1.1.3 Mapping of courses having focus on employability/ entrepreneurship/ skill development offered by the institution (Program wise) during the academic year 2018-19.

Supporting documents

A.Y. 2018-2019

B. Tech Civil Engineering

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	171HS1T01	English - I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics - I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171HS1T02	Environmental Studies				
4	171BS1T03	Engineering Chemistry				
5	171ES1T02	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.
6	171ES1T01	Computer Programming	✓			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.
7	171HS1L01	English Communication Skills 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
8	171BS1L01	Engineering Chemistry Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English - II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T02	Mathematics - II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
12	171BS2T06	Mathematics - III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
13	171BS2T07	Engineering Physics				
14	171ES2T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by making a model of the product by displaying from different angles and adding dimensional information.
15	171ES2T04	Basic Mechanical Engineering		✓		Students are able to acquire skills related to concepts of various mechanical and manufacturing systems.
16	171HS2L02	English Communication Skills 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	171BS2L02	Engineering Physics Lab				
18	171ES2L02	Engineering Workshop and IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LateX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	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.
20	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.
21	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.
22	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.
23	171CE3T02	Surveying			✓	Students are able to demonstrate competency in the domain of measuring distances and calculate areas enabling them to become a surveyor.
24	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.
25	171CE3L01	Surveying Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis helps in training the students to face real time measurements and calculations as surveyors
26	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
27	171HS3A09	Professional Ethics and Human Values				
28	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
29	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. Skill Development - Students are able to demonstrate technical skills of characterizing buildings and develops creative thinking for future endeavours in constructional industry
30	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.
31	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.
32	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.
33	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.
34	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.
35	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.
36	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
37	171HS4A08	Intellectual property rights and patents				
38	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.
39	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
40	R1631011	Management Science		✓		Students are able to demonstrate managing skills by learning the principles of management science applied in project management in constructional activities
41	R1631012	Engineering Geology	✓			Students are able to acquire skills related to various aspects of soil strata and subsurface formation in foundation and subsurface structures in civil constructions enabling them to be employed in constructional sector.
42	R1631013	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.
43	R1631014	Design & Drawing of Reinforced Concrete Structures	✓			Students are able to acquire skills related to designing of structural elements like beams, columns, slabs and foundations enabling them to be employed as designers and planners
44	R1631015	Transportation Engineering - II	✓			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 characteristics enabling them to be employed in constructional industry
45	R1631016	Concrete Technology Lab		✓		Students are able to acquire technical skills related to properties of concrete, design and test the concrete useful in constructional activities
46	R1631017	Geology Lab		✓		Students are able to demonstrate technical skill of geological knowledge in selection of suitable sites for construction and gather raw material like rocks and sand used as materials in buildings enabling them to be employed in constructional industry
47	R1631018	Transportation Engineering Lab		✓		Students are able to demonstrate technical skill of testing of materials and traffic data collection applied in real time situation of RandB industry

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	R1632011	Design & Drawing of Steel Structures				Students are able to acquire skills related to properties of steel structures and designing of connections between the structural members at industrial, offshore, high rise building enabling them to be employed for designing of building units.
49	R1632012	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.
50	R1632013	Environmental Engineering -I				Students are able to acquire skills related to designing of protected water supply scheme for a city enabling them to be employed in public health department of government
51	R1632014	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
52	R1632015A	Electronic Instrumentation				
53	R1632015B	Data Base Management Systems				
54	R163201C	Alternative Energy Sources				
55	R163201D	Waste water Management				- Students are able to demonstrate technical skill of characterizing various waste water treatment technologies.
56	R163227B	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.
57	RT41016F	Green Fuel Technologies				-Students are able to acquire skills related to different energy resources enabling them to be employed for energy sector.
58	R163201C	Geotechnical Engineering Lab				Skill Development - Students are able to demonstrate technical skill of characterizing soil tests on various types of soil to decide suitability of soil for constructional activities as a civil engineer
59	R1632017	Environmental Engineering Lab				Skill Development - applies the theoretical knowledge of analyses of water samples required for drinking water supply and constructional activities and waste water for treatment and disposal in municipal sector of the society
60	R1632018	Computer Aided Engineering Lab				Students are able to demonstrate computer-based drawing and reducing manual drawing in constructional activities

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
61	RT41011	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
62	RT41012	Prestressed Concrete				Students are able to acquire skills related to bridge designing and metro constructions enabling them to be employed in constructional industry
63	RT41013	Construction Technology and 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
64	RT41014	Water Resources 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.
65	RT41015	Remote Sensing and GIS Applications				Students are able to acquire skills related to classification and map making for various spatial references like, ground water, forestry ,transportation in the real world enabling them to be employed in various industries
66	RT41016	(ELECTIVE - I) Ground Improvement Techniques				
67	RT41017	Air Pollution and Control				Students are able to acquire skills related to various aspects of air pollution concepts and their control and their application in the society enabling them to be employed as environmental engineers
68	RT41018	Matrix methods of Structural Analysis				Students are able to acquire problem solving skills related to structural related problems and analysis of structural elements enabling them to be employed in constructional industry
69	RT41019	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
70	RT4101A	Advanced Surveying				Students are able to acquire skills related to advanced techniques in surveying like total station which replaces multiple measuring techniques with a single equipment enabling them to be employed as surveyors
71	RT4101B	Interior Designs and Decorations				Students are able to acquire creative skills related to various aspects of interior design enabling them to be employed as interior designers.
72	RT4101L	Environmental Engineering Lab				Students are able to demonstrate technical skill of characterizing water samples with respect to physical and chemical examination required for drinking water supply and constructional activities and waste water for treatment and disposal in municipal sector of the society
73	RT4101M	GIS & CAD Lab				Students are able to demonstrate technical skill of experimenting various remote sensing software like Arc GIS, ERDAS etc. used in image analysis and map making at various land scape in constructional industry

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
74	RT42011	Estimating, Specifications & 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
75	RT42012A	(ELECTIVE –II) Engineering with Geo-synthetics	✓			Students are able to acquire skills related to various synthetic material used in enhancing soil properties suitable for constructional activities enabling them to be employed as Geotechnical specialized engineers
76	RT42012B	Environmental Impact Assessment and Management				
77	RT42012C	Advanced Structural Engineering	✓			Students are able to acquire skills related to application of recent trends in analysis of dynamic behaviour of a structure, which can further be applied in developing Earth quake resistant buildings enabling them to be employed as designers of buildings
78	RT42012D	Ground Water Development and Management	✓			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.
79	RT42012E	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
80	RT42012F	Infrastructure Management		✓		inculcating managing techniques in maintenance of infrastructure in constructional industry
81	RT42013A	Elective-III: 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
82	RT42013B	Solid 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
83	RT42013C	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
84	RT42013D	Water Shed Management	✓			Students are able to acquire skills related to the effective usage of water and land resources for sustainable future in the society enabling them to be employed as civil engineers

85	RT42013E	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
86	RT42013F	Green Buildings		✓		Students are able to demonstrate technical skill of various green principles related to buildings in constructional activities
87	RT42014A	Elective-IV: Soil Dynamics and Machine Foundations	✓			Students are able to acquire skills related to behaviour of a soil subjected to dynamic (actions having high acceleration) loading and impact on the foundations enabling them to be employed in constructional industry
88	RT42014B	Environmental and Industrial Hygiene				
89	RT42014C	Repair and Rehabilitation of Structures	✓			Students are able to acquire skills related to various aspects of studying deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed in civil industry
90	RT42014D	Water Resources System Planning and Management	✓			Students are able to acquire skills related to planning of various water sources and their conservational principles in the society enabling them to be employed in civil industry
91	RT42014E	Urban Transportation Planning Safety Engineering		✓		Students are able to demonstrate technical skill of generation of trips and trip modelling in R and B industry
92	RT42014G	Bridge Engineering	✓			Students are able to acquire skills related to design, evaluate and study the force applied by the flow of water and relating it to design of dynamics/cyclic loads in various types of bridges enabling them to be employed in constructional industry
93	RT42015	Project Work	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive,communication and creative skills to address societal needs.
TOTAL		**93**	**48**	**29**	**3**	

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	171HS1T01	English - I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics - I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171HS1T02	Environmental Studies				
4	171BS1T05	Applied Chemistry				
5	171ES1T02	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.
6	171ES1T01	Computer Programming	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
7	171HS1L01	English Communication Skills Lab - I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L03	Applied Chemistry Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English - II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T02	Mathematics - II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
12	171BS2T06	Mathematics - III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
13	171BS2T04	Applied Physics				
14	171ES2T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
15	171EE2T01	Electrical Circuit 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.
16	171HS2L02	English Communication Skills Lab - II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L04	Applied Physics Lab				
18	171ES2L02	Engineering Workshop and IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	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.
20	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
21	171EE3T04	Basic Electronics Devices and Circuits				
22	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.
23	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.
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	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.
26	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.
27	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.
28	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
29	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 electoral parameters.
30	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
31	171ES4T24	Digital Circuits and Logic Design				
32	171EE4T08	Control Systems	✓			Imparts foundations of control systems, which are helpful in controlling industrial and domestic processes, making the student employable.
33	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.
34	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.
35	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.
36	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

37	171HS4A11	Employability Skills - II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
38	R1631021	Power Systems-II	✓			Students are able to acquire skills related to how an advanced 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.
39	R1631022	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.
40	R1631023	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.
41	R1631024	Pulse & 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.
42	R1631025	Power Electronics	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
43	R1631026	Electrical Machines-II Laboratory	✓			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
44	R1631027	Control Systems Laboratory	✓			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.
45	R1631028	Electrical Measurements Laboratory	✓			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.

46	R1631029	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
47	R1632021	Power Electronic Controllers & 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.
48	R1632022	Power System Analysis	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
49	R1632023	Micro Processors 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.
50	R1632024	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.
51	R163202A	Unix and Shell Programming		✓		Students are able to demonstrate programming skill for coding and building applications which is required for software industries.
52	R163204A	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.
53	R163202B	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	R163202D	Robotics				
55	R163202E	Neural Networks &Fuzzy Logic				

56	R163202F	Energy Audit and Conservation& Management			✓	the course focuses on the loss and profit studies and other company maintenance activ̇es, creates the intrust among the students to have own company.
57	R1632026	Power Electronics 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.
58	R1632027	Micro Processors and Micro controllers Laboratory		✓		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.
59	R1632028	Data Structures Laboratory		✓		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.
60	R1632029	Professional Ethics & Human Values		✓		This subject help the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
61	RT41021	Renewable Energy Sources and 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.
62	RT41022	HVAC and DC 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.
63	RT41023	Power System Operation and Control	✓			Students are able to acquire skills related to a well-designed power system that ensures robust performance and maximizes plant availability under all operating conditions, including transient conditions like motor starting, non-linear loads and generator loss enabling them to get employed in electrical power sectors.
63	RT41024	Energy Audit and Conservation& Management			✓	the course focuses on the loss and profit studies and other company maintenance activeties, creates the intrust among the students to have own company.
65	RT41025	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.
66	RT41026	Non-Conventional Sources of Energy	✓			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.
67	RT41027	Optimization Techniques		✓		Students are able to acquire skills related to problem solving techniques of Optimization Techniques to achieve the "best" design relative to a set of prioritized criteria or constraints.
68	RT41028	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.

69	RT41029	Electrical Distributions Systems	✓			Students are able to acquire skills related to mitigating some of the potential distribution of electrical power challenges imposed by the growth in non-dispatchable renewable generation on electric grids that enables them to get employed in power distribution company.
70	RT41030	Optimization Techniques		✓		Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.
71	RT4102L	Microprocessors and Microcontrollers Lab		✓		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.
72	RT4102M	Electrical Simulation Lab	✓			Students are able to acquire skills related to various types of simulation of electrical components that enable them to get employed in core (electrical) industry/company related to designing of electrical components.
73	RT4102N	Power Systems Lab	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
74	RT42021	Digital Control Systems	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
75	RT42022A	Advanced Control Systems		✓		The students are able to acquire technical skills in strategic advanced control methods to improving productivity and enhancing the best practices of the company.
76	RT42022B	Extra High Voltage Transmission	✓			Students are able to acquire skills related to mitigating some of the potential transmission of high voltage electrical power challenges that enables them to get employed in power transmission company.
77	RT42022C	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
78	RT42023A	Electric Power Quality	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to et employed in industries focusing in saving money on electricity bill and carbon footprint.
79	RT42023B	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 analyzed and deciphered by complex data processing techniques.
80	RT42023C	FACTS: Flexible Alternating Current Transmission System	✓			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.
81	RT42024A	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.

82	RT42024B	UNIX and Shell Programming		✓		Students are able to demonstrate programming skill for coding and building applications which is required for software industries.
83	RT42024C	AI Techniques		✓		Students are able to demonstrate coding skills related to various AI methods that helps to gain automatic problem-solving skills i.e. to solve a problem in an automatic manner without human intervention manner.
84	RT42024D	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.
85	RT42024E	Systems Engineering		✓		Students are able to demonstrate technical skills responsible for the functioning and working of a system as he is the one who takes care of all the phases of system engineering.
86	RT42025	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		86	43	29	5	

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	171HS1T01	English - I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics - I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171HS1T02	Environmental Studies				
4	171BS1T03	Engineering Chemistry				
5	171ES1T02	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
6	171ES1T01	Computer Programming	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
7	171HS1L01	English Communication Skills Lab - I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L01	Engineering Chemistry Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English - II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T02	Mathematics - II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
12	171BS2T06	Mathematics - III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
13	171BS2T07	Engineering Physics				

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
14	171ES2T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
15	171ES2T05	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.
16	171HS2L02	English Communication Skills Lab - II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L02	Engineering Physics Lab				
18	171ES2L02	Engineering Work shop and IT work shop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	171ES3T13	Metallurgy & Materials Science	✓			Students are able to acquire skills related to mechanical behavior of materials under different loading conditions enabling them to be employed as a materials engineer.
20	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.
21	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.
22	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.
23	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
24	171ME3T01	Computer Aided Engineering Drawing Practice		✓		Computer Aided Drawing practice is designed to improve the skills of the students as they will able to draft packages and commands for computer aided drawing and modelling. Students will able gain the skills to draw complex drawing by using this tools.
25	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 help student to solve the Dc motor and transformers related problems at the mine site.
26	171ES3L06	Mechanics of Solids and Metallurgy Lab		✓		Students are able to acquire skills related to testing of material behavior under various direct loads and microstructure of metals and nonmetals.
27	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.
28	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
29	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.
30	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.
31	171ME4T04	Production Technology	✓			Students are able to acquire skills related to various manufacturing processes, different joining techniques and bulk metal deforming processes.
32	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.
33	171ME4T06	Industrial Engineering and Management			✓	Students are able to demonstrate Competency related to managerial skill set and enable them to be an entrepreneur.
34	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
35	171HS4T08	Intellectual Property rights and patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
36	171ME4L01	Production Technology Lab		✓		Students are able to acquire skills related to various manufacturing process, different joining techniques and bulk metal deforming processes.
37	171ES4L07	Fluid mechanics and Hydraulic Machinery Lab		✓		Students are able to demonstrate technical skills in working with turbines, pumps and understand flow behavior at various sections of harnessing energy from alternate energy sources.
38	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
39	R1631031	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.
40	R1631032	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
41	R1631033	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.
42	R1631034	Operations Research	✓			Students are able to acquire analytical skills in finding optimal solutions of different models using various decision-making techniques.
43	R1631035	Thermal Engineering -II	✓			Students are able to acquire skills on basic knowledge of Rankine cycles, boilers, chimneys, gas turbines and enabling them to be employed in thermal power plants.
44	R1631036	Theory of Machines Lab		✓		Students are able to acquire analytical skills in analysis of mechanisms for a specified type of motion in machine.
45	R1631037	Machine Tools Lab		✓		Students are able to acquire skills to operate various machine tools enabling them to be employed in Manufacturing sector.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
46	R1631038	Thermal Engineering Lab		✓		Students are able to acquire analytical skills on working and performance of I.C. Engines and Reciprocating compressors.
47	R1631029	IPR& Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	R1632031	Metrology	✓			Students are able to acquire skills related to the measurement of linear and angular measuring instruments.
49	R1632032	Instrumentation and Control systems	✓			Students are able to acquire skills related to working of measuring instruments and control systems and enabling them to be employed in material characterization laboratories.
50	R1632033	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
51	R1632034	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.
52	R163201B	Data Base Management Systems	✓			Students are able to acquire skills related to SQL commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer
53	R163201D	Waste Water Management	✓			This subject demonstrates technical skills of students by making them know planning and the design of waste water collection, conveyance and treatment systems for a community/town/city, also helps them to knowledge of characterization of waste water generated in a community.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
54	R1632036	Heat Transfer Lab		✓		Students are able to demonstrate problem solving skills in calculating the heat transfer coefficient through conduction, convection and radiation.
55	R1632037	Metrology & Instrumentation Lab		✓		Students are able to acquire technical skills in measuring linear and angular measurements and calibrate pressure gauge, Temperature detectors and LVDT enabling them to be employed in material characterization labs and various manufacturing industries.
56	R1632038	Computational Fluid Dynamics Lab		✓		Students are able to demonstrate skills on developing numerical methods and governing equations related to fluid flow and heat transfer.
57	R1632029	Professional Ethics &Human Values				

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
58	RT41031	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.
59	RT41032	CAD/CAM	✓			Students are able to demonstrate problem solving skills for improving productivity and enhancing the best practices of the company.
60	RT41033	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 companies as a FEA-Engineer
61	RT41034	Unconventional Machining Processes	✓			Students are able to acquire skills on modern machining processes and working principles enabling them to be employed in manufacturing industries
62	RT41035	MEMS	✓			Students are able to acquire skills related to the fundamental knowledge on processes of micro-electro-mechanical systems and materials used for manufacturing micro-electro-mechanical systems and enabling them to be employed in electronic industries.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
63	RT41036	Nano technology	✓			Students are able to acquire skills in developing the concept and fundamentals of Nanotechnology
64	RT41037	Material Characterization techniques	✓			Students are able to acquire skills related to knowledge on different characterization techniques and can be placed in material characterization labs
65	RT41038	Design for Manufacture	✓			Students are able to demonstrate technical skills in design of manufacturing through consideration of cost, quality and reliability.
66	RT41039	Automation in Manufacturing	✓			Students are able to demonstrate skills for automating the manufacturing processes.
67	RT4103A	Industrial hydraulics and Pneumatics	✓			Students are able to demonstrate problem solving skills in analyzing the concepts of hydraulic systems, pneumatic systems and its components.
68	RT4103L	Simulation 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
69	RT4103M	Design/Fabrication project		✓		Students are able to demonstrate skills to develop ability to conceptualize a product, apply standard/innovative design techniques for developing an innovative product design.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
70	RT42031	Production Planning and control			✓	This subject helps the student to demonstrate competency in the concepts of production and service systems, it also helps to know the principles and techniques in the design, planning and control of these systems to optimize and make best use of resources in achieving their objective which helps them to enable them a good entrepreneur.
71	RT42032	Green Engineering Systems	✓			Students are able to demonstrate problem solving skills in analyzing the significance of alternative sources of energy; green energy systems.
72	RT42033A	Experimental Stress Analysis	✓			Students are able to demonstrate problem solving skills in finding the response of structure to different types of loads
73	RT42033B	Mechatronics	✓			Students are able to demonstrate Competency to understand the knowledge of mechatronics and enabling them to be employed in electronics industries.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
74	RT42033C	Advanced Materials	✓			Students are able to acquire skills related to the basic concepts of synthesis and characterization of advanced materials and enabling them to be employed as materials engineer and metallurgist.
75	RT42033D	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 sectors.
76	RT42034A	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
77	RT42034B	Advanced Optimization techniques	✓			Students are able to demonstrate problem solving skills in optimization of parameters in various engineering applications
78	RT42034C	Gas Dynamics and Jet Propulsion	✓			Students are able to acquire skills This course impart skills in analyzing the behavior of isentropic flow of ideal gases and enabling them to be employed gains employment in thermal power plants.
79	RT42034D	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

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
80	RT42035	Project Work		✓		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		**80**	**46**	**24**	**4**	

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	171HS1T01	English – I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics – I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171BS1T02	Mathematics – II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
4	171BS1T04	Applied Physics				
5	171ES1T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
6	171ES1T01	Computer Programming				
7	171HS1L01	English Communication Skills Lab – I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L04	Applied Physics Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English – II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T06	Mathematics – III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
12	171HS2T02	Environmental Studies				
13	171BS2T05	Applied Chemistry				
14	171ES2T06	Electrical and Mechanical Technology	✓			Students are able to acquire skills related to basic electrical and electronic principles enabling them to be employed in electronics engineering.
15	171CS2T01	Data Structures through C	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
16	171HS2L02	English Communication Skills Lab – II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L03	Applied Chemistry Lab				
18	171ES2L02	Engineering Workshop & IT Workshop				

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	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.
20	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.
21	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.
22	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.
23	171EC3T04	Random Variables and Stochastic Processes	✓			Students are able to acquire skills related to statistical knowledge enabling them to be employed for designing and manufacturing of to communication equipment
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	171EC3L01	Electronic Devices and Circuits Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits.
26	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.

27	171HS3A09	Professional Ethics and Human Values	✓			Students are able to acquire skills which help them in becoming a professional with ethical and human values.
28	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
29	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.
30	171EC4T06	Electromagnetic Waves and Transmission Lines	✓			Students are able to acquire skills related to electromagnetic waves enabling them to be employed for designing and manufacturing of communication systems.
31	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.
32	171EC4T08	Pulse and Digital Circuits	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits/networks related to digital systems enabling them to be employed for designing and manufacturing of electronic equipment.
33	171HS4T05	Management Science			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
34	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.
35	171HS4T08	IPR and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

36	171EC4L02	Electronic Circuit Analysis Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of electronic circuits.
37	171EC4L03	Analog Communications Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of communication circuits.
38	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
39	R1631041	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.
40	R1631042	Linear I C 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.
41	R1631043	Digital I C 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.
42	R1631044	Digital Communications	✓			Students are able to acquire skills related to digital modulation and demodulation techniques, and noise performance, enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
43	R1631045	Antenna and Wave Propagation	✓			imports knowledge related to communication concepts, radiation and reception of radio waves using antennas, which is helpful in being employable in the field of communications.
44	R1631046	Pulse and Digital Circuits Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of electronic circuits.
45	R1631047	Linear I C Applications Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with linear ics in the fields of instrumentation, communications etc.
46	R1631048	Digital I C Applications Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with digital ICs.
47	R1631049	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	R1632041	Micro Processors & Micro Controllers	✓			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.
49	R1632042	Micro Wave Engineering	✓			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.
50	R1632043	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.
51	R1632044	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.
52	R163204A	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.
53	R163204B	Data Mining	✓			Students are able to organize, understand and use the data in effective way and gain knowledge about warehouses which helps in integration of application systems
54	R163204C	Industrial 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

55	R163204E	Power Electronics	✓			Students are able to acquire skills related to the various power electronic devices which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
56	R163204D	Bio-Medical 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.
57	R163204F	Artificial Neural Networks	✓			gives knowledge related to ANN and applications, which leads to better employability in the field of machine learning.
58	R1632046	Micro Processors & Micro Controllers Lab		✓		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.
59	R1632047	VLSI Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in the field of VLSI.
60	R1632048	Digital Communications Lab		✓		Develops practical skills required for development of basic communication circuits.
61	R1632049	IPR & Patents		✓		It helps the graduates safe guard the IP and innovations at their place of work.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
62	RT41041	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.
63	RT41042	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.
64	RT41043	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.
65	RT41044	Computer Architecture & 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
66	RT41045	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.
67	RT41046	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 Ices
68	RT41047	Object Oriented Programming & O S	✓			Students are able to acquire skills related to design, programs using OOPs concepts enabling them to be employed for designing and development of efficient software

69	RT41048	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.
70	RT41049	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 systems
71	RT4104A	Optical Communication	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of optical communication systems enabling them to be employed for designing, manufacturing and implementation of optical communication systems.
72	RT4104B	Digital IC Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of digital ices enabling them to be employed for designing and manufacturing of digital Ices.
73	RT4104C	Speech Processing	✓			Students are able to acquire skills related to speech characteristics and speech processing algorithms enabling them to be employed for designing and manufacturing of speech processing systems.
74	RT4104D	Artificial Neural Network & Fuzzy Logic	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems
75	RT4104E	Network Security & 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
76	RT4104L	V L S I Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in the field of VLSI.
77	RT4104M	Microwave Engineering Lab		✓		Students are able to demonstrate technical skill of characterizing microwave devices, modelling and analysis of microwave circuits.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
78	RT42041	Cellular Mobile Communication	✓			Students are able to acquire skills related to cellular concepts enabling them to be employed for designing and manufacturing of mobile communication equipment.
79	RT42042	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.
80	RT42043A	Satellite Communication	✓			Students are able to acquire skills related to design, analyze and evaluate the performance of satellite communication systems
81	RT42043B	Mixed signal Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of mixed signal circuits enabling them to be employed for designing and manufacturing of mixed signal ices
82	RT42043C	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.
83	RT42043D	RF Circuit Design	✓			Students are able to acquire skills related to design, and evaluate the performance of RF circuits enabling them to be employed for designing and manufacturing of communication equipment.
84	RT42043E	Cloud Computing				
85	RT42044A	Wireless Sensors and Networks	✓			Students are able to acquire skills related to design, wireless adhoc networks enabling them to be employed for designing and implementation of WSNs

86	RT42044B	System on Chip	✓			Students are able to acquire skills related to integration of systems on single chips enabling them to be employed for designing and manufacturing of system on chips.
87	RT42044C	Low Power IC Design	✓			Students are able to acquire skills related to low power IC design, synthesize and evaluate the performance of VLSI circuits enabling them to be employed for designing and manufacturing of low power VLSI circuits and systems.
88	RT42044D	Bio-Medical Instrumentation				
89	RT42044E	EMI/EMC	✓			Students are able to acquire skills related to electromagnetic interference and compatibility enabling them to be employed for designing and manufacturing of electronic equipment, free from interference.
90	RT42045	Project & 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.
TOTAL		**90**	**61**	**22**	**3**	

A Kad
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	171HS1T01	English – I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics – I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171BS1T02	Mathematics – II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
4	171BS1T04	Applied Physics				
5	171ES1T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
6	171ES1T01	Computer Programming	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
7	171HS1L01	English Communication Skills Lab – I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L04	Applied Physics Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English – II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T06	Mathematics – III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
12	171HS2T02	Environmental Studies				
13	171BS2T05	Applied Chemistry				
14	171ES2T02	Engineering Mechanics	✓			Students are able to acquire skills related to principles of friction, kinetics, kinematics, resolving forces, trusses etc which forms the crux of design sciences.
15	171CS2T01	Data Structures through C	✓			Students are able to acquire technical skills related to demonstrate fundamental algorithmic problems that enable them to be employed as software developers
16	171HS2L02	English Communication Skills Lab – II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L03	Applied Chemistry Lab				
18	171ES2L02	Engineering Workshop & IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	171BS3T08	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by learning Mathematical logic , Graph Theory and Number Theory .
20	171ES3T23	Digital Logic Design				
21	171CS3T02	Statistics with R Programming	✓			Students are able to acquire skills related to R commands, Graphical representation of data sets, and visualization Techniques and also enabling them to be employed for Data analyst
22	171CS3T03	Object Oriented Programming Through C++	✓			Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
23	171HS3T04	Managerial Economics & Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
24	171CS3T04	Advanced Data Structures	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
25	171CS3L01	Object Oriented Programming Lab	✓			Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
26	171CS3L02	Advanced Data Structures Lab	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
27	171HS3A10	Employability Skills – I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
28	171HS3A09	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
29	171CS4T05	Software Engineering	✓			
30	171CS4T06	Formal Languages & Automata Theory		✓		Students are able to demonstrate technical skills related to regular, context-free and recursively enumerable languages
31	171CS4T07	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
32	171CS4T08	Database Management Systems	✓			Students are able to acquire skills related to SQL commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer
33	171CS4T09	Principles of Programming Languages		✓		Students are able to demonstrate programming and technical skills by comparing different programming paradigms.
34	171CS4T10	Computer Organization	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
35	171CS4L03	Java Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
36	171CS4L04	Database Management Systems Lab	✓			Students are able to acquire skills related to SQL commands, constraints, views, pl/SQL programming enabling them to be employed for backend developer
37	171HS4A11	Employability Skills – II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
38	171HS4A08	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
39	R1631051	Compiler Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of Different Language Compilers and enabling them to be employed for designing of Compilers.
40	R1631052	Unix Programming		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
41	R1631053	Object Oriented Analysis and Design using UML		✓		Students are able to acquire technical skills to acquired importance of modelling in the software development life cycle
42	R1631054	Database Management Systems	✓			Students are able to acquire skills related to SQL commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer
43	R1631055	Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities
44	R1631056	Unified Modeling Lab		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
45	R1631057	Operating System & Linux Programming Lab	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations using Linux programming which enables them to be employed for Hardware core job opportunities
46	R1631058	Database Management System Lab	✓			Students are able to acquire skills related to SQL commands, constraints, views, pl/SQL programming enabling them to be employed for backend developer
47	R1631049	Professional Ethics & Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.

VI SEMESTER

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

58	R163205F	Robotics				
59	R1632056	Network Programming Lab	✓			Students are able to acquire skills related to computer networks, functionalities of reference model layers and transmitting data between nodes enabling them to be employed for networking environment
60	R1632057	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
61	R1632058	Data Warehousing and Mining Lab	✓			Students are able to acquire technical skills to synthesize and pre-process the raw data, and apply different classification and prediction algorithms which enable them to be employed as Data Analyst.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
62	RT41051	Cryptography and Network Security		✓		Students are able to acquire technical skills to work with different cryptographic techniques, Symmetric and asymmetric cryptographic techniques, key management and security at network level.
63	RT41052	UML and Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
64	RT41053	Mobile Computing	✓			Students are able to acquire technical skills which helps them in developing mobile applications using J2EE and android which enable them to be employed as Mobile Application Developer.
65	RT41054	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
66	RT41055	Simulation Modeling		✓		Students are able to simulate the models for the purpose of optimum control by using software.
67	RT41056	Information Retrieval Systems		✓		Students are able to acquire technical skills related to information retrieval systems by using various retrieving techniques used in real time environment.
68	RT41057	Artificial Intelligence		✓		Students are able to demonstrate technical skills related to algorithms of AI to recognize, model, and solve problems in the analysis and design of information systems
69	RT41058	Multimedia Computing		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
70	RT41059	High Performance Computing		✓		Students are able to demonstrate technical skills related to the principles of multi-threading and distributed computing

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

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
80	RT42051	Distributed Systems		✓		Students are able to demonstrate technical skills of Interprocess Communication using java RMI, Distributed File Systems and analysis various distributed algorithms in projects.
81	RT42052	Management Science			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
82	RT42053A	Human Computer Interaction		✓		Students are able to demonstrate GUI components such as Menus, Forms, Dialog boxes and gain knowledge on various design paradigms, online documentation concepts, information retrieval & its presentation.
83	RT42053B	Advanced Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities
84	RT42053C	Mobile Adhoc & Sensor Networks		✓		Students are able to acquire technical skills to work on issues and solutions of various layers of Manets, namely MAC layer, Network Layer and Transport Layer in Manets and WSN.
85	RT42053D	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
86	RT42053E	Digital Image Processing	✓			Students are able to acquire skills related to digital image processing techniques, enabling them to be employed in the field of biomedical image processing field
87	RT42053F	Micro processers and Multi Core Systems		✓		Students are able to demonstrate technical skills and extensive knowledge of microprocessor-based systems

88	RT42043B	Embedded and Real Time Systems	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of mixed signal circuits enabling them to be employed for designing and manufacturing of mixed signal ICs.
89	RT42043C	Neural Networks & Soft Computing		✓		Students are able to acquire technical skills of Implement, evaluate and compare solutions by various neural networks and soft computing approaches for finding the optimal solutions.
90	RT42043D	Social Networks and the Semantic Web	✓			Students are able to acquire skills related to design, and evaluate the performance of RF circuits enabling them to be employed for designing and manufacturing of communication equipment.
91	RT42043E	Cloud Computing	✓			Students are able to acquire skills related to cloud computing and distributed computing enabling them to be employed for cloud services sector.
92	RT42055	Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		**92**	**42**	**38**	**4**	

Program Coordinator

Head of the Department

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

PROGRAM STRUCTURE
I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	171HS1T01	English – I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics – I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171BS1T02	Mathematics – II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
4	171BS1T04	Applied Physics				
5	171ES1T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
6	171ES1T01	Computer Programming	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.

7	171HS1L01	English Communication Skills Lab – I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L04	Applied Physics Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English – II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T06	Mathematics – III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
12	171HS2T02	Environmental Studies				
13	171BS2T05	Applied Chemistry				
14	171ES2T02	Engineering Mechanics	✓			Students are able to acquire skills related to principles of friction, kinetics, kinematics, resolving forces, trusses etc which forms the crux of design sciences.
15	171CS2T01	Data Structures through C				
16	171HS2L02	English Communication Skills Lab – II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L03	Applied Chemistry Lab				

18	171ES2L02	Engineering Workshop & IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	171CS3T02	Statistics with R Programming	✓			Students are able to acquire skills related to R commands, Graphical representation of data sets, and visualization Techniques and also enabling them to be employed for Data analyst.
20	171BS3T08	Mathematical Foundations of Computer Science				
21	171ES3T23	Digital Logic Design		✓		Students are able to demonstrate technical skills related to working with logic circuits, developing K-Maps and working with multiplexers.
22	171CS3T03	Object Oriented Programming through C++		✓		Students are able to acquire skills related to concepts of object-oriented programming and process of data file manipulations using C++, enabling them to be employed as software developers.
23	171HS3T04	Managerial Economics and Financial Analysis			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
24	171CS3T04	Advanced Data Structures	✓			Students are able to aquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
25	171HS3A10	Employability Skills	✓			This subject helps the students to accquire skills to be placed in a company as it will impart employability

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

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
29	171CS4T05	Software Engineering	✓			Students are able to aquire skills relates to software engineering,project estimation and management enabling them to aquire employed as software developer.
30	171CS4T07	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
31	171IT4T01	Language Processors		✓		Students are able to demonstrate technical skills realted to regular, context-free and recursively enumerable languages.
32	171CS4T08	Database Management Systems	✓			Students are able to acquire skills related to sql commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend develop.
33	171HS4T05	Management Science			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
34	171CS4T10	Computer Organization	✓			Students are nurtured with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
35	171CS4L03	Java Programming Lab	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
36	171HS4A11	Employability Skills	✓			This subject helps the students to accquire skills to be placed in a company as it will impart employability skills in students, which will

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

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
39	R1631121	Human Computer Interaction				
40	R1631052	Unix and Shell Programming		✓		skill Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations.
41	R1631122	Advanced Java Programming	✓			Students are able to acquire skills related to advanced Java programming enabling them to be employed as software developers.
42	R1631054	Database Management Systems	✓			Students are able to acquire skills related to sql commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer.
43	R1631055	Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities.
44	R1631123	Advanced Java Programming Lab	✓			Students are able to acquire skills related to advanced Java programming enabling them to be employed as software developers.
45	R1631124	Unix and Operating Systems Lab	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations using unix

						programming which enables them to be employed for Hardware core job opportunities
46	R1631125	Database Management System Lab	✓			Students are able to acquire skills related to sql commands, constraints, views, pl/sql programming enabling them to be employed for backend developer

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
47	R1631049	Professional Ethics and Human Values				
48	R1632051	Computer Networks	✓			Students are able to acquire skills related to computer networks,functionalities of reference model layers and transmitting data between nodes enabling them to be employed for networking environment.
49	R1632121	Data Mining	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classifiarion and prediction algorithms which enable them to be employed as Data Analyst.
50	R1632054	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and statergies.
51	R1632122	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
52	R163205A	Artificial Intelligence		✓		Students are able to demonstrate technical skills related to algorithms of AI to recognize, model, and solve problems in the analysis and design of information systems.
53	R1632123A	Social Networks and Semantic Web		✓		Students are able to acquire technical skills with the fundamentals of Semantic Web technologies.

54	R1632055D	Digital Signal Processing	✓			Students are able to acquire skills related to processing of digital signals enabling them to be employed for designing and manufacturing of electronic/ communication equipment.
55	R1632055E	Embedded Systems		✓		Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System.
56	R1632025D	Robotics	✓			Students are able to acquire skills to understand the concepts of robot kinematics, Dynamics and trajectory planning enabling them to be employed in robot manufacturing companies
57	R1632123B	Operations Research	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities.
58	RT32059	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
59	R1632125	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and statergies.
60	R1632126	Data Mining Lab	✓			Students are able to acquire technical skills to synthesize and preprocess the raw data, and apply different classifiarion and prediction algorithms which enable them to be employed as Data Analyst.
61	R1632049	IPR and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
62	RT41051	Cryptography and Network Security		✓		Students are able to acquire technical skills to work with different cryptographic techniques, Symmetric and asymmetric cryptographic techniques, key management and security at network level.
63	RT41052	UML and Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
64	RT41053	Mobile Computing	✓			Students are able to acquire technical skills which helps them in developing mobile applications using J2EE and android which enable them to be employed as Mobile Application Developer.
65	RT41121	Embedded and Real Time System				Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System.
66	RT41056	Information Retrieval Systems		✓		Students are able to acquire technical skills related to information retrieval systems by using various retrieving techniques used in real time environment.
67	RT41058	Multimedia Computing		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.

68	RT4105B	Hadoop and Big Data	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
69	RT4105C	Software Project Management		✓		Students are able to acquire skills to plan and manage projects at each stage of the software development life cycle (SDLC)
70	RT41122	Computer Vision		✓		Students are able to acquire technical skills related to image processing by using various tools related to computer vision.
71	RT4105E	Advanced Databases		✓		Students are able to demonstrate technical skills of Query Optimization, Reliability and Concurrency Control in projects.
72	RT4112L	UML and Design Patterns Lab		✓		Students are able to demonstrate technical skills.
73	RT4112M	Mobile Application Development Lab	✓			Students are able to gain skills related to how to develop a mobile application enabling them to be employed as app developer.
74	RT4112O	Software Engineering Lab		✓		Students are able to acquire technical skills by applying different software Engineering techniques and statergies.
75	RT4112N	Hadoop and BigData Lab	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analyics role.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
76	RT42053A	Human Computer Interaction		✓		Students are able to demonstrate GUI components such as Menus, Forms, Dialog boxes and gain knowledge on various design paradigms, online documentation concepts, information retrieval & its presentation.
77	RT42053B	Advanced Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities.
78	RT42053C	Mobile Adhoc & Sensor Networks		✓		Students are able to acquire technical skills to work on issues and solutions of various layers of Manets, namely MAC layer, Network Layer and Transport Layer in Manets and WSN.
79	RT42053D	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
80	RT42051	Distributed Systems		✓		Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities

81	RT42121	Mathematical Opimization (LP, Scheduling, Simulation, QT, Markov analysis, NLP, PERT CPM Network related problems etc)		✓		Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities
82	RT42052	Management Science			✓	Students are able to acquire skills to plan and manage projects at each stage of the software development life cycle (SDLC)
TOTAL		**82**	**31**	**33**	**5**	

Program coordinator

Head of the Department

Head of the Department
Department of IT
Aditya Engineering College

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	171HS1T01	English - I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics - I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171HS1T02	Environmental Studies				
4	171BS1T03	Engineering Chemistry				
5	171ES1T02	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.
6	171ES1T01	Computer Programming	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
7	171HS1L01	English Communication Skills Lab - I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L01	Engineering Chemistry Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English - II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T06	Mathematics - III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
12	171BS2T02	Mathematics - II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
13	171BS2T07	Engineering Physics				
14	171ES2T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
15	171ES2T07	Elements of Mechanical Engineering		✓		Students are able to demonstrate Problem solving skills to analyse thermodynamic relations of mechanical systems and performance characteristics of pumps and compressors
16	171HS2L02	English Communication Skills Lab - II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L02	Engineering Physics Lab				
18	171ES2L02	Engineering Workshop and IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	171BS3T09	Complex Variables		✓		Students are able to demonstrate problem solving skills by analytical properties of functions of complex variables , complex integration and conformal mapping
20	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
21	171ES3T17	General Geology	✓			Students are able to acquire skills related to various aspects of various structures enabling them to be employed as petroleum geologists.
22	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.
23	171PT3T01	Chemical Process Calculations		✓		Students are able to demonstrate Problem solving skills to analyze stylometric relations of chemicals and performance characteristics of it.
24	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
25	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.
26	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.
27	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.
28	171HS3A09	Professional Ethics And Human Values		✓		Students are able to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
29	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.
30	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.
31	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.
32	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.
33	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.
34	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.
35	171PT4L01	Momentum Transfer Lab		✓		Students are able to acquire skills related to various aspects of different fluid flow behavior and designing of fluid flow enabling them to be employed as production engineers.
36	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.
37	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.
38	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
39	R1631011	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.
40	R1631271	Process Dynamics And Control		✓		Students are able to demonstrate technical skill of characterizing different controllers, modelling and analysis of control valves.
41	R1631272	Process Instrumentation		✓		Students are able to demonstrate technical skill of characterizing different types of instruments, modelling and analysis of instruments.
42	R1631273	Well Logging And Formation Evaluation		✓		Students are able to demonstrate technical skill of characterizing different logging tools, modelling and analysis of formations.
43	R1631274	Drilling Technology		✓		Students are able to demonstrate technical skill of characterizing different drilling methods, modelling and analysis of well bore.
44	R1631275	Mathematical Methods Lab		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using Mathematical Methods (MATLAB Based) in various engineering disciplines.
45	R1631276	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.
46	R1631277	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.
47	R1631278	Industrial Visits	✓			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.
48	R1631279	Mini Project-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.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
49	R1632271	Well Completions Testing And Servicing		✓		Students are able to demonstrate technical skill of characterizing different wells , modelling and analysis of completions.
50	R1632272	Petroleum Production Engineering		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of production.
51	R1632273	Petroleum Reservoir Engineering-I		✓		Students are able to demonstrate technical skill of characterizing different rock properties , modelling and analysis of reservoir.
52	R1632274	Petroleum Refinery And Petrochemical Engineering		✓		Students are able to demonstrate technical skill of characterizing different heaters, treaters, distillation columns , modelling and analysis of refinery.
53	R163227A	Electronoic Instrument				
54	R163227C	Big Data Analytics				
55	R163227D	Alternative Energy Sources For Automobiles				
56	R163227E	Computational Fluid Dynamics				
57	R163227B	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.
58	R1632276	Drilling Simulation Lab	✓			Students are able to acquire skills related to various aspects of different well behaviour enabling them to be employed as well engineers.
59	R1632277	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.

60	R1632278	Petroleum Reservoir Engineering 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.
61	R1632279	Summer Internship (4-6 Weeks)		✓		Students are able to Analyze and find the solution for Present Problems in industry or a particular company
62	R1632280	Mini Project-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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
63	RT41271	Integrated Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
64	RT41272	Enhanced Oil Recovery Techniques		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
65	RT41273	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.
66	RT41274	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.
67	RT41016F	Green Fuel Technologies		✓		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.
68	RT41016A	Energy Management	✓			Students are able to acquire skills related to different energy resources enabling them to be employed for energy sector.
69	RT41016B	Fundamentals Of Petroleum Industry		✓		Students are able to demonstrate technical skill of characterizing different streams , modelling and analysis of operations.
70	RT41016C	Offshore Enginnering		✓		Students are able to demonstrate technical skill of characterizing different structures , modelling and analysis of offshore operations.
71	RT41016D	Pipeline Enginnering		✓		Students are able to demonstrate technical skill of characterizing different material behaviours , modelling and analysis of pipeline operations.
72	RT41279	Coal Bed Methane Engineering	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of CBM wells enabling them to be employed for designing and evaluation well for methane extraction.
73	RT4127L	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.

74	RT4127M	Petroleum Reservoir Engineering 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.
75	RT4127N	Presentation Of Sip Report	✓			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.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
76	RT42275	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.
77	RT42271	Petroleum Economics And Regulations And Policies			✓	Students are able to acquire skills related to different energy laws enabling them to be employed for energy sector.
78	RT42272A	Reservoir Modeling And Simulation	✓			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 wells.
79	RT42272B	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.
80	RT42272C	Lng-Processes And Transportation And Storage	✓			Students are able to acquire skills related to various aspects of different crude behaviour enabling them to be employed as process and transport engineers.
81	RT42273A	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 .
82	RT42273B	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures , modelling and analysis of production.
83	RT42273C	Fundamentals Of Multiphase Flow		✓		Students are able to demonstrate technical skill of characterizing different rock properties , modelling and analysis of flow behaviour.

84	RT42274A	Natural Gas Hydrates		✓		Students are able to demonstrate technical skill of characterizing different feeds from well , modelling and analysis of hydrates.
85	RT42274B	Advanced Natural Gas Engineering		✓		Students are able to demonstrate technical skill of characterizing different gas wells , modelling and analysis of fluid behaviours.
86	RT42274C	Petroleum Biotechnology		✓		Students are able to demonstrate technical skill of characterizing different microbes , modelling and analysis of fluid behaviours with microbes.
	Total		23	48	6	

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	171HS1T01	English – I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics – I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171HS1T02	Environmental Studies				
4	171BS1T03	Engineering Chemistry				
5	171ES1T02	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.
6	171ES1T01	Computer Programming	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
7	171HS1L01	English Communication Skills Lab – I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
8	171BS1L01	Engineering Chemistry Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English – II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T02	Mathematics - II		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
12	171BS2T06	Mathematics - III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
13	171BS2T07	Engineering Physics				
14	171ES2T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings by displaying from different angles of projection and adding dimensional information.
15	171ES2T08	Theory of Machines	✓			Students are able to acquire skills related to determining the parameters related to governors, flywheel, and gear trains enabling them to be employed for designing farm machinery equipment's.
16	171HS2L02	English Communication Skills Lab – II		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
17	171BS2L02	Engineering Physics Lab				
18	171ES2L02	Engineering Workshop & IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	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.
20	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.
21	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.
22	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.
23	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 farm and food processing equipment's enabling them to be employed as machinery designer.
24	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.

25	171AG3L01	Soil Science and Agronomy Field Lab		✓		Students are able to demonstrate technical skill of crop management practices adopted for increasing the crop productivity.
26	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.
27	171HS3A10	Employability Skills - I	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
28	171HS3A09	Professional Ethics 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
29	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
30	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.
31	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.
32	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.
33	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.
34	171AG4T08	Engineering Properties of Biological Materials and Food Quality	✓			Students are able to acquire skills related to designing various processing equipment's to ensure food quality and safety enabling them to be employed as a food engineer.

35	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.
36	171ES4L15	Machine Drawing and Computer Graphics Lab		✓		Students are able to demonstrate technical skill of Manual drawing of machine components and Basics of AUTOCAD.
37	171HS4A11	Employability Skills – II	✓			This subject helps the students to acquire skills to be placed in a company as it will impart employability skills in students, which will enable the students to feel comfortable to face several competitive examinations with confidence and competence.
38	171HS4A08	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
39	R1631351	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.
40	R1631352	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.
41	R1631353	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.
42	R1631354	Engineering Properties of Biological Materials and Food Quality	✓			Students are able to acquire skills related to designing various processing equipment's to ensure food quality and safety enabling them to be employed as a food engineer.
43	R1631355	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.
44	R1631356	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
45	R1631357	Advanced English Communications Skills Lab		✓		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.

46	R1631358	Field Operation and Maintenance of Tractors Lab - 1		✓		Students are able to demonstrate technical skill of periodical maintenance and trouble hooting of all systems like fuel system, lubrication system, cooling system and ignition system and remedial measures for above system of a tractor.
47	R1631029	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	R1632029	Professional Ethics & Human Values		✓		This subject help the students to demonstrate their skills as they inculcate human values to grow as responsible human beings with proper personality and helps them to maintain ethical conduct and discharge their professional duties.
49	R1632351	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.
50	R1632352	Farm Machinery and Equipment - I	✓			Students are able to acquire skills related to design of different farm implements enabling them to employ in farm machinery companies.
51	R1632353	Design of Soil Water Conservation and Farm Structures	✓			Students are able to acquire skills related to techniques in designing of soil water conservation and farm structures enabling them to be employed as farm structure designer or planner.
52	R1632354	Dairy and Food Engineering	✓			Students are able to acquire skills related to milk and food processing unit operations, thermal treatment techniques enabling them to employed as a dairy engineer.
53	R163235A	Operations Research		✓		Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.
54	R163235B	Digital Control Systems	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
55	R163235C	Robotics& Automation	✓			Students are able to acquire skills to understand the concepts of robot kinematics, Dynamics and trajectory planning

						enabling them to be employed in robot manufacturing industries.
56	R163235D	Industrial Pollution Control Engineering	✓			Students are able to acquire skills related to unit operations and unit processes involved in conversion of highly polluted water to potable standards, analysis and quantification of waste water treatment enabling them to employed in food industries.
57	R163235E	Finite Element Method	✓			Students are able to acquire skills related to analytical skills in solving static and dynamic heat transfer problems enabling them to be employed as a FEA engineer.
58	R163235F	Water Resources System Planning and Management	✓			Students are able to acquire skills related to planning of various water sources and their conservational principles in the society enabling them to be employed in civil industry
59	R1632356	Farm Machinery Lab - 1		✓		Students are able to demonstrate technical skill of determining parameters of different farm implements, calibration of seed cum fertilizer drills and sprayers.
60	R1632357	Field Operation and Maintenance of Tractors Lab - 2		✓		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.
61	R1632358	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.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
62	RT41353	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.
63	RT41354	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.
64	RT41355	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.
65	RT41356	Managerial economics & financial Analysis	✓			Students are able to acquire skills related to analysis of financial data enabling them to be employed as financial analyst.
66	RT41357	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.
67	RT41358	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.

68	RT41359	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.
69	RT41310	Computational Fluid Dynamics		✓		Students are able to acquire skills in analyzing the numerical methods related to fluid modelling.
70	RT4135L	Field operation and maintenance of tractors and farm machinery lab		✓		Students are able to demonstrate technical skills of periodical maintenance and troubleshooting of all systems like fuel system, lubrication system, cooling system and ignition system and remedial measures for above system.
71	RT4135M	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
72	RT42353A	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.
73	RT42353B	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.
74	RT42353C	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.
75	RT42354C	Principles of entrepreneurship			✓	Students are able to apply the knowledge of entrepreneurial skills, legal steps to start enterprises which enable them to become entrepreneurs.
76	RT42354A	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.
77	RT42354B	Hydraulic Devices and Control	✓			Students are able to acquire skills related to designing of hydraulic system and working of various hydraulic devices energy transfer in hydraulic actuators and motors enabling them to be employed in farm machinery companies.

78	RT42355	Project work	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in agriculture domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		**78**	**42**	**26**	**5**	

Program Coordinator

Head of the Department

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

PROGRAM STRUCTURE
I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	171HS1T01	English - I		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
2	171BS1T01	Mathematics - I		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using ordinary differential equations, system of linear equations in various engineering disciplines.
3	171HS1T02	Environmental Studies				
4	171BS1T03	Engineering Chemistry				
5	171ES1T02	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.
6	171ES1T01	Computer Programming	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions that enable them to be employed as a software developer.
7	171HS1L01	English Communication Skills Lab - I		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral form of language which is very much essential for the career growth

8	171BS1L01	Engineering Chemistry Lab				
9	171ES1L01	Computer Programming Lab	✓			Students are able to acquire programming skills related to Structured programming, arrays, functions, pointers, structures and unions enabling them to be employed as a software developer.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	171HS2T03	English - II		✓		Students are able to demonstrate communication skills express their thoughts fluently in both written as well as oral form of language which is very much essential for the career growth and enhances the language competency.
11	171BS2T02	Mathematics - II		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using partial differential equations and their applications in various engineering disciplines.
12	171BS2T06	Mathematics - III		✓		Students are able to demonstrate problem solving skills by evaluating improper and vector integrals applicable in various engineering disciplines.
13	171BS2T07	Engineering Physics				
14	171ES2T03	Engineering Drawing		✓		Students are able to acquire skills related to creating technical drawings digitally by making a model of the product by displaying from different angles and adding dimensional information.
15	171ES2T05	Basic Electrical and Electronics Engineering		✓		This subject helps the student to improve their 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.
16	171HS2L02	English Communication Skills 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	171BS2L02	Engineering Physics Lab				
18	171ES2L02	Engineering Workshop and IT Workshop		✓		Students are able to acquire skills related to system troubleshooting, implement MS office tools, develop LaTeX documents and to work with Linux commands. Students are able to acquire skills related to building various joints in different trades for several applications.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	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.
20	171MI3T02	Basic Mechanical Engineering for Mines		✓		**Skill Development**- 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.
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	171ES3T22	Material Engineering		✓		Materials engineering subject develops the 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.
23	171MI3T03	Mining Geology-I		✓		It helps to enhance student's skills by giving them a clear picture of 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 and finding

						the solution for the problems associated with it. The depth of knowledge in this subject students will be able to explore different mineral beds under the earth.
24	171ME3T01	Computer Aided Engineering Drawing Practice		✓		Computer Aided Drawing practice is designed to improve the skills of the students as they will able to draft packages and commands for computer aided drawing and modelling. Students will able gain the skills to draw complex drawing by using this tools.
25	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 help student to solve the Dc motor and transformers related problems at the mine site.
26	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 help the students to have practical exposure on the performance evaluation methods of various flow measuring equipment, hydraulic turbines and pumps.
27	171HS3A09	Professional Ethics and Human Values		✓		Students are able to acquire skills which help them in becoming a professional with ethical and human values.
28	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
29	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.
30	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.
31	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.
32	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.

33	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.
34	171MI4T08	Fundamentals Of Rock Mechanics		✓		This subject demonstrate the technical skills of student by making them learn basic principles of stress and strain, properties of rocks and their determination and also make them aware of failure theories of rock .
35	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 in buying and selling of minerals.
36	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.
37	171HS4A08	Intellectual Property Rights and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
38	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
39	R1631261	Underground 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.
40	R1631262	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.
41	R1631263	Electrical Equipment in Mines		✓		This subject helps the student to demonstrate their technical skills as it helps the students to understand standards of lighting in different working areas, AC and Dc motors and its maintenance, earthling methods and applicability. This subject will guide the students of mining to be self sufficient for the electrical related problems in mines.
42	R1631264	Mine Surveying– II		✓		This subject helps the student to demonstrate their technical skills by understanding the correlation and stope survey methods and also the limitations of photogrammetry and modern survey methods. This subject designed to make the students expert in the surveying methods so that they can become a surveyor in mines and different mining related fields.
43	R1631265	Mining Machinery & Mechanization – I				This subject helps the student to demonstrate their technical skills as they will able to know surface and pit bottom layouts, various coal face machinery. It also help to upgrade the skills of students as they

				✓		will able to know the design and construction details of excavating & transporting equipment's used in surface mines.
44	R1631266	Advanced English Communication Skills Lab		✓		Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much essential for career growth.
45	R1631267	Mine Surveying Lab		✓		This subject helps the student to demonstrated their technical skills as they will understand different equipment and compare accuracy levels and to study several experiments and conversant with it. This subject thorough knowledge will helps the mining students to placed as a surveyor in different mines.
46	R1631268	Mechanical Engineering Lab		✓		This subject demonstrates their technical skills by making them able to verify the principles studied in thermal and engineering design courses by performing experiments in the laboratory.
47	R1631269	Mine Field visit(Mandatory)	✓			This subject makes the student demonstrate skill as well as make them ready for mining field job as student will be directly exposed to the real condition of operation an opencast and underground mines.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	R1632261	Mine Systems Engineering		✓		Mine system engineering helps the student to enhance technical skills as they expose the students to advanced optimization procedures to be adapted in mining.
49	R1632262	Mineral Engineering and Fuel 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 a different type of fuel technology. This subject helps the mining student to get placed in different process-related plants.
50	R1632263	Mine Environmental 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.
51	R1632264	Mining Machinery & Mechanization – II		✓		This subject demonstrates technical skills as they will be aware of winding engines and other winding accessories, and various coal face machinery, they will also get to understand the design and construction details of excavating & transporting equipment used in surface mines.
52	R1632035C	Industrial Robotics	✓			Industrial robotics is quite a new subject in the era it will helpful to the student to demonstrate their technical skill as students practice applying their knowledge of mathematics, science, and Engineering and to expand this knowledge into the vast area of robotics and will be exposed to the

						concepts of robot kinematics, Dynamics, Trajectory planning.
53	R1632035A	Entrepreneurship			✓	This subject helps the students to demonstrate technical skills as they will know different types of equipment and its management including preventive maintenance measures to be adopted, They will also get to know the cause of the equipment failures, and reliability models and hazard models will help in understanding the machine performance and productivity in any machine operation.
54	R1632265A	Quality and Reliability Engineering		✓		This subject helps the students to demonstrate technical skills as they will know different types of equipment and its management including preventive maintenance measures to be adopted, They will also get to know the cause of the equipment failures, and reliability models and hazard models will help in understanding the machine performance and productivity in any machine operation.
55	R1632015D	Waste Water Management		✓		This subject demonstrate technical skills of students by making them know planning and the design of waste water collection ,conveyance and treatment systems for a community/town/city, also helps them to knowledge of characterization of waste water generated in a community.
56	R1632265B	Rock Excavation Engineering		✓		This subject demonstrate technical skills of the students by making them know the estimation of rock mass strength, its behaviour during excavation, types of drilling and blasting methods depend on the rock mass characterization
57	R163226C	Mine Safety Engineering		✓		This subject helps students to demonstrate technical skills by making them aware of the level

						of risk associated with mining, risk assessment and management.
58	R1632266	Mineral Engineering 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.
59	R1632267	Environmental Engineering Lab		✓		This subject demonstrate students to improve technical skills as students will familiar with detection of different gases using deferent methods detectors and multi gas detector to find flammable index of coal dust and understand the rescue and recovery operations using different rescue apparatus.
60	R1632268	Mine Planning & Design Lab		✓		This subject demonstrate technical skills of students by letting them know creation and utilization of data base for various studies and applications of the same for planning & design of mining projects.
61	R1632268	Industrial Training		✓		This subject demonstrate technical skills of students by letting them know creation and utilization of data base for various studies and applications of the same for planning & design of mining projects.

VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
62	RT41261	Mine Economics		✓		This subject demonstrate technical skills to estimation and valuation of mineral deposits, Study of project appraisal and Study of finance and accounting which helps student to get their skill enhanced and get opportunity to employ as well.
63	RT41262	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.
64	RT41263	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.
65	RT41264	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.
66	RT41265	Industrial 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.
67	RT41266	Environmental Impact Assessment		✓		This subject makes the students to demonstrate their technical skills as they will know the hazardous effect of various pollution that is happening because of mining activities. This course helps the student to enable their technical skills by making them socially responsible person.
68	RT4126L	Computer Applications 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.
69	RT4126M	Rock Mechanics & Ground Control 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.
70	RT4126N	Short Survey Camp (One Week)		✓		This helps the student to demonstrate their technical skills as they will visit a place and perform independent survey so that they can become a surveyor in a mining location.

VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
71	RT42031	Production Planning and Control	✓			This subject helps the student to demonstrate competency in the concepts of production and service systems, it also helps to know the principles and techniques in the design, planning and control of these systems to optimise and make best use of resources in achieving their objective which helps them to enable them a good entrepreneur.
72	RT42262A	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.
73	RT42262B	Mine Construction		✓		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.
74	RT42262C	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.
75	RT42263A	Planning of Under Ground Metal Mining Project		✓		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.
76	RT42263B	Planning of Under Ground Coal Mining Project		✓		This subject helps the students to understand different methods of coal mining, advantages and disadvantages which is analysed the logical application of choice of mining methods can be evaluated in the mines.
77	RT42263C	Planning of Surface Mining Projects		✓		It helps the student to demonstrate their technical 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. Possessing good knowledge of this subject helps them to placed as a surface mining planner.
78	RT42264C	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.
79	RT42265	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		**79**	**15**	**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	172TE1T01	Optimization Techniques & Applications		✓		Students are able to acquire skills in solving single variable and multi - variable nonlinear unconstrained optimization
2	172TE1T02	Advanced Thermodynamics	✓			Students are able to acquire skills related to the estimation of properties of real gases, combustion of gas mixtures and compare vapor and gas power cycles. enabling them to be employed in thermal power plants as a thermodynamics engineer.
3	172TE1T03	Advanced Heat & Mass 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 companies.
4	172TE1T04	Advanced Fluid Mechanics	✓			Students are able to acquire skills related to the potential flow equations to basic flows and enabling them to be employed as a fluid engineer.
5	172TE1E01	Gas Dynamics	✓			Students are able to acquire skills related to the fluid dynamic and thermodynamic aspects of high-speed flows and enabling them to be employed in thermal power plants.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
6	172TE1E02	Refrigeration & Cryogenics	✓			Students are able to acquire skills related to the effect of various refrigerants on the environment and wide application of cryogenics in science and technology enabling them to be employed in refrigeration industries.
7	172TE1E03	Renewable Energy Technologies	✓			Students are able to acquire skills related to the various renewable technologies, solar energy conversion processes, direct energy conversion processes, bio energy conversion processes and wind energy conversion processes enabling them to be employed in energy-based companies.
8	172TE1E04	Theory and Technologies 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
9	172TE1E05	Advanced IC Engines	✓			Students are able to acquire skills related to the engine performance by using turbo charging and super charging and enabling them to be employed in automotive industries.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	172TE1E06	Solar Energy Technology	✓			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.
11	172TE1E07	Turbo Machines	✓			Students are able to acquire skills related to the performance analysis of turbo machines and enabling them to be employed in gas power plants
12	172TE1E08	Alternative Fuels Technologies		✓		Students are able to acquire skills in analyzing potential alternative liquid and potential gaseous fuels.
13	172TE1L01	Thermal Engineering Lab	✓			Students are able to acquire skills to enhance the knowledge about IC Engines and calculating COP and enabling them to be employed in automotive industries.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
14	172TE2T05	Fuels, Combustion & Environment	✓			Students are able to acquire skills in analyzing various fuels and the effect of combustion of fuels on environment enabling them to be employed in automotive, aerospace sectors.
15	172TE2T06	Energy 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 Emery sector.
16	172TE2T08	Finite Element Method	✓			Students are able to acquire skills related to analytical skills in solving static and dynamic heat transfer problems enabling them to be employed as a FEA engineer.
17	172TE2T07	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
18	172TE2E09	Materials Technology	✓			Students are able to acquire skills in analyzing the mechanical behavior of advanced materials and enabling them to be employed as a materials engineer.
19	172TE2E10	Convective Heat Transfer		✓		Students are able to acquire skills related to the basics of convective heat transfer, free and forced convection in heat transfer.
20	172TE2E11	Thermal and Nuclear Power Plants	✓			Students are able to acquire skills related to the principles of combustion and analysis of power cycles and enabling them to be employed in thermal and nuclear power plants.
21	172TE2E12	Advanced Automobile Engineering	✓			Students are able to acquire skills related to the concepts of transmission system, various braking systems and suspension systems enabling them to be employed in automotive sector.
22	172TE2E13	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.
23	172TE2E14	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
24	172TE2E15	Jet Propulsion and Rocketry	✓			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.
25	172TE2E16	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	172TE2L02	Thermal Systems Design Lab		✓		Students are able to acquire skills in analyzing the performance of various thermal equipment's.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	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.
28	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.
29	---	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.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
30	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.
31	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		**31**	**27**	**4**	**0**	

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	172PD1T01	Electrical Machine Modeling & Analysis	✓			Students are able to acquire skills related to machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be employed for controlling, designing and manufacturing in power station, wind turbines, etc
2	172PD1T02	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	172PD1T03	Power Electronic Control of DC 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.
4	172PD1T04	Flexible AC Transmission Systems	✓			Students are able to acquire skills related to mitigating some of the potential transmission of electrical power challenges that enables them to get employed in power transmission company.
5	172PD1E01	Modern Control Theory		✓		This subject ensures that the students develop strategic skills to improving productivity and enhancing the best practices of the company.
6	172PD1E02	Power Quality	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to et employed in industries focusing in saving money on electricity bill and carbon footprint.
7	172PD1E03	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.
8	172PD1E04	Energy Auditing, Conservation & Management			✓	the course focuses on the loss and profit studies and other company maintenance actives, creates the intrust among the students to have own company.

9	172PD1E05	Artificial Intelligence Techniques	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of ANN enabling them to be employed for designing artificial intelligence systems
10	172PD1E06	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.
11	172PD1L01	Simulation 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

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	172PD2T05	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.
13	172PD2T06	Power Electronics Control of AC Drives	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor-based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.
14	172PD2T07	Digital Controllers		✓		This subject ensûres that the students develop strategic methods to improving productivity and enhancing the best practices of the company.
15	172PD2T08	Custom Power Devices				
16	172PD2E07	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.
17	172PD2E08	Reactive Power Compensation & Management	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to et employed in industries focusing in saving money on electricity bill and carbon footprint.
18	172PD2E09	Electrical Distribution System	✓			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.
19	172PD2E10	Smart Grid Technologies	✓			Students are able to acquire skills related to smart grid technologies and its challenges imposed by the growth in non-dispatchable renewable generation on electric grids that enables them to get employed in power company.
20	172PD2E11	Special 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

21	172PD2E12	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.
22	172PD2L02	Power Converters & Drives Lab	✓			Students are able to acquire skills related to the various power electronic drives which enables them to get employed in semiconductor based industries such as in communications, computing, health care, military systems, transportation, clean energy, etc.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
23	K4301	Comprehensive Viva-Voce				
24	K4302	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.
25	K4303	Project Work Part – I				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
26	L4301	Seminar – II				
27	L4302	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		27	18	4	1	

Program Coordinator

Head of the Department

Head of the Department
Dept: Of Electrical & Electronics Engineering
Aditya Engineering College (A)

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	172CO1T01	Advanced Data Structures & Algorithm Analysis	✓			Students are able to gain knowledge on advanced data structures enabling them to become efficient coders in software development
2	172CO1T02	Database Management System	✓			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
3	172CO1T03	Computer Organization & Architecture	✓			Students are able to acquire knowledge on Computer working and its architecture and low level operations of processors and other internal parts of a computer
4	172CO1T04	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by implementing mathematical logic, number theory and graph theory.
5	172CO1T05	Computer Networks	✓			
6	172CO1E01	Software Engineering	✓			Students are able to acquire skills relates to software engineering, project estimation and management enabling them to acquire employed as software developer.
7	172CO1E02	Advanced Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities
8	172CO1E03	Compiler Design	✓			Students can get knowledge on designing compilers and assemblers to enable them work with different integrated environments

9	172CO1E04	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 and its presentation.
10	172CO1L01	Advanced Data Structures & Database Management Systems Lab		✓		Students are able to demonstrate knowledge on advanced data structures and database management.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
11	172CO2T06	Cyber Security		✓		Students can be able to protect systems, networks, devices and data from cyber attacks by knowing about different security approaches and methods
12	172CO2T07	Data Ware Housing & Data Mining		✓		Students are able to organize, understand and use the data in effective way and gain knowledge about warehouses which helps in integration of application systems
13	172CO2T08	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.
14	172CO2T09	Advanced Unix Programming	✓			Students are able to gain deep knowledge of UNIX environment, advanced commands, kernel and shell programming
15	172CO2E05	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
16	172CO2E06	Digital Image Processing		✓		Students are able to acquire technical skills related to image processing by using various tools related to computer vision.
17	172CO2E07	Mobile Computing				
18	172CO2E08	Cloud Computing	✓			Students are able to acquire skills related to Cloud computing and distributed computing enabling them to be employed for cloud services sector
19	172CO2E09	Internet of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
20	172CO2E10	Bio Informatics		✓		Students are able to gain knowledge on forensic analysis, gene therapy and molecular medicine
21	172CO2L02	Advanced Unix Programming and Hadoop & Bigdata Lab	✓			Students are able to gain hands on experience of UNIX environment, advanced commands, kernel and shell along with big data and usage of Hadoop software

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
22	172CO3C01	Comprehensive Viva-Voce	✓			
23	172CO3R01	Seminar - I	✓			

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
24	172CO4R02	Seminar - II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in computer science and engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
25	172C04P01	Project Work Part- - II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in computer science and engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		**25**	**14**	**7**	**0**	

Program Coordinator

Head of the Department

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

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	172EM1T01	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.
2	172VD1T01	VLSI Technology & Design	✓			Students are able to acquire skills related to design, and processing technology, enabling them to be employed for designing and manufacturing of VLSI CHIPS
3	172VD1T02	CMOS Analog IC Design	✓			Students are able to acquire skills related to design of analogy signal processing circuits like pumps, enabling them to be employed for designing of VLSI analogy ICs.
4	172VD1T03	CMOS Digital IC Design	✓			Students are able to acquire skills related to design of digital Ices, like processors, and other programmable devices enabling them to be employed for designing of VLSI digital Ics.
5	172EM1E01	Cyber Security				
6	172VD1E01	Digital Design using HDL	✓			Students are able to acquire skills related to design and implementation of CPLDs and FPGAs using HDLs like Verilog, enabling them to be employed for designing of digital systems.
7	172CO1E02	Advanced Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities
8	172EM1E03	Soft Computing Techniques	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of soft computing techniques enabling them to be employed for designing and manufacturing of efficient embedded systems.

9	172VD1E02	CPLD / FPGA Architectures & Applications	✓			Students are able to acquire skills related to design and implementation of CPLDs and FPGAs using HDLs like Verilog, enabling them to be employed for designing of digital systems.
10	172VD1E03	Hardware Software Co - Design	✓			Students are able to acquire skills related to design and development of hardware and software components of an embedded system enabling them to be employed for designing and manufacturing of embedded systems.
11	172EM1E07	Advanced Computer Architecture				
12	172VD1L01	Front End VLSI Design - Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of digital Systems using front end tools.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
13	172VD2T04	CMOS Mixed Signal Circuit Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of mixed signal circuits enabling them to be employed for designing and manufacturing of mixed signal systems.
14	172VD2T05	Embedded System Design				
15	172VD2T06	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.
16	172VD2T07	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.
17	172VD2E04	CAD for VLSI	✓			Students are able to acquire skills related to design and development of ices using CAD tools, algorithms used in CAD tools , enabling them to be employed for designing of CAD tools.
18	172EM2T06	DSP Processors & Architectures	✓			Students are able to acquire skills related to design, implement and evaluate the performance of DSP Processors, enabling them to be employed for designing and manufacturing of communication/signal processing applications.
19	172VD2E05	VLSI Signal Processing	✓			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.
20	172EM2E08	System on Chip Design	✓			Students are able to acquire skills related to integration of systems on single chips enabling them to be employed for designing and manufacturing of system on chips.

21	172VD2E06	Optimization Techniques in VLSI Design	✓			Students are able to acquire skills related to design and optimise various parameters of ices, enabling them to be employed for designing and manufacturing of ICs.
22	172VD2E07	Semiconductor Memory Design and Testing	✓			Students are able to acquire skills related to design and development of ices involving memory and implementation of testing the memory, enabling them to be employed for designing and manufacturing of ICs.
23	172VD2L02	Back end VLSI Design Laboratory		✓		Students are able to demonstrate technical skill of modelling and analysis of digital Systems using back end tools.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
24	172VD3C01	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.
25	172VD3R01	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.
26		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
27	172VD4R02	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.
28	172VD4P01	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	**28**	**23**	**2**	**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	172SE1T01	Advanced Mathematics				Students are able to demonstrate problem solving skills in linear and Non-linear solution of any type of the civil engineering structures.
2	172SE1T02	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.
3	172SE1T03	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.
4	172SE1T04	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.
5	172SE1E01	Experimental Stress Analysis	✓			Students are able to acquire skills related to various aspects of convenient and accurate methods of analysis enabling them to be employed in constructional industry.
6	172SE1E02	Sub Structure Design				
7	172SE1E03	Structural Optimization	✓			Students are able to demonstrate analytical skills to solve practical problems enables designers to achieve a careful balance between strength and affordability
8	172SE1E04	Repair and Rehabilitation of Structures	✓			Students are able to acquire skills related to detroitaton of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other detroited structures enabling them to be employed as engineers in related field.
9	172SE1E05	Analysis and Design of Tall Building	✓			Students are able to acquire skills related to new technologies for vertical transportation and high socio economic levels of urban growth have made way to tall building enabling them to be employed in design and construction of tall buildings.
10	172SE1E06	Plastic Analysis and Design	✓			Students are able to acquire skills related to production of lighter and more slender structural membersenabling them to be employed in constructional industry.
11	172SE1L01	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	172SE2T05	Finite Element Method		✓		Students are able to demonstrate problem solving skills to analyze structural related problems and developing software development programs
13	172SE2T06	Earthquake Resistant Design	✓			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.
14	172SE2T07	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	172SE2T08	Theory of Plates & Shells				
16	172SE2E07	Prestressed Concrete	✓			Students are able to acquire skills related to bridge designing and metro constructions enabling them to be employed in structural field of constructional activities.
17	172SE2E08	Mechanics of Composite Materials				Students are able to acquire skills related to various aspects of high strength, low cost, high chemical resistance and good insulating property materials. enabling them to be employed as structural engineers.
18	172SE2E09	Fracture Mechanics				
19	172SE2E10	Industrial Structures	✓			Students are able to acquire skills related to structural members mainly for steel to identify the strength parameter like durability and flexibility enabling them to be employed in constructional field.
20	172SE2E11	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.
21	172SE2E12	Earth Retaining Structures				
22	172SE2L02	CAD Laboratory		✓		Students are able to demonstrate technical skill of reducing manual drawing and related problems in designing and planning of constructional activities.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
23	172SE3C01	Comprehensive Viva-Voce				
24	172SE3R01	Seminar -I				
25	-----	Project Work Part - I				

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
26	172SE4R02	Seminar -II				
27	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		**27**	**15**	**5**		

Program Coordinator

Head of the Department

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

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	172PE1T01	Advanced Numerical Methods & 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.
2	172PE1T02	Transportation of Oil & Gas		✓		Students are able to demonstrate technical skill of characterizing different drilling and production methods, modelling and analysis of subsurface exploration.
3	172PE1T03	Advanced EOR Techniques		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
4	172PE1T04	Project Management			✓	Students are able to apply the knowledge of Project management enabling them to become an entrepreneur in any domain of their choice
5	172PE1T05	**PE Stream:** Offshore Drilling		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
6	172PE1T06	**Non-PE Stream:** A. Fundamentals of Petroleum Geology & Reservoir Engineering		✓		Students are able to demonstrate technical skill of characterizing different offshore structures, modelling and analysis of drilling.
7	172PE1T07	**PE Stream:** 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 .
8	172PE1T08	**Non-PE Stream:** Petroleum Drilling & Production Engineering		✓		Students are able to demonstrate technical skill of characterizing different drilling and production methods, modelling and analysis of subsurface exploration.

9	172PE1L01	Advanced Numerical Methods & Applied Statistics (MATLAB Based) Lab		✓		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.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	172PE2T09	Advanced Natural Gas Engineering				
11	172PE2T10	Artificial Lift Techniques				
12	172PE2T11	Operational Aspects of Well Testing				
13	172PE2T12	Integrated Reservoir Management				
14	172PE2E01	Practical Reservoir Modeling & 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.
15	172PE2E02	Optimization of Oil & Gas Production		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of production.
16	172PE2E03	Flow Assurance		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of flow in wells.
17	172PE2E04	Process Safety & Environmental Aspects 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.
18	172PE2E05	Deep Water Technologies		✓		Students are able to demonstrate technical skill of characterizing different technologies , modelling and analysis of Deepwater beds .
19	172PE2E06	Characterization of Petroleum Oils		✓		Students are able to demonstrate technical skill of characterizing different oils , modelling and analysis of treatment .

20	172PE2L02	Reservoir Simulation Lab		✓		-Students are able to acquire skills related to various aspects of different reservoirs enabling them to be employed as Reservoir Engineers.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
21	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.
22	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
23	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.
24	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	5	13	2	

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	172SO1T01	Software Requirements And Estimation		✓		Students will be able to acquire technical skills to plan and manage projects at each stage of the software development life cycle (SDLC)
2	172SO1T02	Software Metrics And Reuse				
3	172SO1T03	Software Project And Process Management		✓		Students will be able to acquire technical skills to plan and manage projects at each stage of the software development life cycle (SDLC)
4	172SO1T04	Big Data Analytics	✓			Students are able to acquire technical skills to work with data on cloud using PIG and HIVE tools which enable them to be employed as Big Data Analyst.
5	172SO1E01	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
6	172SO1E02	Middleware Technologies	✓			Students will be able to acquire technical skills to implement the distributed architecture in building real time applications.
7	172SO1E03	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.
8	172SO1E04	E-Commerce		✓		Students are able to acquire technical skills to identify differnet categories and trends in e-commerce applications, understanding

						technologies used behind e-commerce, pro's and con's of e-commerce applications
9	172SO1E05	Scripting Languages	✓			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	172SO1E06	ERP and Supply Chain Management		✓		Students will be able to acquire technical skills to understand supply chain and enterprise resource management is helpful in developing software applications.
11	172SO1L01	Web Technologies and Big Data Analytics Lab				

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
12	172SO2T05	Software Architecture And Design Patterns		✓		Students will be able to acquire technical skills to design patterns for the project being developed using UML.
13	172SO2T06	Software Quality Assurance And Testing		✓		Students will be able to acquire technical skills to identify and implement differnet testing strategies.
14	172CO2T06	Cyber Security		✓		Students will be able to acquire technical skills to identify and prevent different types of attacks performed by the intruder to gain access over a network.
15	172SO2T07	Service Oriented Architectures		✓		Students will be able to acquire technical skills to work with web services related to service-oriented architecture.
16	172SO2E07	Secure Software Engineering		✓		Students will be able to acquire technical skills towork on project development by identifying the analyzing different phases in project development like requirements, analysis, design, coding, testing and deployment.
17	172SO2E08	Systems Engineering		✓		Studets will be able to acquire technical skills to Interpret the usage of Management Information Security in organizations and the constituents of the Management Information Security.
18	172SO2E09	Soft Computing	✓			Students will be able to acquire technical skills to analyze the various neural network algorithms and to develop solutions for soft computing problems using neural networks which enable them to be employed as software developer.

19	172SO2E10	User Interface Design		✓		Students are able to acquire technocal skills in identifying the design issues and constraints while dsigning the GUI for an application.
20	172CO2E08	Cloud Computing	✓			Students will be able to acquire technical skills to develop the cloud infrastructure needed to establish a colud system for real time application development which enable them to be employed as Cloud Engineer.
21	172SO2L02	Software Testing and Design Patterns Lab		✓		Students will be able to acquire techncial 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
22	171SO3C01	Comprehensive Viva-Voce				
23	171SO3R01	Seminar - I				
24	171SO3P01	Project Work Part - I	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in eletronics and communication domain through the aquired technical, cognitive, communication and creative skills to address societal needs.

IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
25	171SO4R02	Seminar - II		✓		
26	171SO4P02	Project Work Part- - II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in eletronics and communication domain through the aquired technical, cognitive, communication and creative skills to address societal needs.
	TOTAL	**26**	**10**	**13**		

Program Coordinator

Head of the Department

Head of the Department
Department of IT
Aditya Engineering College

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	172EM1T01	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.
2	172EM1T02	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.
3	172EM1T03	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.
4	172EM1T04	Embedded - C	✓			Students are able to acquire skills related to design, program and evaluate the performance of embedded systems enabling them to be employed for designing and manufacturing of modern electronic equipment.
5	172EM1E01	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
6	172EM1E02	Sensors and Actuators	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of sensors and actuators enabling them to be employed for designing and manufacturing of electrical/ electronic systems.
7	172CO1E02	Advanced Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and understand the utilization of Input &output and memory operations which enables them to be employed for Hardware core side job opportunities

8	172EM1E03	Soft Computing Techniques				
9	172EM1E04	Embedded Computing	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of embedded computing techniques enabling them to be employed for designing and manufacturing of smart systems
10	172EM1E05	Device Drivers	✓			Students are able to acquire skills related to design, analyse and evaluate the performance of device drivers for various embedded systems enabling them to be employed for designing and manufacturing of embedded systems built around various devices.
11	172EM1E06	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.
12	172EM1E07	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.
13	172EM1L01	Embedded Systems Lab		✓		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.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
14	172EM2T05	Hardware Software Co - Design	✓			Students are able to acquire skills related to design and development of hardware and software components of an embedded system enabling them to be employed for designing and manufacturing of embedded systems.
15	172EM2T06	DSP Processors &Architectures	✓			Students are able to acquire skills related to design, implement and evaluate the performance of DSP Processors, enabling them to be employed for designing and manufacturing of communication/signal processing applications.
16	172EM2T07	Embedded Networking	✓			Students are able to acquire skills related to design, developed and evaluate the performance of embedded networking protocols enabling them to be employed for designing and manufacturing networked ES.
17	172EM2T08	CPLD / FPGA Architectures & Applications	✓			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.
18	172EM2E08	System on Chip Design	✓			Students are able to acquire skills related to integration of systems on single chips enabling them to be employed for designing and manufacturing of system on chips.
19	172VD2T04	CMOS Mixed Signal Circuit Design				
20	172EM2E09	MEMS Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of micro electro mechanical systems

						enabling them to be employed for designing and manufacturing of electronic systems.
21	172EM2E10	Internet Protocols	✓			Students are able to acquire skills related to design, analyse and evaluate the performance of various internet protocols enabling them to be employed for establishing networks of digital systems
22	172VD2T07	Design For Testability				
23	172EM2E11	Wireless LANs and PANs	✓			Students are able to acquire skills related to design, developed and evaluate the performance of various wireless n/ws enabling them to be employed for designing , manufacturing, and establishing wireless networks.
24	172EM2E12	Multimedia & Signal Coding	✓			Students are able to acquire skills related to design, developed and evaluate the performance of multi-media devices enabling them to be employed for designing and manufacturing of communication and display devices
25	172EM2L02	Embedded Real Time Systems Lab		✓		Improves skills related to RTES, which can perform satisfactorily under real time requirements.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
26	172EM3C01	Comprehensive Viva-Voce	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
27	172EM3R01	Seminar – I	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
28		Project Work Part – I	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication 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
29		Seminar – II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
30	172EM4P01	Project Work Part - II	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
TOTAL		30	25	2	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	174MB1T01	Principles of Management		✓		The students are able to demonstrate managerial skills by using the motivational theories ,leadership theories and organizational structure principles.
2	174MB1T02	Managerial Economics		✓		The students are able to demonstrate Problem solving skills by analysing different micro economic factors affecting business
3	174MB1T03	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	174MB1T04	Managerial Communication & Soft Skills		✓		The students are able to demonstrate Business Communication skills to amaze the mistakes in Body language ,formal written communication in the organizations.
5	174MB1T05	Business		✓		The students are able to demonstrate

		Environment				Business environment skills by characterising The SWOT of different companies.
6	174MB1T06	Quantitative Analysis for Business Decisions				
7	174MB1L01	IT - LAB		✓		The students are able to demonstrate Technical skills by Modelling of Structural query

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	174MB2T07	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	174MB2T08	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	174MB2T09	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	174MB2T10	Production & 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	174MB2T11	Business Research Methods		✓		The students are able to demonstrate Research skills to analyse functional area problems in Industries
6	174MB2T12	Organizational Behavior		✓		The students are able to demonstrate managerial skills of managing humans behaviour at work place
7	174MB2P01	Minor Project		✓		Student are able to identify and analyse the problems in industry and try to find solution.

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

		Management				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

						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	✓			The students are able to acquire skills related to Customer

IV SEMESTER

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	174SY3E04	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	✓			The students are able to acquire skills related to Data mining, connecting in BI systems, which enable them to be employed in Software companies.
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 Modeling of cyber laws and security.
Total		**52**	**34**	**12**	**2**	

Program Coordinator

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

PROGRAM STRUCTURE

I SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	175IM1T01	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	175IM1T02	Business Mathematics & Statistics		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using statical equations fundamentals mathematics used in various decisions of business.
3	175IM1T03	Fundamentals of Business Organization				
4	175IM1T04	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	175IM1T05	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	175IM2T06	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	175IM2T07	Business Environment		✓		The students are able to demonstrate Business environment skills by characterizing The SWOT of different companies.
3	175IM2T08	Managerial Economics		✓		Core course Imparts knowledge on micro economics ,Macro economics & understands different market structures

						,pricing methods.
4	175IM2T09	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	175IM2T10	Organizational Communications		✓		The students are able to demonstrate Business Communication skills to analyze the mistakes in Body language ,formal written communication in the organizations.

III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	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	16IM601	Operations Research		✓		The students are able to demonstrate problem solving skills by Modelling Linear programming, Dynamic Programming
2	16IM602	International Business			✓	Students are able to apply the knowledge of environmental scanning and generic strategy alternatives which enable them to become entrepreneurs.
3	16IM603	Strategic Management			✓	Students are able to apply the knowledge of International business strategies which enable them to become international entrepreneurs.

4	16IM604	Decision Support Systems		✓		The students are able to demonstrate managerial Skills by Modelling Decision making systems
5	16IM605	Mini Project*		✓		Students will be able to demonstrate problem identification, analysis, design solutions in management fields and creative skills to address societal needs.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	16IM501	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	16IM502	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	16IM503	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	16IM504	Production and 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	16IM505	Research Methodology		✓		The students are able to demonstrate Research skills to analyse functional area problems in Industries

VI SEMESTER

	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	16IM601	Operations Research		✓		The students are able to demonstrate problem solving skills by Modelling Linear programming, Dynamic Programming
2	16IM602	International Business			✓	Students are able to apply the knowledge of environmental scanning and generic strategy alternatives which enable them to become entrepreneurs.
3	16IM603	Strategic Management			✓	Students are able to apply the knowledge of International business strategies which enable them to become international entrepreneurs.
4	16IM604	Decision Support Systems		✓		The students are able to demonstrate managerial Skills by Modelling Decision making systems

5	16IM605	Mini 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		**30**	**8**	**16**	**4**	

K. Shailaja
Program Coordinator

D. Vinod
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	173MC1T01	C Programming And Data Structures		✓		Students are able 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
2	173MC1T02	Computer Organization		✓		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, lined list, Trees and Graphs.
3	173MC1T03	Discrete Mathematical Structures And Graph Theory		✓		Students are able to acquire skills related to develop the ability to understand the structure of R Program, e knowledge on mathematical functions, Graphical functions, distribution functions and regression models.
4	173MC1T04	Statistical Programming With R		✓		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.
5	173MC1T05	Accounting And Financial Management				
6	173MC1L01	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	173MC1L02	C Programming 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.
8	173MC1L03	Statistical Programming With R Lab		✓		Students are able to acquire skills related to develop the ability to understand the structure of R Program, e knowledge on mathematical functions, Graphical functions, distribution functions and regression models.

II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
9	173MC1T06	Oops Through Java		✓		Students are able to demonstrate Problem solving skills to analyze the real time problem, and creative solutions using JAVA Programming language.
10	173MC1T07	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	173MC1T08	Software Engineering		✓		Students are able to demonstrate Problem solving skills to analyze the software engineering and design patterns to achieve the "best" design of software's by imparting the suitable design pattern.
12	173MC1T09	Optimization Techniques				
13	173MC1T10	Computer Graphics	✓			Students are able to acquire related 2D,3D graphical representations and basic graphic programming using openGL enabling them to employed as graphic designer.
14	173MC1L04	Oops Through Java Lab		✓		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.
15	173MC1L05	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	173MC1L06	Operating System & Computer Graphics Lab	✓			Students are able to acquire related 2D,3D graphical representations and basic graphic programming using openGL enabling them to employed as graphic designer.

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 acquire skills related to SQL commands, constraints, views, models, transactions, storage and indexing enabling them to be employed for backend developer
18	173MC1T12	Computer Networks		✓		Students are able to demonstrate Problem solving skills to analyze basics of CN, different models of Computer Networks, layers protocol suite and Detailed study of the OSI reference model and the TCP IP architectures.
19	173MC1T13	Unix Programming		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
20	173MC1T14	Management Information System		✓		Student can able to understand the basics of MIS, structure of MIS, Information Systems for Competitive Advantage, Business Intelligence and knowledge Management System, Information System Planning, Evaluation &Maintenance of IS, and IS Security and Control.
21	173MC1T15	Design And Analysis Of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design
22	173MC1L07	Data Base 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

23	173MC1L08	Unix Programming Lab		✓		Students are able to demonstrate programming solving skills by Identifying and using UNIX utilities to create and manage simple file processing operations
24	173MC1L09	Computer Networks Lab		✓		Students are able to demonstrate Problem solving skills to analyze basics of CN, different models of Computer Networks, layers protocol suite and Detailed study of the OSI reference model and the TCP IP architectures.

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 acquire skills related to developing web pages, enabling them to be employed as front end developers.
27	173MC1T18	Data Warehousing And Mining	✓			Students are able to demonstrate different 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		✓		**D**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 and its presentation.
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	✓			Students are able to acquire skills related to SPM, to understand the different models of software project developing, different

		Management				approaches in developing and solving problems while developing projects.
32	173MC4E05	Artificial Intelligence	✓			Students are able to acquire technical skills 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 acquire skills related to developing web pages, enabling them to be employed as front end developers.
35	173MC1L11	Data Warehousing And Mining Lab	✓			Students are able to demonstrate different 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 diagrams.

V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
37	MC1651	Big Data Analytics	✓			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 echo system
38	MC1652	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	MC1653	Python Programming	✓			Students are able to acquire skills related to Python Programming to give solutions to Realtime problems in creative way.
40	MC1654	Cyber Security	✓			Students are able to acquire skills related to Designing and Developing 3d User Interfaces, 3D Interaction Techniques and Virtual Reality applications that enabling them to be employed as interior designers and developer in industry.
41	MC1655	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	MC1656	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	MC1657	Internet Of Things	✓			Students are able to acquire skills related to Internet of Things and enabling them to be employed for IoT sector.
44	MC1658	Multimedia Application Development				
45	MC1659	Software Testing Methodologies	✓			Students are able to acquire technical skills to understand the various strategies or approaches used to test an application to ensure it behaves and looks as expected.
46	MC165A	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 echo system
47	MC165B	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	MC165C	Python Programming Lab	✓			Students are able to acquire skills related to Python Programming to give solutions to Realtime problems in creative way.

VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
49	MC165D	Project 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.
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**	**24**	**22**	**0**	

J-Satya
Program Coordinator

Beulah
Head of The Department
Head of the Dept.
Department of MCA
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