	R1641271	Integrated Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
68	R1641272	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.
69	R1641273	Surface Production Operations		✓		Students are able to demonstrate technical skill of characterizing different separators , modelling and analysis of production.
70	R1641274	Oil and Gas Processing Plant Design		✓		Students are able to demonstrate technical skill of characterizing different separators, compressors , pumps , modelling and analysis of production.
71	R1641277	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.
72	R1641278	Petroleum Reservoir Simulation Lab		✓		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 fluid behaviour in cores.
73	R164127A	Natural Gas Hydrates		✓		Students are able to demonstrate technical skill of characterizing different feeds from well , modelling and analysis of hydrates.
74	R164127B	pipeline engineering		✓		Students are able to demonstrate technical skill of characterizing different material behaviours , modelling and analysis of pipeline operations.
75	R164127C	Horizontal well technology				
76	R164127D	Coal Bed Methane Engineering				
77	R164127E	Offshore engineering				
78	R164127F	Reservoir stimulation				

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
79	R1642271	EOR Techniques		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
80	R1642272	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.
81	R1642273	Petroleum Economics Policies and Regulations			✓	Students are able to acquire skills related to different energy laws enabling them to be employed for energy sector.
82	R164227A	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.
83	R164227B	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures , modelling and analysis of production.
84	R164227C	Reservoir Modeling & Simulation	✓			Students are able to demonstrate problem solving skills by modelling physical phenomenon using Practical Reservoir Modelling & Simulation (MATLAB Based) in various engineering disciplines.
85	R1642275	Seminar(SIP Report Presentation)		✓		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.
86	R1642276	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.
		Total	24	51	5	



Program Coordinator



Head of the Department

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

PROGRAM STRUCTURE**I SEMESTER**

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T02	Engineering Physics				
4	191ES1T01	Programming for Problem Solving Using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab-I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
6	191BS1L01	Engineering Physics Lab	✓			
7	191ES1L01	Programming for Problem Solving Using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in software industry.
8	191ES1L02	Basic Engineering Workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.

9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T05	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.
12	191BS2T06	Chemistry of Materials				
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
14	191ES2T03	Essential Electrical & Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
15	191ES2T04	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.
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
17	191BS2L04	Engineering Chemistry Lab				

18	191ES2L03	Essential Electrical and Electronics Engineering Lab		✓		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.
19	191ES2L14	Agricultural Engineering Workshop		✓		Students are able to demonstrate technical skill of developing components by lathe machine, welding joints, milling and drilling practices
20	191PR2P01	Engineering Exploration Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171AG3T01	Principles of Soil Science and Agronomy	✓			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.
22	171AG3T02	Renewable Energy Sources	✓			Students are able to acquire skills related to storage and application techniques of solar energy, different modern energy conversion technologies enabling them to be employed in renewable energy companies.
23	171AG3T03	Ground Water Hydrology, Wells and Pumps	✓			Students are able to acquire skills related to exploration and replenishment of ground water, design, development, and construction of wells, Selection of pump for irrigation by considering performance characteristics, installation and troubleshooting enabling them to be employed in water pump companies.
24	171ES3T19	Properties and Strength of Materials	✓			Students are able to acquire skills related to analyzing 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.
25	171ES3T20	Electrical and Electronics Engineering	✓			Students are able to acquire skills related to basic electrical and electronic principles enabling them to be employed for designing civil engineering constructional elements.
26	171ES3T21	Surveying and Leveling	✓			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.
27	171AG3L01	Soil Science and Agronomy Field Lab		✓		Students are able to demonstrate technical skill of crop management practices adopted for increasing the crop productivity.
28	171ES3L11	Surveying and Leveling 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
29	171HS3A10	Employability Skills - I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
30	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values,

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171AG4T04	Thermodynamics and Refrigeration Systems	✓			Students are able to acquire skills related to applications and performance evaluation of different refrigeration cycles, performance of 4 stroke and 2-stroke Diesel and Petrol Engines enabling them to be employed for both Farm machinery and cold storage companies
32	171AG4T05	Heat and Mass Transfer	✓			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.
33	171ES4T25	Fluid Mechanics and Open Channel Hydraulics	✓			Students are able to acquire skills related to interpretation of fluid properties and their influence on fluid motion, Bernoulli's equation and its applications enabling them to be employed for Hydraulic designing and analysis.
34	171AG4T06	Soil Mechanics	✓			Students are able to acquire skills related to determination of vertical stresses condition for different load conditions, shear strength of soils through theoretical shear parameters which helps them in construction of soil and water conservation structures, irrigation and drainage structures enabling them to be employed for designing drainage and irrigation structures.
35	171AG4T07	Surface Water Hydrology	✓			Students are able to acquire skills related to estimating discharge volume of runoff with hydrographs and unit hydrographs, hydrological design of structures, reservoir planning with flood routing techniques enabling them to be employed in water resources management companies.

36	171AG4T08	Engineering Properties of Biological Materials and Food Quality	✓			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.
37	171ES4L14	Fluid Mechanics and Open Channel Hydraulics Lab		✓		Students are able to demonstrate technical skill of determining major and minor losses in pipes, flow behavior in open channels.
38	171ES4L15	Machine Drawing and Computer Graphics Lab		✓		Students are able to demonstrate technical skill of Manual drawing of machine components and Basics of AUTOCAD
39	171HS4A11	Employability Skills – II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
40	171HS4A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171AG5T09	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.
42	171AG5T10	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.
43	171AG5T11	Agricultural Process Engineering	✓			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.
44	171AG5T12	Agricultural Extension Techniques and Business Management			✓	Students are able to demonstrate Competency in the domain of agriculture extension and business management enabling them to become an entrepreneur.
45	171AG5T13	Farm Power and Tractor Systems	✓			Students are able to acquire skills related to I.C engine systems and tractor systems enabling them to be employed in Farm tractor companies.
46	171AG5E01	Agro Industries and Bi-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.
47	171HS5E01	Managerial Economics and Financial Analysis			✓	Students are able to demonstrate Competency in gaining the managerial skill set and enabling them to be an entrepreneur

48	171AG5E02	Rural Water Supply, Sanitation and Environmental Engineering	✓			Students are able to acquire skills related to Wastewater collection system, treatment and disposal of wastewater enabling them to be employed in any industries.
49	171HS5T06	Employability Skills - III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
50	171AG5L02	Agricultural Process Engineering Lab		✓		Students are able to demonstrate technical skill of designing handling and processing equipment's, determining the power requirement in different types of conveyors
51	171AG5L03	Field Operation and Maintenance of Tractors Lab		✓		Students are able to demonstrate technical skill of periodical maintenance and troubleshooting of all systems like fuel system, lubrication system, cooling system and ignition system and remedial measures for above system of a tractor.
52	171AG5S01	MOOCs – I		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	171AG6T14	Soil and Water Conservation Engineering	✓			Students are able to acquire skills related to design of various gully control structures, temporary and permanent, their designs and quantification of annual soil loss using USLE from a watershed enabling them to be employed in companies which deals with watershed management projects.
54	171AG6T15	Farm Machinery and Equipment – I	✓			Students are able to acquire skills related to design of different farm implements enabling them to be employed in farm machinery companies.
55	171AG6T16	Design of Soil, Water Conservation and Farm Structures	✓			Students are able to acquire skills related to designing and execution of the structures for controlling soil erosion, water erosion and irrigation in fields enabling them to be employed as farm structure designer.
56	171AG6T17	Post Harvest Engineering for Horticulture Produce	✓			Students are able to acquire skills related to preservative techniques on fruits and vegetables, advanced packaging technology in food preservation, and preparation of fermented and unfermented beverages enabling them to be employed in food storage and food processing companies.
57	171AG6E03	GIS and Remote Sensing	✓			Students are able to acquire skills related to techniques of Remote Sensing and GIS applications for land and water resources management enabling them to be employed in GIS and remote sensing related jobs.

58	171AG6E04	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.
59	171AG6E05	Production Technology of Agricultural Machinery	✓			Students are able to acquire skills related to development of different manufacturing techniques in agricultural machinery and cutting tools enabling them to be employed in farm machinery designing companies
60	171AG6E06	Green House / Poly House Technology	✓			Students are able to acquire skills related to techniques for the construction of polyhouse for drying purpose, for horticultural crops enabling them to be employed as greenhouse/ poly house planner.
61	171AG6E07	Optimization, Operations Research and Systems Engineering		✓		Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.
62	171AG6E08	Industrial Engineering and Management			✓	This subject helps the student to demonstrate competency become as the students have interactions between engineering, business, technological and environmental spheres in the modern society. This subject also understand students role as engineers and their impact to society at the national and global context which enabling them to become an entrepreneur.
63	171HS6T07	Employability Skills - IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
64	171AG6L04	Farm Machinery Lab - I		✓		Students are able to demonstrate technical skill of determining parameters of different farm implements, calibration of seed cum fertilizer drills and sprayers.

65	171AG6L05	Soil and Water Engineering Lab		✓		Students are able to demonstrate technical skill of designing of various gully control structures, measurement of flow with current meter and water meter.
66	171AG6S02	MOOCs - II		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
67	R1641353	Post- Harvest Engineering for Horticulture Produce	✓			Students are able to acquire skills related to preservative techniques on fruits and vegetables, advanced packaging technology in food preservation, and preparation of fermented and unfermented beverages enabling them to be employed in food storage and food processing companies.
68	R1641354	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.
69	R164135A	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.
70	R164135B	Green House Technologies	✓			Students are able to acquire skills related to techniques for the constructing of polyhouse for drying purpose, for horticultural crops enabling them to be employed as greenhouse/ poly house planner.
71	R164135C	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.
72	R164135D	Watershed 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.
73	R164135E	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.
74	R164135F	Minor Irrigation and Command area development	✓			Students are able to acquire skills related to improvement of command area, usage of water resources effectively enabling them to employed as water resource planner.
75	R1641357	Farm Machinery Lab-2		✓		Students are able to demonstrate technical skill of determining parameters of different farm implements, calibration of seed cum fertilizer drills and sprayers.
76	R1641358	Dairy and Food Engineering Lab		✓		Students are able to demonstrate technical skills of analyzing heat treatment processes used in milk preservation and operations involved in milk processing.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
77	R1642353	Agro Industries and Bi-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.
78	R164235A	GIS and remote sensing	✓			Students are able to acquire skills related to techniques of Remote Sensing and GIS applications for land and water resources management enabling them to be employed in GIS and remote sensing related jobs.
79	R164235B	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.
80	R164235C	Production Technology of Agricultural Machinery	✓			Students are able to acquire skills related to development of different manufacturing techniques in agricultural machinery and cutting tools enabling them to be employed in farm machinery designing companies.
81	R1642355	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.
82	R1642356	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		82	47	24	06	


Program Coordinator


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

PROGRAM STRUCTURE
I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	191HS1T01	Communicative English		✓		Students are able to demonstrate communication skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
2	191BS1T01	Differential Equations and Linear Algebra		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	191BS1T02	Engineering Physics				
4	191ES1T01	Programming for Problem Solving Using C	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
5	191HS1L01	Communicative English Lab-I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth
6	191BS1L01	Engineering Physics Lab				
7	191ES1L01	Programming for Problem Solving Using C Lab	✓			Students are able to demonstrate technical skills related to control structures, arrays, string formulas enabling them to be employed in

						software industry.
8	191ES1L02	Basic Engineering Workshop		✓		Engineering Workshop helps the students by improving their skills by knowing the construction of various wooden joints and various fitting joints, by understanding different black smithy work and preparing various sheet metal models.
9	191MC1A01	Environmental Science				
10	191MC1A02	Constitution of India				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	191BS2T05	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.
12	191BS2T06	Chemistry of Materials				
13	191ES2T02	Engineering Graphics and Design		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
14	191ES2T03	Essential Electrical and Electronics Engineering	✓			Students are able to acquire technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in logging industry.
15	191ES2T04	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.
16	191HS2L02	Communicative English Lab-II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

17	191BS2L04	Engineering Chemistry Lab				
18	191ES2L03	Essential Electrical and Electronics Engineering Lab		✓		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.
19	191ES2L12	Mining Engineering Workshop		✓		This subject helps the students to demonstrate their technical 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.
20	191PR2P01	Engineering Exploration Project		✓		Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	171MI3T01	Introduction To Mining Technology		✓		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.
22	171MI3T02	Basic Mechanical Engineering For Mines		✓		This course demonstrate technical skills to improve the knowledge of the students about the law of thermodynamics, working principles of I.C engines and explain them about fluid statics, kinematics and dynamics.
23	171BS3T10	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.
24	171ES3T22	Material Engineering		✓		This subject demonstrate the technical skill improvement of the student as it make 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.
25	171MI3T03	Mining Geology-I		✓		Mining Geology -I helps to enhance students skills by giving them clear picture about the

						nature of the material, the attitude of the beds, structures caused by deformed forces, etc. Geology also helps in choosing the method of exploitation, finding the solution for the problems associated with it. Having depth knowledge in this subject students will be able to explore different mineral beds under the earth.
26	171ME3T01	Computer Aided Engineering Drawing Practice		✓		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.
27	171ES3L12	Electrical and Electronics Lab		✓		Electrical and electronics lab helps the students to improvise their technical skills as they get to know how to determine the efficiency of dc shunt, Single phase transformers. This subject also helps to obtain the characteristics and performance of Dc shunt motors. This subject helps student to solve the Dc motor and transformers related problems at the mine site.
28	171ES3L13	Basic 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.
29	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values,

30	171HS3A10	Employability Skills-I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
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IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	171ES4T27	Kinematics Of Machinery		✓		This subject helps the students to demonstrate their technical skills as they are able to understand the nature and role of the kinematics of machinery, the mechanisms and machines, it also helps the students to upgrade their skills by exposes the students to various kinds of power transmission devices like belt, rope, chain and gear drives and their working principles and their merits and demerits.
32	171MI4T04	Computer Application In Mining	✓			This subject helps the student to acquire skills in different mining companies as Providing them basic introduction on CAD applications, with reference to generation of basic CAD drawings which enable them to place in mine planning of different mining company.
33	171MI4T05	Mining Geology –II		✓		This subject demonstrate the technical skills of the student as it aware the students about different economic minerals and emphasizes their distribution in India. It also helps the student to know the basic principles of stratigraphy and procedure to be adopted in sampling . By the knowledge of this subject student can explore different mineral deposit by studying its stratigraphy.
34	171MI4T06	Mine Surveying – I		✓		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.
35	171MI4T07	Surface Mining		✓		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.
36	171MI4T08	Fundamentals of Rock Mechanics		✓		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
37	171MI4L01	Geology 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.
38	171MI4L02	Computer Application In Mining Lab	✓			This subject helps the student to acquire skills in different mining companies as Providing them basic introduction on CAD applications, with reference to generation of basic CAD drawings enabling them to placed in mine planning.

39	171HS4A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
40	171HS4A11	Employability Skills-II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171MI5T09	Under Ground Coal 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.
42	171MI5T10	Mine Environment Engineering - I		✓		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.
43	171MI5T11	Basic Geo Mechanics		✓		This subject helps the student to demonstrate technical skills as they are able to understand In-situ stress , slope stability, mine subsidence and numerical methods in rock mechanics.
44	171MI5T12	Mine Surveying - II		✓		This subject helps the student to improve their skills by understanding the correlation and stope survey methods and know and limitations of photogrammetry and modern survey methods.
45	171HS5T04	Managerial Economics and Financial Analysis	✓			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.
46	171MI5E01	Maintenance and Reliability Engineering		✓		This subject helps the student to demonstrate technical skills as they will be able to understand various aspects of maintenance, reliability and reliability management.
47	171MI5E02	Mine Construction and Management		✓		This subject helps the student to demonstrate technical skills to understand the selection sites of mine opening, types of lining, different drivages and surface layouts of different mines.
48	171MI5E03	Industrial Management and Labor Relations		✓		This subject helps the students to demonstrate technical skills as they will be able to understand project management techniques and labour relations and labour welfare activities.
49	171HS5T06	Employability Skills – III	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
50	171MI5L03	Rock Mechanics Lab		✓		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
51	171MI5L04	Mine Surveying Lab		✓		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.
52	171MI5S01	MOOCs - I				

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	171MI6T13	Under Ground 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.
54	171MI6T14	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
55	171MI6T15	Mine Environment Engineering - II		✓		This subject helps the student to demonstrate their problem solving skills of the students as they will understand the process of spontaneous heating, fires, explosion, inundation and adverse effects, rescue and recovery operation and standards of lighting arrangement.
56	171MI6T16	Mining Machinery		✓		This subject demonstrate technical skills as they will aware of winding engines and other winding accessories, various coal face machinery, they will also get to understand design and construction details of excavating & transporting equipment's used in surface mines

57	171MI6E04	Advanced Geo Mechanics		✓		This subject demonstrate technical skills as student able to understand the in extensometers and bore hole cameras, underground support system and modern instruments of Hydroelectric projects and tunnels.
58	171MI6E05	Mine Fire and Spontaneous Heating		✓		This subject demonstrate technical skills as students able to understand mine fires with statistical data of Indian mines, techniques and equipment of fire fighting, spontaneous heating and liability indices and relative proneness of spontaneous heating.
59	171MI6E06	Mineral Exploration		✓		This subject demonstrate technical skills as students able to understand the methods of mineral exploration its instrumentation, exploratory drillings and fundamentals of remote sensing.
60	171MI6E09	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
61	171HS6T07	Employability Skills - IV	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
62	171MI6L05	Mineral Processing Technology 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.
63	171MI6L06	Environmental Engineering Lab		✓		This subject helps the student to upgrade their skills by making them familiar with detection of different gases using different methods detectors and multi gas detector, to find flammable index of coal dust and understand the rescue and recovery operations using different rescue apparatus.
64	171MI6S02	MOOCs - II				

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
65	R1641261	Computer Applications in Mining	✓			This subject helps the student to demonstrate technical skills in different mining companies as Providing them basic introduction on CAD applications, with reference to generation of basic CAD drawings for mine planning.
66	R1641262	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.
67	R1641263	Rock Mechanics & Ground Control		✓		This subject helps the students to demonstrate technical skills as they will understand geotechnical engineering studies will provide an understanding for the assessment of Rock mass characterization based on Rock mass properties. It also aware the student of stress and stress regime along the mine openings, methods of stress measurement, stress regime, induced stresses, failure modes, propagation of failures in the rock due to dynamic loading.
68	R1641264	Mine Legislation & 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.
69	R164126C	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.
70	R164126D	Deep Sea Mining		✓		This subject acquire skills related to new technologies for the extraction of oil and gas production, developments in marine technologies for the extraction of deep seated minerals in future enabling them to be employed in petroleum and deep sea mining industries.
71	R164126E	Mine Construction Engineering		✓		It improves the technical skills of the students as it involves various aspects of selection criteria starting from site selection, design of underground structures, access to different working areas and development of stopping and mining methods.
72	R164126F	Tunnelling Engineering		✓		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.
73	R1641019	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
74	R1641267	Computer Applications in Mining Lab	✓			This subject helps the student to employ in different mining companies as Providing them


						basic introduction on CAD applications, with reference to generation of basic CAD drawings for mine planning.
75	R1641268	Rock Mechanics & Ground Control Lab		✓		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

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
76		Short Survey Camp (One Week)				
77	R1642031	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.
78	R1642261	Mine Economics & Investment		✓		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.
79	R1642262	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.
80	R164226A	Planning of Underground Metal Mining Projects		✓		This subject helps the student to understand different mining methods in under ground metal mining that will help them to know what types of stopping methods can be adopted to different types of mineral deposits.
81	R164226B	Planning of Underground Coal Mining Projects		✓		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.
82	R164226C	Planning of Surface Mining Projects		✓		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.
83	R1642265	Seminar		✓		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.
84	R1642266	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.
Total		84	16	57	02	


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 -I	✓			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 in various organizations.
16	192MC1A03/ 192MC2A03	Sanskrit for Technical Knowledge				
17	192MC1A04/ 192MC2A04	Value Education				
18	192MC1A05/ 192MC2A05	Constitution of India				
19	192MC1A06/ 192MC2A06	Pedagogy studies				
20	192MC1A07/1 92MC2A07	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
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	172TE3C01	Comprehensive Viva-Voce	✓			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.
37	172TE3R01	Seminar – I	✓			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.
38	-----	Project Work Part - I	✓			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.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
39	172TE4C02	Seminar – II	✓			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.
40	172TE4P01	Project Work Part - II	✓			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.
Total		40	20	14		


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 be 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	172PD3C01	Comprehensive Viva-Voce				
33	172PD3R01	Seminar – I	✓			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.
34	172PD3P01	Project Work Part – I				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
35	172PD4R02	Seminar – II				
36	172PD4P01	Project Work Part- - 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		36	17	8	0	


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	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.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	192CS2T03	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
12	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
13	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
14	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
15	192CS2E09	Soft Computing		✓		.
16	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
17	192CS2E11	Principles of computer security		✓		Students are able to acquire knowledge on principles and methods to secure digital devices and networks
18	192CS2E12	High Performance Computing	✓			Students are able to process data and perform complex calculations at high speeds enabling them to work with different operating systems
19	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
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	✓			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
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.
32	172CO3C01	Comprehensive Viva-Voce				
33	172CO3R01	Seminar - I				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
34	172CO4R02	Seminar - II	✓			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.
35	172C04P01	Project Work Part- - 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		35	16	8	0	


Program Coordinator


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

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	172VD3C01	Comprehensive Viva-Voce	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
33	172VD3R01	Seminar – I	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
34		Project Work Part – I	✓			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
35	172VD4R02	Seminar – II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs
36	172VD4P01	Project Work Part - 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		36	20	6	0	


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	192ST1E03	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	192ST1E01	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	192ST1E02	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 a 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	Entrepreneurship	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
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	1925T2E07	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	1925T2E08	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	1925T2E09	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	1925T2E10	Earthquake Resistant 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	1925T2E11	Precast and Prefabricated Structures	✓			Students are able to acquire skills related to properties of structural members related to precast and prefabricated structures enabling them to be employed

						in civil industry.
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				
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				

III SEMESTER


S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
32	172SE3C01	Comprehensive Viva-Voce				
33	172SE3R01	Seminar -I				
34	-----	Project Work Part - I				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
35	172SE4R02	Seminar -II				
36	172SE4P01	Project Work Part -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		36	17	8		



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				
15	192PE2E06	Advanced Well Completions				
16	192PE2E07	Flow Assurance				
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		✓		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	172PE3C01	Comprehensive Viva-Voce	✓			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.
31	172PE3R01	Seminar - I	✓			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
32	172PE4R02	Seminar - 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.
33	172PE4R01	Project Work Part- - 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	8	14	1	



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	192SO1T01	Software Engineering		✓		Students will be able to acquire technical skills to plan and manage projects at each stage of the software development life cycle (SDLC)
2	192SO1T02	Advanced Data Structures		✓		Students will be able to acquire technical skills to work on project development by identifying the analyzing different phases in project development like requirements, analysis, design, coding, testing and deployment.
3	192SO1E01	Software Project and Process Management				
4	192SO1E02	Machine Learning				
5	192SO1E03	E-Commerce	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
6	192SO1E04	Software Quality Assurance and Testing	✓			Students will be able to acquire technical skills to implement the distributed architecture in building real time applications.
7	192SO1E05	Cloud Computing				
8	192CO1E05	Internet of Things				
9	192HS1T01	Research Methodology and IPR	✓			Students will be able to acquire programming skills to develop applications using scripting languages like PROLOG, Pascal, Python, Perl and Ruby which enable them to be employed as software developer.

10	192SO1L01	Advanced Data Structures Lab		✓		Students will be able to acquire technical skills to understand supply chain and enterprise resource management is helpful in developing software applications.
11	192SO1L02	Software Engineering Lab – I	✓			Students will be able to acquire programming skills to develop web pages using HTML, CSS, JavaScript, XML and PHP at server side and also to work with data on cloud using PIG & HIVE tools which enable them to be employed as software developer/Data nalyst.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	192MC1A01	English for Research Paper Writing		✓		Students will be able to acquire technical skills to design patterns for the project being developed using UML.
13	192MC1A02	Disaster Management		✓		Students will be able to acquire technical skills to identify and implement different testing strategies.
14	192MC1A03	Sanskrit for Technical Knowledge				
15	192MC1A04	Value Education				
16	192MC1A05	Constitution of India				
17	192MC1A06	Pedagogy Studies				
18	192MC1A07	Stress Management by Yoga				
19	192MC1A08	Personality Development through Life Enlightenment Skills		✓		Students are able to acquire technical skills in identifying the design issues and constraints while designing the GUI for an application.
20	192MC1A09	Soft Skills		✓		Students will be able to acquire technical skills to develop the cloud infrastructure needed to establish a cloud system for real time application development which enable them to be employed as Cloud Engineer.

21	192SO2T03	Service Oriented Architecture	✓			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.
22	192SO2T04	Mathematical Foundations of Computer Science		✓		Students will be able to acquire technical skills to develop design patterns for software which can be helpful for them to work with different testing strategies.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
23	192SO2E06	Software Testing Methodologies	✓			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.
24	192SO2E07	Agile Software Development	✓			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.
25	192SO2E08	ERP and Supply Chain Management	✓			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.
26	192SO2E09	Secure Software Engineering	✓			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.
27	192SO2E10	Big Data Analytics	✓			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.

28	192SO2E11	Design Patterns	✓			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.
29	192SE2L03	Software Testing Lab	✓			
30	192SE2L04	Software Engineering Lab – II	✓			
31	192SE2P01	Mini Project with Seminar	✓			
32	192MC2A01	English for Research Paper Writing		✓		Students will be able to acquire technical skills to design patterns for the project being developed using UML.
33	192MC2A02	Disaster Management	✓			Students will be able to acquire technical skills to identify and implement different testing strategies.
34	192MC2A03	Sanskrit for Technical Knowledge				
35	192MC2A04	Value Education				
36	192MC2A05	Constitution of India				
37	192MC2A06	Pedagogy Studies				

38	192MC2A07	Stress Management by Yoga				
39	192MC2A08	Personality Development through Life Enlightenment Skills		✓		Students are able to acquire technical skills in identifying the design issues and constraints while designing the GUI for an application.
40	192MC2A09	Soft Skills		✓		Students will be able to acquire technical skills to develop the cloud infrastructure needed to establish a cloud system for real time application development which enable them to be employed as Cloud Engineer.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
41	171SO3C01	Comprehensive Viva-Voce	✓			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	41	16	11	0	



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	192EM1T01	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
2	192EM1T02	Microcontrollers and 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.
3	192EM1E01	Digital Signal and Image Processing	✓			Students are able to acquire skills related to implementation of various signal processing and image processing algorithms, enabling them to be employed for designing and manufacturing of communication equipment.
4	192EM1E02	Parallel Processing	✓			Students will be able to acquire technical skills related to parallel processing and pipelining which enable them to be employed as ES developer. Students are able to acquire skills related to design and development of VLSI signal processing, enabling them to be employed for designing and manufacturing of ICs
5	192EM1E03	VLSI signal processing				
6	192EM1E04	Programming Languages for Embedded Systems	✓			Students are able to acquire skills related to programming languages like embedded C and C++, enabling them to be employed for designing and manufacturing of ES
7	192EM1E05	System Design with Embedded Linux	✓			Students are able to acquire skills related to embedded Linux and microkernel enabling them to be employed for designing and manufacturing of embedded systems

8	192EM1E06	CAD for Digital System	✓			Students are able to acquire skills related to fundamentals of CAD tools for modelling, design, test and verification of VLSI , enabling them to be employed for designing and manufacturing of embedded systems
9	192HS1T01	Research methodology and IPR				
10	192EM1L01	Embedded System Design Lab (using Embedded-C)		✓		Students can gain knowledge about various aspects of embedded systems lab enabling them to be employed as embedded system design engineer
11	192EM1L02	Microcontrollers and Programmable Digital Signal Processors Lab		✓		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.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	192EM2T03	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.
13	192EM2T04	Real Time Operating Systems	✓			Students are able to acquire skills related to design, and evaluate the performance of RTOS enabling them to be employed for designing and manufacturing of embedded systems
14	192EM2E07	Memory Architectures	✓			Students are able to acquire knowledge related to different types of memory architectures enabling them to be employed for designing and manufacturing of embedded systems.
15	192EM2E08	SoC Design				
16	192EM2E09	Sensors & Actuators	✓			Students are able to acquire knowledge related to sensors to measure different parameters like pressure, temperature and actuators like servo motors enabling them to be employed for designing and manufacturing and utilisation of sensors and actuators and systems making use of them
17	192EM2E10	Communication Buses and Interfaces	✓			Students are able to acquire knowledge related to buses used for communication between various blocks of an embedded system enabling them to be employed for designing and manufacturing and utilisation of ES.
18	192EM2E11	Network Security and Cryptography	✓			Students are able to acquire skills related to design, developed and evaluate the performance of secure and cryptographic codes enabling them to be employed for designing and interfacing devices with security

19	192EM2E12	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.
20	192EM2L03	Real Time Operating Systems Lab	✓			Students are able to acquire knowledge related to RTOS which are used in time critical applications enabling them to be employed for designing and manufacturing and utilisation of Embedded systems
21	192EM2L04	Digital System Design Lab	✓			Students are able to demonstrate technical skill of designing electronic circuits with programmable ICs.
22	192EM2P01	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.
23	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
24	192MC1A02/19 2MC2A02	Disaster Management				
25	192MC1A03/19 2MC2A03	Sanskrit for Technical Knowledge				
26	192MC1A04/19 2MC2A04	Value Education				
27	192MC1A05/19 2MC2A05	Constitution of India				
28	192MC1A06/19 2MC2A06	Pedagogy Studies				
29	192MC1A07/19 2MC2A07	Stress Management by Yoga				
30	192MC1A08/19 2MC2A08	Personality Development through Life Enlightenment Skills				

31	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.
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III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
32	172EM3C01	Comprehensive Viva-Voce	✓			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.
33	172EM3R01	Seminar – I	✓			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.
34		Project Work Part – I	✓			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
35	172EM4R02	Seminar – 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.
36	172EM4P01	Project Work Part - 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		36	22	4	0	



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	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		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in

		Soft Skills Lab.				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	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
10	194MBMOOC 1	MOOCs: SWAYAM/NPTEL.		✓		Students are able to demonstrate technical skill of various online courses available adding to their curricular courses
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	194MB2O04	Project Management.		✓		The students are able to demonstrate managerial skills by Modelling of project, project management, project life-cycle, project appraisal.

7	194MB2L03	IT-Lab – 2 (R Programming)		✓		The students are able to demonstrate technical skills to analyze the business data by using R programming.
8	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	174MB3T13	Strategic Management			✓	Students are able to apply the knowledge of environmental scanning and generic strategy alternatives ,which enable them to become entrepreneurs .
2	174MB3T14	Legal Aspects of Business		✓		The students are able to demonstrate managerial skills by learning the basic acts of business, legal clearances and obligations.
3	174MB3T15	Business Ethics & Corporate Governance				
4	174HR3E01	Leadership 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.
5	174HR3E02	Compensation & Reward 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.
6	174HR3E03	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.
7	174HR3E04	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.
8	174FI3E01	Security Analysis & 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.
9	174FI3E02	Banking & Insurance Management	✓			The students are able to acquire skills related to banking industry ,NPA capital adequacy rules which enable them to be employed in banking Industry.
10	174FI3E03	Advance 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.
11	174FI3E04	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.
12	174MA3E01	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.
13	174MA3E02	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.
14	174MA3E03	Customer Relationship Management	✓			The students are able to acquire skills related to Customer relationship management techniques which enable them to be employed in Marketing department of manufacturing and service based companies.
15	174MA3E04	Strategic Marketing	✓			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.
16	174SY3E01	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
17	174SY3E02	RDBMS				
18	174SY3E03	System Analysis &				

		Design				
19	174SY3E04	Web Designing		✓		The students are able to acquire skills related to HTML ,Website designing , which enable them to be employed in Software companies

IV SEMSTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	174MB4T16	Logistic & Supply Chain Management	✓			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	174MB4T17	Entrepreneurship Development			✓	Students are able to apply the knowledge of entrepreneurial skills, legal steps to start enterprises ,which enable them to become entrepreneurs.
3	174HR4E01	Organizational Development & Change Management	✓			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.
4	174HR4E02	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.
5	174HR4E03	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.
6	174HR4E04	Management of 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.
7	174FI4E01	Financial Markets & Services	✓			The students are able to acquire skills related to merger, .takeovers, valuation of firm after mergers which enable them to be employed in Finance department of manufacturing and service companies
8	174FI4E02	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
9	174FI4E03	Risk 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
10	174FI4E04	Tax 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

11	174MA4E01	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	174MA4E02	Promotional 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	174MA4E03	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
14	174MA4E04	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
15	174MB4P02	Major Project		✓		Students are able to Analyze and find the solution for Present Problems in industry or a particular company
16	174SY4E04	Web Designing	✓			The students are able to acquire skills related to

						HTML ,Website designing , which enable them to be employed in Software companies
17	174SY4E01	Business Intelligence				
18	174SY4E02	Enterprise Resource Planning	✓			The students are able to acquire skills related to ERP-SCM, which enable them to be employed in Software companies
19	174SY4E03	Cyber Laws & Security		✓		The students are able to demonstrate Technical skills by Modelling of cyber laws and security.
Total		59	33	20	2	

A. Mehra
Program Coordinator

N. V. Reddy
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	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				
3	195IM2T08	Managerial Economics		✓		The 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 SEMSTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	175IM3T11	Principles of Management		✓		The students are able to demonstrate managerial skills by using the motivational theories ,leadership theories and organizational structure principles.
2	175IM3T12	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	175IM3T13	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	175IM3T14	Business Law				
5	175IM3T15	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	175IM4T16	Organizational Behavior		✓		The students are able to demonstrate managerial skills by using the Management styles and principles to build an organization.
2	175IM4T17	Management Accounting	✓			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
3	175IM4T18	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	175IM4T19	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	175IM4T20	Management Information Systems		✓		The students are able to demonstrate technical skills to analyze Different information systems, usage in business decision making.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	175IM5T21	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	175IM5T22	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	175IM5T23	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	175IM5T24	Production & Operations Management				

5	175IM5T25	Research Methodology	.	✓		The students are able to demonstrate Research skills to analyze functional area problems in Industries
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VI SEMSTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	175IM6T26	Operations Research		✓		The students are able to demonstrate problem solving skills by Modelling Linear programming, Dynamic Programming
2	175IM6T27	International Business			✓	Students are able to apply the knowledge of environmental scanning and generic strategy alternatives ,which enable them to become entrepreneurs .
3	175IM6T28	Strategic Management			✓	Students are able to apply the knowledge of International business strategies ,which enable them to become international entrepreneurs .
4	175IM6T29	Decision Support Systems		✓ 205		The students are able to demonstrate managerial Skills by Modelling Decision

						making systems
5	175IM6P01	Minor Project		✓		Project Help the Student to Analyze and find the solution for Present Industry Problems.

VII SEMSTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	16IM701	Knowledge Management		✓		The students are able to demonstrate Creative skills by analyzing different Brainstorming techniques and Knowledge management techniques to create Skill human capital
2	16IM702	Strategic Cost 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.

3	16IM703A	HR Planning	✓			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	16IM704B	Leadership 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 based companies.
5	16IM705C	Compensation and Reward 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 based

						companies.
6	16IM703D	Security Analysis	✓			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	16IM704A	Banking and Insurance Management	✓			The students are able to acquire skills related to banking industry, NPA capital adequacy rules which enable them to be employed in banking Industry.
8	16IM705B	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	16IM703C	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.
10	16IM704D	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.
11	16IM705A	Supply Chain	✓			The students are able to acquire skills related to cost benefit analysis of

		Management				different supply chains, designs which enable them to be employed in Marketing department of manufacturing and service based companies
12	16IM703B	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
13	16IM704C	RDBMS				

14	16IM705D	Web Designing	✓			The students are able to acquire skills related to HTML ,Website designing which enable them to be employed in Software companies
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VIII Semester

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	16IM801A	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.
2	16IM802B	Project Management		✓		The students are able to demonstrate managerial skills by Modelling of project, project management, project life-cycle, project appraisal.
3	16IM803C	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.
4	16IM804D	Strategic Human	✓			The students are able to acquire skills related to

		Resource Management				recruitment, Competitive strategies which enable them to be employed in HR department of Manufacturing and service based companies.
5	16IM805A	Organizational Development & Change Management	✓			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.
6	16IM803B	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.
7	16IM804C	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	16IM805D	Financial Markets and Services	✓			The students are able to acquire skills related to merger, takeovers, valuation of firm after mergers which enable them to be employed in Finance department of manufacturing and service companies
9	16IM803A	Customer Relationship Management	✓			The students are able to acquire skills related to Customer relationship management techniques which enable them to be employed in Marketing department of manufacturing and service based companies.
10	16IM804B	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.
11	16IM805C	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	16IM803D	System Analysis & Design	✓			
13	16IM804A	Business Intelligence	✓			The students are able to acquire skills related to Data mining, connecting in BI systems, which enable them to be employed in Software companies.
14	16IM805B	Enterprise Resource Planning	✓			The students are able to acquire skills related to ERP-SCM, which enable them to be employed in Software companies
Total		58	34	16	3	

K. Shailaja
Program Coordinator

D. Viral
Head of the Department
Head of the Department
 Department of Management Studies
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 SURAMPALAM

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	193MC1T01	Problem Solving with C		✓		Students are able to acquire skills related to problem solving techniques, develop programming skills and to learn the basic concepts.
2	193MC1T02	Computer Organization		✓		Students are able to acquire skills related to Computer Organizations to understand the internal organization of computers, CPU, memory unit and Input/Outputs and the relations between its main components.
3	193MC1T03	Discrete Mathematical Structures				
4	193MC1T04	Probability and Statistics		✓		Students are able to demonstrate problem solving skills by modelling Probability and statistics knowledge on mathematical probability calculation and for statistical analysis.
5	193MC1T05	Accounting and Financial Management			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
6	193MC1L01	English Language Communication Skills Lab		✓		-Students are able to demonstrate problem solving skills by ELCS to develop the ability to express fluently in both written as well as oral form of language which is very much essential for the career growth

7	193MC1L02	Problem Solving with C Lab		✓		Students are able to acquire skills related to problem solving techniques, develop programming skills and to learn the basic concepts.
8	193MC1L03	IT Workshop (Lab)	✓			The students can able to learn skills related to the automation of an office and that basic knowledge of the computers.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
9	193MC2T06	Data Structures		✓		Students are able to acquire skills related to problem solving techniques of Data structures to different sorting searching algorithms and data structures like stack, queue, linked list, Trees and Graphs.
10	193MC2T07	Operating Systems		✓		Students are able to acquire skills related to problem solving techniques of Operating Systems to understand the process flow, task scheduling, Organizing memory, process, processor. Etc., which is very much essential for the career growth.
11	193MC2T08	Software Engineering		✓		-Students are able to acquire skills related to problem solving techniques of Software Engineering to understand the process flow of software development, different soft water development models, Testing an application, and deployment of applications. It is very much essential for the career growth.
12	193MC2T09	OOP Through Java		✓		Students are able to demonstrate Problem solving skills to analyze the real time problem, and creative solutions using JAVA Programming language.
13	193MC2T10	Optimization Techniques				Students are able to demonstrate Problem solving skills to analyze the real time problem, and creative solutions using JAVA Programming language.
14	193MC2L04	OOP Through Java Lab		✓		Students are able to demonstrate Problem solving skills to analyze the real time problem, and creative solutions using JAVA

						Programming language.
15	193MC2L05	Data Structures Lab		✓		Students are able to acquire skills related to problem solving techniques of Data structures to different sorting searching algorithms and data structures like stack, queue, linked list, Trees and Graphs.
16	193MC2L06	Operating Systems and Linux Lab		✓		Students are able to acquire skills related to problem solving techniques of Operating Systems to understand the process flow, task scheduling, Organizing memory, process, processor. Etc., which is very much essential for the career growth.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
17	173MC1T11	Data Base Management Systems		✓		Students are able to demonstrate Problem solving skills to analyze structured way to store and retrieve the data in effective way.
18	173MC1T12	Computer Networks		✓		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.
19	173MC1T13	Unix Programming		✓		Students are able to demonstrate Problem solving skills of Unix programming to gain problem-solving skills i.e. to solve a problem in a logical as well as creative way.
20	173MC1T14	Management Information System				
21	173MC1T15	Design And Analysis Of Algorithms		✓		Students are able to demonstrate Problem solving skills to analyze the designing of algorithms and analysis of algorithms.
22	173MC1L07	Data Base Management Systems Lab		✓		Students are able to demonstrate Problem solving skills to analyze structured way to store and retrieve the data in effective way.
23	173MC1L08	Unix Programming Lab		✓		Students are able to demonstrate Problem solving skills of Unix programming to gain problem-solving skills i.e. to solve a problem in a logical as well as creative way.

24	173MC1L09	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.
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IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
25	173MC1T16	Object Oriented Analysis And Design		✓		Students are able to demonstrate Problem solving skills to analyze the Object oriented analysis and design fundamentals of object modelling, differentiate Unified Process from other approaches, static and dynamic UML diagrams.
26	173MC1T17	Advanced Java & Web Technologies		✓		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 Advanced Java Programming.
27	173MC1T18	Data Warehousing And Mining	✓			Students are able to acquire skills related to Data warehousing is a method of organizing and compiling data into one database, whereas data mining deals with fetching important data from databases.
28	173MC4E01	Mobile Computing	✓			Students are able to acquire skills related to Mobile Computing to understand the cellular networks, Technologies, BTS, communication in mobility and advanced concepts.
29	173MC4E02	Human Computer Interaction		✓		Student are able to demonstrate Problem solving skills to gain problem-solving skills i.e. how to visualize the web sites in effective way.

30	173MC4E03	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector.
31	173MC4E04	Software Project Management	✓			Students are able to acquire skills related to SPM, to understand the different models of software project developing, different approaches in developing and solving problems while developing projects.
32	173MC4E05	Artificial Intelligence	✓			Students are able to acquire skills related to Artificial Intelligence to understand the evaluation of the AI, problem solving approaches, expert systems, or in Expert systems and fuzzy logic problem solutions.
33	173MC4E06	Embedded Systems				
34	173MC1L10	Advanced Java & Web Technologies 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 Advanced Java Programming.
35	173MC1L11	Data Warehousing And Mining Lab	✓			Students are able to acquire skills related to Data warehousing is a method of organizing and compiling data into one database, whereas data mining deals with fetching important data from databases.
36	173MC1L12	Object Oriented Analysis And Design Lab		✓		Students are able to demonstrate Problem solving skills to analyze the Object oriented analysis and design fundamentals of object modelling, differentiate Unified Process from other approaches,

						static and dynamic UML diagram
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V SEMESTER


S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
37	173MC1T19	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.
38	173MC1T20	Network Programming	✓			Students are able to acquire skills related to Network Programming, how a client will interact with server, socket programming, I/o multiplexing and UDP socket programming.
39	173MC1T21	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
40	173MC4E07	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.
41	173MC4E08	Computer Forensics	✓			Students are able to acquire skills related to introduced the computer forensics, Both privately owned businesses as well as government entities such as the FBI, CIA, and NSA.
42	173MC4E09	E-Commerce		✓		Students are able to acquire technical skills to identify different categories and trends in e-commerce applications, understanding

						technologies used behind e-commerce, pro's and con's of e-commerce applications
43	173MC4E10	Internet Of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
44	173MC4E11	Multimedia Application Development	✓			Students are able to acquire technical skills to learn the development of multimedia applications development with the cross disciplinary skills of computing and creative media.
45	173MC4E12	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
46	173MC1L13	Big Data Analytics Lab	✓			Students are able to acquire skills related to Big Data Use Cases and Big Data Analytics, the building blocks of Hadoop, Map Reduce approach to solve data analytics problems and PIG and Hive programming tools of Hadoop ecosystem
47	173MC1L14	Network Programming Lab	✓			Students are able to acquire skills related to Network Programming, how a client will interact with server, socket programming, I/O multiplexing and UDP socket programming.
48	173MC1L15	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
49	173MC6R01	Project Seminar		✓		Students are able to acquire skills related to learn new technologies and present one of it.
50	173MC6P01	Dissertation/ Thesis	✓			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		50	18	27	1	


Program Coordinator


Head of The Department
Head of the Department
Department of MCA
Aditya Engineering College