



# ADITYA ENGINEERING COLLEGE

An Autonomous Institution

Approved by AICTE • Permanently Affiliated to JNTUK • Accredited by NAAC with 'A' Grade

Recognised by UGC under sections 2(f) and 12(B) of UGC Act, 1956

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

1.1.3 Mapping of courses having focus on employability/ entrepreneurship/ skill development offered by the institution (Program wise) during the academic year 2017-18.

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# 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 to 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	171ES1L01	Computer Programming 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 modeling 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 displaying from different angles of projection 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	R1621011	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	R1621012	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	R1621013	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	R1621014	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	R1621015	Surveying			✓	Students are able to demonstrate competency in the domain of measuring distances and calculate areas enabling them to become a surveyor.
24	R1621016	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	R1621017	Survey Field Work - I		✓		Students are able to demonstrate technical skills of measuring distances and calculate areas enabling them to apply them in various constructions.
26	R1621018	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	R1621019	Professional Ethics & Human Values				

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
28	R1622011	Building Planning and 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.
29	R1622012	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.
30	R1622013	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.
31	R1622014	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.
32	R1622015	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.
33	R1622016	Transportation Engineering - I	✓			Students are able to acquire skills related to geometric properties of road enabling them to be employed for R and B department.
34	R1622017	FM and HM Lab		✓		Students are able to demonstrate technical skills in working with turbines, pumps and understand flow behaviour at various sections of harnessing energy from alternate energy sources.
35	R1622018	Survey Field Work - II		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modeling and analysis helps in training the students to face real time measurements and calculations as surveyors
36	R1622019	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
37	RT31014	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.
38	RT31012	Structural Analysis – II	✓			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.
39	RT31013	Design and Drawing of Reinforced Concrete Structures	✓			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.
40	RT31011	Geotechnical Engineering – I	✓			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
41	RT31015	Transportation 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.
42	RT31016	IPR and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
43	RT31017	Geotechnical Engineering Lab		✓		Students are able to demonstrate technical skill of characterizing soil tests on various types of soil to decide suitability of soil for construction activities as a civil engineer
44	RT31018	Engineering Geology Lab		✓		Students are able to demonstrate technical skill of geological knowledge in selection of suitable sites for construction and gather raw material like rocks and sand used as materials in buildings enabling them to be employed in constructional industry



## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
45	IRT32013	Design and Drawing of Steel Structures	✓			Students are able to acquire skills related to properties of steel structures and designing of connections between the structural members at industrial, offshore, high rise building enabling them to be employed for designing of building units.
46	IRT32012	Geotechnical Engineering – II	✓			Students are able to acquire skills related to slopes and finding out the earth pressures using various methodologies applied in foundation design of a building enabling them to be employed for constructional sector.
47	IRT32014	Water Resources 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
48	IRT32011	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
49	IRT32015	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
50	PT41011	Environmental Pollution and Control	✓			Students are able to acquire skills related to concepts of pollution of various sectors of environment and apply them in sustainable development of the society enabling them to be employed as environmental managers
51	RT32016A	Disaster Management	✓			Students are able to acquire skills related to interpretation of various disasters in the environment and prepares one to prevent, face and combat them enabling them to be employed as managers in various industries
52	RT32016C	Industrial Water & Waste Water Management	✓			Students are able to acquire skills related to the industrial requirement and treatment of the waste water from various industries enabling them to be employed as environmental engineers
53	RT32016B	Architecture and Town Planning	✓			Students are able to acquire skills related to various architectural principles of construction and planning in constructional industry and enabling them to be employed as town planners
54	RT32016D	Finite Element Method		✓		Students are able to acquire problem solving skills related to structural related problems and developing software programs and enabling them to be employed

						in various software related constructional industries
55	RT32016E	Green Technologies	✓			Students are able to acquire skills related to various technologies related to green building concept enabling them to be employed as modern constructional industry
56	RT32017	Computer Aided Engineering Drawing		✓		Students are able to demonstrate computer-based drawing and reducing manual drawing in constructional activities
57	RT32018	Transportation Engineering Lab		✓		Students are able to demonstrate technical skill of testing of materials and traffic data collection applied in real time situation of R and B industry

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
58	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
59	RT41012	Prestressed Concrete	✓			Students are able to acquire skills related to bridge designing and metro constructions enabling them to be employed in constructional industry
60	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
61	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.
62	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
63	RT41016	(ELECTIVE - I) Ground Improvement Techniques				
64	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
65	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
66	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
67	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
68	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.
69	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
70	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
71	RT42011	Estimation, 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.
72	RT42012A	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 Civil engineers
73	RT42012B	Environmental Impact Assessment and Management				
74	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
75	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.
76	RT42012E	Traffic Engineering	✓			Students are able to acquire skills related to traffic behaviour by using traffic flow parameters enabling them to be employed by R and B industry
77	RT42012F	Infrastructure Management				
78	RT42013A	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
79	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
80	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
81	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
82	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 R and B industry

83	RT42013F	Green Buildings		✓		Students are able to demonstrate technical skill of various green principles related to buildings in constructional activities
84	RT42014A	Soil Dynamics and Machine Foundations	✓			Students are able to acquire skills related to behavior of a soil subjected to dynamic (actions having high acceleration) loading and impact on the foundations enabling them to be employed in constructional industry
85	RT42014B	Environmental and Industrial Hygiene				
86	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
87	RT42014D	Water Resources System Planning and Management	✓			Students are able to acquire skills related to planning of various water sources and their conservation principles in the society enabling them to be employed in civil industry
88	RT42014E	Urban Transportation Planning Safety Engineering		✓		Students are able to demonstrate technical skill of generation of trips and trip modeling in R and B industry
89	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
90	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		90	52	26	2	

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	R1621021	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	R1621022	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	R1621023	Basic Electronics and Devices				
22	R1621024	Electro Magnetic 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	R1621025	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	R1621026	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.
25	R1621027	Thermal and Hydro Laboratory		✓		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	R1621028	Electrical Circuits Laboratory	✓			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.

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	R1622021	Electrical Measurements	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
28	R1622022	Electrical Machines-II	✓			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
29	R1622023	Switching Theory and Logic Design				
30	R1622024	Control Systems	✓			imparts foundations of control systems, which are helpful in controlling industrial and domestic processes, making the student employable.
31	R1622025	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.
32	R1622026	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.
33	R1622027	Electrical Machines -I Laboratory	✓			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
34	R1622028	Electronic Devices & Circuits Laboratory	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electronic devices, electric circuits or networks enabling them to be employed for working and manufacturing of electronic devices industries.

## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
35	RT31021	Electrical Measurements	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
36	RT31022	Managerial Economics & Financial Analysis			✓	The subject helps the student to improve the ideas as it develops the managerial skills in the students, it also helps the student to understand various financial terms and analysis of it which help them to become an independent entrepreneur.
37	RT31023	Power Systems -II	✓			Students are able to acquire skills related to how a well-designed power system ensures robust performance and maximizes plant availability under all operating conditions enabling them to be employed for assessing transient conditions like motor starting, non-linear loads and generator loss.
38	RT31024	Electrical Machines - III	✓			Students are able to acquire skills related to machines particularly in traction, electrical vehicles, etc. or as generators enabling them to be employed for controlling, designing and manufacturing in power station, wind turbines, etc
39	RT31025	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.
40	RT31026	Linear And Digital IC Applications		✓		Students are able to demonstrate technical solving skills by providing knowledge on ICs with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.
41	RT31027	Electrical Machines-II Lab	✓			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
42	RT31028	Control Systems Lab	✓			Students are able to acquire skills related to strategic methods to improving productivity and enhancing the best practices of the company

						that enables them to get employed in industries related to controlling of operations.
43	RT31016	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
44	RT32022	Switchgear and Protection	✓			Students are able to acquire skills related to mitigating some of the potential protection challenges imposed by the growth in non-dispatchable renewable generation on electric grids is an important consideration enabling them to be employed in protection of power system industry.
45	RT32021	Microprocessors & Microcontrollers		✓		Students are able to demonstrate technical solving skills by providing knowledge on microprocessors with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.
46	RT32023	Utilization of Electrical Energy	✓			Students are able to acquire skills related to a judicious utilization of electrical energy without doing any power losses enabling them to be employed in optimisation sector of power industry.
47	RT32024	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.
48	RT32025	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.
49	RT32026	Power Semiconductor 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.
50	RT32027	Power Electronics Lab	✓			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.

51	RT32028	Electrical Measurements Lab	✓			Students are able to acquire skills related to various types of electrical parameters that enable them to get employed in core (electrical) industry/company related to measurements of electrical parameters.
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## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
52	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.
53	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.
54	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.
55	RT41024	Energy Audit and Conservation & Management			✓	the course focuses on the loss and profit studies and other company maintenance activities, creates the trust among the students to have own company.
56	RT41025	Instrumentation				
57	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.
58	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.
59	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.




60	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.
61	RT41030	Optimization Techniques		✓		Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.
62	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.
63	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.
64	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
65	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.
66	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.
67	RT42022B	Extra High Voltage Transmission				
68	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
69	RT42023A	Electric Power Quality	✓			Students are able to acquire skills related to high-quality power efficiency that enables them to be employed in industries focusing in saving money on electricity bill and carbon footprint.
70	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.
71	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.
72	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.
73	RT42024B	UNIX and Shell Programming		✓		Students are able to demonstrate programming skill for coding and building applications which is required for software industries.

74	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.
75	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.
76	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.
77	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		77	39	23	6	

  
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				
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.



S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
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 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	R1621031	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	R1621032	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	R1621033	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	R1621026	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
23	R1621034	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.
24	R1621035	Computer Aided Engineering Drawing Practice		✓		Computer Aided Drawing practice is designed to improve the skills of the students as they will be able to draft packages and commands for computer aided drawing and modelling. Students will be able to gain the skills to draw complex drawing by using these tools.
25	R1621036	Electrical And Electronics Engineering Lab		✓		Electrical and electronics lab helps the students to improve their technical skills as they get to know how to determine the efficiency of dc shunt, Single phase transformers. This subject also helps to obtain the characteristics and performance of Dc shunt motors. This subject helps student to solve the Dc motor and transformers related problems at the mine site.
26	R1621037	Mechanics of Solids and Metallurgy Lab		✓		Students are able to acquire skills related to testing of material behaviour under various direct loads, Microstructure of metals Non metals.



## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	R1622031	Kinematics of Machinery	✓			This subject helps the students to improve their 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.
28	R1622032	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.
29	R1622033	Production Technology	✓			Students are able to acquire skills related to various manufacturing process, different joining techniques and bulk metal deforming processes.
30	R1622034	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.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
31	R1622035	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 companies.
32	R1622036	Industrial Engineering and Management			✓	This subject helps the student to demonstrate competency become as the students have interactions between engineering, business, technological and environmental spheres in the modern society. This subject also understands student's role as engineers and their impact to society at the national and global context which enabling them to become an entrepreneur.
33	R1622037	Fluid Mechanics and Hydraulic Machinery Lab		✓		Students are able to demonstrate technical skills in determining the efficiencies of pumps and turbines, enabling them to be employed in piping design industries.
34	R1622038	Production Technology Lab		✓		Students are able to acquire skills related to knowledge on casting, welding and sheet metal forming processes enabling them to be employed in manufacturing sector.

## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
35	RT31031	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.
36	RT31032	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
37	RT31033	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.
38	RT31034	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.
39	RT31035	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.



S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
40	RT31036	Metrology	✓			Students are able to acquire skills related to the measurement of linear and angular measuring instruments.
41	RT31037	Machine Tools Lab		✓		Students are able to acquire skills to operate various machine tools and enable them to be employed in Manufacturing sector.
42	RT31038	Metrology and 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.
43	RT31016	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
44	RT32031	Operations Research	✓			Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.
45	RT32032	Interactive Computer Graphics	✓			Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2d and 3d applications.
46	RT32033	Design of Machine members-II	✓			Students are able to acquire skills to understand the concepts in design of bearings, engine parts, and gears enabling them to be employed in design-based industries
47	RT32034	Robotics	✓			Students are able to acquire skills to understand the concepts of robot kinematics, Dynamics and trajectory planning enabling them to be employed in robot manufacturing industries

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	RT32035	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.



S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
49	RT32036	Industrial Engineering Management			✓	Students are able to demonstrate Competency to understand the knowledge of industrial engineering domain and enabling them to be an entrepreneur.
50	RT32037A	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	RT32037B	Computational Fluid Dynamics		✓		Students are able to acquire skills in analyzing the numerical methods related to fluid modelling.
52	RT32037C	Condition Monitoring	✓			Students are able to acquire skills in detecting the faults in the systems by monitoring several parameters to prevent major failures.
53	RT32037D	Rapid Prototyping		✓		Students are able to acquire skills related to the knowledge of Additive manufacturing (AM) principles and the knowledge of liquid, solid and powder based rapid prototyping systems and enabling them to be employed in Additive manufacturing industries.

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
54	RT32038	Heat Transfer Lab		✓	.	Students are able to demonstrate problem solving skills in calculating the heat transfer coefficient through conduction, convection and radiation.

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
55	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.
56	RT41032	CAD/CAM	✓			-Students are able to demonstrate problem solving skills for improving productivity and enhancing the best practices of the company.
57	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
58	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
59	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
60	RT41036	Nano technology	✓			Students are able to acquire skills in developing the concept and fundamentals of Nanotechnology
61	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
62	RT41038	Design for Manufacture	✓			Students are able to demonstrate technical skills in design of manufacturing through consideration of cost, quality and reliability.
63	RT41039	Automation in Manufacturing	✓			Students are able to demonstrate skills for automating the manufacturing processes.
64	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.
65	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
66	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
67	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.
68	RT42032	Green Engineering Systems	✓			Students are able to demonstrate problem solving skills in analyzing the significance of alternative sources of energy, green energy systems.
69	RT42033A	Experimental Stress Analysis	✓			Students are able to demonstrate problem solving skills in finding the response of structure to different types of loads
70	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
71	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.
72	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.
73	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
74	RT42034B	Advanced Optimization techniques	✓			Students are able to demonstrate problem solving skills in optimization of parameters in various engineering applications
75	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.



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S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
76	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
77	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.
<b>Total</b>		<b>77</b>	<b>44</b>	<b>23</b>	<b>5</b>	



Program Coordinator



Head of the Department

Head of the Department  
Department of Mechanical Engineering  
Aditya Engineering College (A)  
SURAMPALAM-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	✓			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		✓		Skill Development: 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	✓			Employability: 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				
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	R1621041	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	R1621042	Switching Theory and Logic Design	✓			Students are able to acquire skills related to design, and synthesize basic of digital cuts enabling them to be employed for designing and manufacturing of electronic equipment.
21	R1621043	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	R1621044	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	R1621045	Random Variables and Stochastic Process				
24	R1621026	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.
25	R1621046	Electronic Devices and Circuits Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits.
26	R1621047	Networks & Electrical Technology Lab		✓		Students are able to demonstrate technical skill of characterizing electrical machines and modelling and analysis of electronic networks

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	R1622041	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.
28	R1622042	Control Systems	✓			imparts foundations of control systems, which are helpful in controlling industrial and domestic processes, making the student employable.
29	R1622043	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.
30	R1622044	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.
31	R1622045	Pulse and Digital Circuits	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electric circuits/networks enabling them to be employed for designing and manufacturing of electronic equipment.
32	R1622026	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.
33	R1622046	Electronic Circuit Analysis Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of electronic circuits.
34	R1622047	Analog Communications Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of communication circuits.

## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
35	RT31041	Pulse & Digital Circuits	✓			Students are able to demonstrate technical skill of modelling and analysis of pulse and digital circuits.
36	RT31042	Linear IC Applications	✓			Students are able to demonstrate technical solving skills by providing knowledge on ICs with growing penetration of smart electronics in strategic areas including Space, Defence and Nuclear energy.
37	RT31043	Control Systems	✓			imparts foundations of control systems, which are helpful in controlling industrial and domestic processes, making the student employable.
38	RT31044	Digital System Design & Digital IC Applications	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of electronic circuits using digital ICs enabling them to be employed for designing and manufacturing of electronic equipment.
39	RT31045	Antennas 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
40	RT31047	Pulse & Digital Circuits Lab		✓		Students are able to demonstrate technical skill of modelling and analysis of electronic circuits.
41	RT31048	LIC Applications Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with linear ices in the fields of instrumentation, communications etc.
42	RT31049	Digital System Design & DICA Lab		✓		Students are able to demonstrate technical skill of designing electronic circuits with digital ICs.
43	RT31016	IPR& Patents				



## VISEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
44	1RT32041	Microprocessors and Microcontrollers	✓			Students are able to acquire skills related to the design of electronic circuits with micro processors and controllers enabling them to be employed for designing and manufacturing electronic equipment.
45	1RT32042	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.
46	1RT32043	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.
47	1RT32044	Microwave Engineering	✓			Students are able to acquire skills related to microwave devices, enabling them to be employed for designing and manufacturing of radio communication equipment.
48	RT32045A	Open Elective--Bio Medical Engineering				
49	RT32046	Microprocessors and Microcontrollers Lab		✓		This lab is helpful in developing design skills related to various microprocessor and microcontroller based cuts/programs.
50	RT32047	Digital Communications Lab		✓		Develops practical skills required for development of basic communication circuits.
51	RT32048	Digital Signal Processing Lab		✓		Students are able to acquire skills related to design, synthesize and evaluate the performance of digital signal processing systems enabling them to be employed for designing and manufacturing of electronic equipment.
52	RT32049	Seminar	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in communication engineering domain through the acquired technical, cognitive, communication and creative skills to address societal needs.

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	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.
54	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.
55	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 field
56	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
57	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.
58	RT41046	Analog IC Design	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of current mirrors, amplifiers and pumps enabling them to be employed for designing and manufacturing of analog ICs.
59	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.
60	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.
61	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 architectures.
62	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.
63	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 Ics.
64	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.
65	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.
66	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.
67	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.
68	RT4104M	Microwave Engineering Lab		✓		Students are able to demonstrate technical skill of characterizing electronic devices, modelling and analysis of electronic circuits in the field of VLSI.



## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
69	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.
70	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.
71	RT42043A	Satellite Communication	✓			Students are able to acquire skills related to design, analyze and evaluate the performance of satellite communication systems .
72	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 ICs
73	RT42043C	Embedded systems	✓			Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System
74	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.
75	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.
76	RT42044A	Wireless Sensors and Networks	✓			Students are able to acquire skills related to design, wireless ad hoc networks enabling them to be employed for designing and implementation of WSNs.
77	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.

78	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.
79	RT42044D	4.Bio-Medical Instrumentation	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of biomedical instrumentation circuits enabling them to be employed for designing and manufacturing of electronic equipment like ECG,EMC etc
80	RT42044E	5.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.
81	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		81	52	18	2	



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		✓		Skill Development: 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	✓			Employability: 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	R1621051	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	R1621052	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by learning Mathematical logic , Graph Theory and Number Theory .
21	R1621053	Digital Logic Design		✓		Students are able to demonstrate technical skills related to working with logic circuits, developing K-Maps and working with multiplexers
22	R1621054	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
23	R1621055	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
24	R1621056	Computer Graphics				
25	R1621057	Data Structures through C++Lab	✓			Students are able to acquire programming skills related to OOP's, and Basic Data structure like stacks, queues, linked lists, trees and tries which enable them to employed as a product developer.
26	R1621058	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	R1622051	Software Engineering	✓			Students are able to acquire skills relates to software engineering, project estimation and management enabling them to acquire employed as software developer.
28	R1622052	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
29	R1622053	Advanced Data Structures	✓			Students are able to acquire technical skills related to demonstrate advanced algorithmic problems enabling them to be employed as software developers.
30	R1622054	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
31	R1622055	Formal Languages and Automata Theory		✓		Students are able to demonstrate problem solving skills by understanding the basic properties of formal languages and grammars
32	R1622056	Principles of Programming Languages		✓		Students are able to acquire technical skills to gain knowledge of different programming constructs like modular and logic programming, OOP's concepts, Storage of procedures in a recursive call and Data Structures
33	R1622057	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.
34	R1622058	Java Programming 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
35	RT31051	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.
36	RT31052	Data Communication				
37	RT31053	Principles Of Programming Languages		✓		Students are able to demonstrate programming and technical skills by comparing different programming paradigms.
38	RT31054	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
39	RT31055	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
40	RT31056	Compiler Design Lab	✓			Students are able to acquire skills related to design, synthesize and evaluate the performance of Different Language Compilers and enabling them to be employed for designing of Compilers.
41	RT31057	Operating Systems & Linux Programming Lab	✓			Students are able to understand and acquire skills related to features and functionalities of operating System and Linux programming which enables them to be employed as Hardware core side job opportunities
42	RT31058	Database Management Systems Lab	✓			Students are able to acquire skills related to SQL commands, constraints, views, and pl/SQL programming enabling them to be employed as a backend developer.
43	RT31059	Seminar		✓		

## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
44	RT32051	Software Engineering	✓			Students are able to acquire skills relates to software engineering, project estimation and management enabling them to acquire employed as software developer.
45	RT32052	Data Ware housing 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.
46	RT32053	Computer Networks				
47	RT32054	Design and Analysis of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design
48	RT32055	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
49	RT32056	IPR and Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
50	RT32057	Computer Networks And 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
51	RT32058	Software Engineering Lab	✓			Students are able to acquire skills relates to software engineering, project estimation and management enabling them to acquire employed as software developer.
52	RT32059	Web Technologies Lab	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
53	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.
54	RT41052	UML and Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
55	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.
56	RT41054	Software Testing Methodologies		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
57	RT41055	Simulation Modeling		✓		Students are able to simulate the models for the purpose of optimum control by using software.
58	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.
59	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
60	RT41058	Multimedia Computing		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
61	RT41059	High Performance Computing		✓		Students are able to demonstrate technical skills related to the principles of multi-threading and distributed computing
62	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.




63	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.
64	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)
65	RT4105D	Machine Learning	✓			Students are able to acquire skills related to data science algorithms, enabling them to be employed as data scientists.
66	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 be employed as Database Administrator.
67	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.
68	RT4105N	Software Testing Lab		✓		Students are able to acquire technical skills by applying different software testing techniques and strategies.
69	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.
70	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.
71	RT42051	Distributed Systems		✓		Students are able to demonstrate technical skills of Interposes Communication using java RMI, Distributed File Systems and analysis various distributed algorithms in projects.

## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
72	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.
73	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.
74	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
75	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.
76	RT42053D	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
77	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
78	RT42053F	Micro processors and Multi Core Systems		✓		Students are able to demonstrate technical skills and extensive knowledge of microprocessor-based systems
79	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.

80	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.
81	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.
82	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.
83	RT42055	Project	✓			Students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
<b>TOTAL</b>		<b>83</b>	<b>39</b>	<b>32</b>	<b>2</b>	

  
Program Coordinator

  
Head of the Department  
Head of the Department  
Department of CSE  
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.
						Students are able to demonstrate technical skills to express fluently in both written as well as oral forms of language which is very much

7	171HS1L01	English Communication Skills Lab – I		✓		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 and 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 can 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	✓			Employability -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	✓			Employability -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	R1621051	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	R1621052	Mathematical Foundations of Computer Science		✓		Students are able to demonstrate problem solving skills by learning Mathematical logic , Graph Theory and Number Theory .
21	R1621053	Digital Logic Design		✓		Students are able to demonstrate technical skills related to working with logic circuits, developing K-Maps and working with multiplexers
22	R1621054	Python Programming	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.
23	R1621055	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.
24	R1622121	Computer Graphics		✓		Students are able to demonstrate technical skill to develop graphical applications using line, polygon, curve drawing and clipping algorithms, design 2d and 3d applications.
25	R1621057	Data Structures through	✓			Students are able to acquire programming skills related to OOP's, and Basic Data structure like stacks, queues, linked lists, trees

		C++Lab				and tries which enable them to employed as a product developer.
26	R1621058	Python Programming Lab	✓			Students are able to acquire skills related to python programming, enabling them to be employed as software developers.



## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	R1622052	Java Programming	✓			Students are able to acquire skills related to java programming enabling them to be employed as software developers.
28	R1622122	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.
29	R1622054	Computer Organization	✓			Students are able to acquire technical skills which help them to work with the internal organization and functioning of Computer System and enabling them to get employed in the hardware sectors of computers.
30	R1622123	Object Oriented Analysis and Design using UML		✓		Students are able to acquire technical skills to develop different UML diagrams like use case, class, sequence, collaboration, component and deployment diagrams.
31	R1622056	Principles of Programming Languages		✓		Students are able to acquire technical skills to gain knowledge of different programming constructs like modular and logic programming, OOP's concepts, Storage of procedures in a recursive call and Data Structures.
32	R1622124	Unified Modeling Languages Lab		✓		Students are able to acquire technical skills to develop different UML diagrams like usecase, class, sequence, collaboration, component and deployment diagrams

33	R1622058	Java Programming 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
34	RT31121	Software Engineering		✓		Students are able to acquire the technical skill of Software Development Models, Software Development Life Cycle.
35	RT31052	Data Communication		✓		Students are able to acquire skills of various analogy and digital modulation and demodulation techniques, multiplexing schemes, communication protocols
36	RT31123	Advanced JAVA	✓			Students are able to acquire programming skills which helps them to make use of collections, Java Beans, Servlets and JSP which enable them to be employed as server side developers.
37	RT31054	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.
38	RT31055	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 .
39	RT31126	Advanced JAVA Lab	✓			Students are able to acquire programming skills which helps them to make use of collections, Java Beans, Servlets and JSP which enable them to be employed as server-side developers.
40	RT31127	Operating System		✓		Students are able to acquire technical skills related to process



		Lab				scheduling algorithms used for allocating process to resources, critical section and mutual exclusion, semaphores, dealocks, paging and page replacement algorithms.
41	RT31128	Database Management Systems Lab	✓			Students are able to acquire skills related to Writing SQL Queries, implement normalization techniques and apply transaction processing techniques enabling them to be employed as a Database Administrator.
42	RT31057	Linux Programming Lab	✓			Students are able to acquire technical skills related to linux commands, awk, sed, grep commands which enable them to be employed as Server administrator.
43	RT31016	IPR and Patents- 1			✓	It helps the graduates safeguard the IP and innovations at their place of work.
44	RT31059	Seminar		✓		Students are able to demonstrate technical skills by giving a seminar on emerging trends in the IT sector.

## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
45	RT32053	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.
46	RT32052	Data Ware housing 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.
47	RT32121	Software Testing		✓		Students are able to acquire technical skills that enable them to identify and implement different testing strategies.
48	RT32054	Design and Analysis of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design.
49	RT32055	Web Technologies	✓			Students are able to acquire skills related to developing web pages, enabling them to be employed as front end developers.
50	RT32128	Software Testing Lab		✓		Students are able to acquire technical skills that enable them to identify and implement different testing strategies.
51	RT32127	Computer Networks Lab		✓		Students are able to acquire technical skills to identify different types of networks available, message transfer techniques over a network routing and different types of routing algorithms.

52	RT32056	IPR and Patents-II			✓	It helps the graduates safe guard the IP and innovations at their place of work.
53	RT32129	Web Technologies Lab				



## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
54	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.
55	RT41052	UML and Design Patterns		✓		Students are able to demonstrate technical skill of unified modelling language and design pattern used in various software project.
56	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.
57	RT41121	Embedded and Real Time Systems		✓		Students are able to demonstrate technical skills of Simulators, emulators, Debuggers, Embedded Product Development life cycle and Real Time Operating System.
58	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.
59	RT41058	Multimedia Computing		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.
60	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.

61	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).
62	RT41122	Computer Vision				
63	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.
64	RT4112M	Mobile Application Development Lab	✓			Students are able to acquire technical skills which helps them in developing mobile applications using J2EE and android which enable them to be employed as Mobile Application Developer.
65	RT4112O	Software Engineering Lab		✓		Students are able to acquire technical skills to plan and manage projects at each stage of the software development life cycle (SDLC)
66	RT4112N	Hadoop and Bigdata Lab				
67	RT42121	Mathematical Opimization				
68	RT42051	Distributed Systems		✓		Students are able to demonstrate technical skills of Interposes Communication using java RMI, Distributed File
69	RT4112L	UML & Design Patterns Lab				

## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
70	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.
71	RT42053A	Human Computer Interaction		✓		Students are able to demonstrate GUI components such as Menus, Forms, Dialog boxes and gain knowledge on various design paradigms,
72	RT42053B	Advanced Operating Systems	✓			Students are able to understand and acquire skills related to features and functionalities of operating System
73	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.
74	RT42053D	Pattern Recognition		✓		Students are able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.
75	RT42122	Project				
TOTAL		75	26	37	4	



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	R1621081	Complex Variables		✓		Students are able to demonstrate problem solving skills by analytical properties of functions of complex variables , complex integration and conformal mapping
20	R1621012	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
21	R1621272	General Geology	✓			Students are able to acquire skills related to various aspects of various structures enabling them to be employed as petroleum geologists.
22	R1621273	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	R1621084	Chemical Process Calculations		✓		Students are able to demonstrate Problem solving skills to analyze stylometric relations of chemicals and performance characteristics of it.
24	R1621271	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
25	R1621085	Basic Engineering (Mech. + Elec.) 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	R1621274	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	R1621075	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.



## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
28	R1622271	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.
29	R1622272	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.
30	R1622273	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.
31	R1622274	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.
32	R1622275	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.
33	R1622276	Petroleum Exploration	✓			Students are able to demonstrate technical skill of characterizing structures, modelling and analysis of structures by exploration methods.
34	R1622277	Momentum Transfer Lab		✓		Students are able to acquire skills related to various aspects of different fluid flow behaviour and designing of fluid flow enabling them to be employed as production engineers.
35	R1622278	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.
36	R1621019	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.

## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
37	RT31086	Process Instrumentation		✓		Students are able to demonstrate technical skill of characterizing different types of instruments, modelling and analysis of instruments.
38	RT31271	Petroleum Exploration		✓		Students are able to demonstrate technical skill of characterizing different exploration methods, modeling and analysis of structures.
39	RT31272	Well Logging And Formation Evaluation		✓		Students are able to demonstrate technical skill of characterizing different logging tools, modelling and analysis of formations.
40	RT31273	Drilling Technology		✓		Students are able to demonstrate technical skill of characterizing different drilling methods, modelling and analysis of well bore.
41	RT31274	Well Engineering		✓		Students are able to demonstrate technical skill of characterizing different well designs, modelling and analysis of well bore.
42	RT31275	Process Dynamics And Control		✓		Students are able to demonstrate technical skill of characterizing different controllers, modelling and analysis of control valves.
43	RT31277	Instrumentation And Process Control Lab		✓		Students are able to acquire skills related to various aspects of different controllers behaviour enabling them to be employed as production engineers.
44	RT31278	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.

## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
45	RT32271	Well Completions		✓		Students are able to demonstrate technical skill of characterizing different wells , modelling and analysis of completions.
46	RT32272	Petroleum Reservoir Engineering-I		✓		Students are able to demonstrate technical skill of characterizing different rock properties , modelling and analysis of reservoir.
47	RT32273	Petroleum Production Engineering And Design		✓		Students are able to demonstrate technical skill of characterizing different fluid flow properties , modelling and analysis of production.
48	RT32274	Petroleum Refinery And Petrochemical Engineering		✓		Students are able to demonstrate technical skill of characterizing different heaters, treaters, distillation columns , modelling and analysis of refinery.
49	RT32275	Surface Production Operations		✓		Students are able to demonstrate technical skill of characterizing different separators , modelling and analysis of production.
50	RT32277	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.
51	RT32278	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.
52	RT32056	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
53	RT41271	Integrated Asset Management			✓	Students are able to demonstrate Competency in the domain of Integrated asset management enabling them to become an entrepreneur.
54	RT41272	Enhanced Oil Recovery Techniques		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
55	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.
56	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.
57	RT41016F	Green Fuel Technologies				
58	RT41016A	Energy Management				
59	RT41016B	Fundamentals Of Petroleum Industry				
60	RT41016C	Offshore Engineering				
61	RT41016D	Pipeline Engineering		✓		Students are able to demonstrate technical skill of characterizing different material behaviours , modelling and analysis of pipeline operations.
62	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.
63	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.
64	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.

65	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.
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## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
66	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.
67	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.
68	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.
69	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.
70	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.
71	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 .
72	RT42273B	Subsea Engineering		✓		Students are able to demonstrate technical skill of characterizing different subsea structures , modelling and analysis of production.
73	RT42273C	Fundamentals Of Multiphase Flow		✓		Students are able to demonstrate technical skill of characterizing different rock properties , modelling and analysis of flow behaviour.



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B. Tech Petroleum Technology

74	RT42274A	Natural Gas Hydrates		✓		Students are able to demonstrate technical skill of characterizing different feeds from well , modelling and analysis of hydrates.
75	RT42274B	Advanced Natural Gas Engineering		✓		Students are able to demonstrate technical skill of characterizing different gas wells , modelling and analysis of fluid behaviours.
76	RT42274C	Petroleum Biotechnology		✓		Students are able to demonstrate technical skill of characterizing different microbes , modelling and analysis of fluid behaviours with microbes.
	Total		15	44	4	

  
Program Coordinator

  
Head of the Department

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

**PROGRAM STRUCTURE****I SEMESTER**

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	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	R1621351	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.
20	R1621352	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	R1621353	Ground Water Hydrology, Well 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	R1621354	Properties and Strength of Materials	✓			Students are able to acquire skills related to analysing the deflections in beams under various loading and support conditions, solving the load carrying capacity of columns for different end conditions, and design of riveted and welded joints enabling them to be employed in construction related companies.
23	R1621355	Electrical Systems		✓		Students are able to demonstrate technical skill related to design, synthesize and evaluate the performance of electric machines and electronic circuits or networks.
24	R1621356	Surveying	✓			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	R1621357	Fluid Mechanics and Open Channel Hydraulics Lab		✓		Students are able to demonstrate technical skill of determining major and minor losses in pipes, flow behaviour in open channels.
26	R1621358	Surveying 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



## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	R1622351	Theory of Structures	✓			Students are able to acquire skills related to design of beams, slabs, columns, foundations and RCC structures enabling them to be employed in any construction related companies.
28	R1622352	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.
29	R1622353	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 equipments.
30	R1622354	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.
31	R1622355	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.
32	R1622356	Farm Power and Tractor Systems	✓			Students are able to acquire skills related to I.C engine systems and tractor systems enabling them to be employed in Farm tractor companies.



33	R1622357	Soil Science and Agronomy Field Lab		✓		Students are able to demonstrate technical skill of crop management practices adopted for increasing the crop productivity.
34	R1622358	Machine Drawing and Computer Graphics Lab		✓		Students are able to demonstrate technical skill of Manual drawing of machine components and Basics of AUTOCAD

## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
35	RT31016	IPR & Patents			✓	It helps the graduates safe guard the IP and innovations at their place of work.
36	RT31267	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.
37	RT31351	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
38	RT31352	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.
39	RT31353	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.
40	RT31354	Engineering Properties of Biological Materials and Food Quality	✓			Students are able to acquire skills related to designing various processing equipment's to insure food quality and safety enabling them to be employed as a food engineer.
41	RT31355	Agricultural Extension Techniques and Business Management			✓	Students are able to demonstrate Competency in the domain of agriculture extension and business management enabling them to become an entrepreneur.

42	RT31358	Farm Machinery Lab		✓		Students are able to demonstrate technical skill of determining parameters of different farm implements, calibration of seed cum fertilizer drills and sprayers.
43	RT31359	Seminar		✓		Students are able to demonstrate technical skills by giving a seminar on emerging trends in the Agriculture sector.



## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
44	RT32353	Design Of Soil & Water Conservation And Farm Structures	✓			Students are able to acquire skills related to designing and execution of the structures for controlling soil erosion, water erosion and irrigation in fields enabling them to be employed as farm structure designer.
45	RT32354	Dairy And Food Engineering	✓			Students are able to acquire skills related to milk and food processing unit operations, thermal treatment techniques enabling them to employed as dairy engineer.
46	RT32355	Theory Of Structures	✓			Students are able to acquire skills related to design of beams, slabs, columns, foundations and RCC structures enabling thrum to be employed in any construction related companies.
47	RT32356A	Operations Research		✓		Students are able to acquire analytical skills in finding optimal solutions of different models using various decision making techniques.
48	RT32356B	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.
49	RT32356C	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.
50	RT32356D	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.

51	RT32356E	Advanced Separation Technology	✓			Students are able to acquire skills related to separation technologies enabling them to be employed in any industry.
52	RT32356F	Mechatronics	✓			Students are able to demonstrate Competency to understand the knowledge of mechatronics and enabling them to be employed in electronics industries.
53	RT32356G	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.
54	RT32356H	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.
55	RT32356I	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.
56	RT32356J	Green Technologies	✓			Students are able to acquire skills related to various technologies related to green building concept enabling them to be employed as modern constructional industry.
57	RT32357	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.
58	RT32358	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
59	RT41352	Farm machinery and equipments II		✓		Students are able to acquire skills related to operation, maintenance and evaluation of harvesters, and threshers enabling them to be employed in farm machinery companies.
60	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.
61	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.
62	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.
63	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.
64	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.
65	RT41358	Watershed management		✓		Students are able to acquire technical skills on media characteristics, compression standards, multimedia representation, data formats, multimedia technology development.



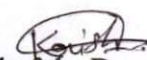
66	RT41359	Food packaging technology		✓		Students are able to demonstrate technical skills related to the principles of multi-threading and distributed computing
67	RT413510	Computational Fluid Dynamics	✓			Students are able to acquire skills related to understand the basics of computational fluid dynamics (CFD) and compare finite difference and finite volume methods applied in CFD and enabling them to be employed as a Computational fluid dynamics engineer.
68	RT4135L	Field operation and maintenance of tractors and farm machinery lab	✓			Students are able to gain skills related to Big data analytics and related tool enabling them to be employed for data analytics role.
69	RT4135M	Dairy and food engineering lab		✓		Students are able to acquire skills to plan and manage projects at each stage of the software development life cycle (SDLC)

## VIII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
70	RT42352	Agro industries and bi-product utilization	✓			Students are able to acquire skills related to treatment techniques of waste water from agricultural/food industry, production of by- products from agricultural and food processing wastes enabling them to be employed in any food industry.
71	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
72	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.
73	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.
74	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.
75	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.
76	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.

77	RT42355	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.
<b>TOTAL</b>		<b>77</b>	<b>40</b>	<b>29</b>	<b>3</b>	

  
Program Coordinator

  
Head of the Department  
Head of the Department  
Department of Agricultural 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.
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.
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## 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 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	17IES2L02	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
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## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
19	R1621261	Development of Mineral Deposits		✓		This subject emphasis on the skill development of student as it will helps the students to gain knowledge on ordinary methods of drilling and blasting and special method of shaft sinking , students will also get to know different drives in underground mines. This subject overall helps to enhance the technical skills of students by gaining their knowledge in modern shaft sinking method which is the preliminary work in the underground mines.
20	R1621262	Thermal Engineering for Mining		✓		Thermal engineering subject helps the student to improve their technical skills by knowing different types of thermodynamics laws, the operation of a heat engine and functioning of various systems of compressors, boilers, refrigeration and air conditioning. This will help the students to get placed in the boilers plant.
21	R1621034	Fluid Mechanics and Hydraulic Machines	✓			Students are able to acquire skills related to concepts of fluid statics, dynamics and performance characteristics of turbines and pumps and enabling them to be employed as a fluid engineer.
22	R1621035	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.
23	R1621263	Mining Geology – I		✓		It helps to enhance students skills by giving them clear picture about the nature of the material, the attitude of the beds, structures caused by deformed

						forces, etc. Geology also helps in choosing the method of exploitation, finding the solution for the problems associated with it. Having depth knowledge in this subject students will be able to explore different mineral beds under the earth.
24	R1621026	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.
25	R1621036	Electrical and Electronics Engineering Lab		✓		Electrical and electronics lab helps the students to improvise their technical skills as they get to know how to determine the efficiency of dc shunt, Single phase transformers. This subject also helps to obtain the characteristics and performance of Dc shunt motors. This subject helps student to solve the Dc motor and transformers related problems at the mine site.
26	R1621264	Fluid Mechanics and Hydraulic Machines Lab		✓		This subject helps the students to improve their skills by making them know the performance evaluation methods of various flow measuring equipment and hydraulic turbines and pumps. This subject helps the students to demonstrate their skills as they will identify and know the uses of different pumps which will be used in underground and open cast mines.



## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
27	R1622031	Kinematics of Machinery	✓			This subject helps the students to improve their 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.
28	R1622261	Materials 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.
29	R1622262	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 and mineral wealth of India and Andhra Pradesh. By the knowledge of this subject student can explore different mineral deposit by studying its stratigraphy.
30	R1622263	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.
31	R1622264	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 and blasting expert or a surface mining engineer.
32	R1622036	Industrial Engineering and Management			✓	<b>Entrepreneurship-</b> This subject helps the student to demonstrate competency become as the students have interactions between engineering, business, technological and environmental spheres in the modern society. This subject also understand students role as engineers and their impact to society at the national and global context which enabling them to become an entrepreneur.
33	R1622265	Geology Lab		✓		This subject helps the student to improve their skills as students get 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.
34	R1622266	Materials Lab		✓		This subject helps the student to demonstrate their technical skills as students get exposed to various tests such as tension, hardness, torsion, etc., they were also able to understand various microstructures of engineering materials which

						helps them to understand various complexities of the materials.
35	R1622267	Professional Ethics & Human Values				



## V SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
36	RT31261	Underground Coal Mining Technology		✓		<b>Skill Development</b> This subject helps the student to improve their skills by understand coal growth in India and all over the world and different terminology used in coal mining including modern methods. The subject also have a new innovative thoughts through computer application which also helps to get placed in various underground Coal mines.
37	RT31263	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.
38	RT31264	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.
39	RT31265	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.

40	RT31022	Managerial Economics & financial analysis			✓	The subject helps the student to improve the ideas as it develops the managerial skills in the students, it also helps the student to understand various financial terms and analysis of it which help them to become an independent entrepreneur.
41	RT31266	Mine mechanization		✓		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.
42	RT31267	Advanced English Communication Skills Lab			✓	This subject helps the student to prepare themselves for their careers which may require them to listen to, read, speak and write in english both for their professional and interpersonal communication in the globalised context which help to placed in good companies.
43	RT31268	Mine Surveying Lab		✓		This subject helps the student to improve their skills as they will understand different equipment and compare accuracy levels and to study several experiments and conversant with it.
44	RT31016	IPR & Patents				
45	RT31260	Mine Field visit(Mandatory)				



## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
46	1RT32261	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.
47	1RT32262	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 different type of fuel technology. This subject helps the mining student to get placed in different process related plants.
48	1RT32263	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.
49	1RT32264	Mining Machinery		✓		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 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.
50	1RT32265	Under Ground Metal Mining Technology		✓		This subject helps the student to demonstrate their technical skills as they will understand the peculiarities and limitations of metal mining, familiar with different stoping methods, design and planning of stoping methods. Students can be placed in



						different metal mining companies by possessing a depth knowledge in this subjects.
51	RT32266A	Rock Slope Engineering		✓		This subject demonstrate technical skills as they will understand the basic mechanics of rock failures and various which influence it.
52	RT32266B	Mine Subsidence Engineering		✓		This subject demonstrate technical skills as students able to understand the theories of mine subsidence and factors affecting it, methods of surface subsidence prediction, mining activities effect and time influence and impact on structure and influence of item on subsidence.
53	RT32266C	Rock Fragmentation Engineering		✓		This subject helps the students to demonstrate their technical skills as they will get to know the theory of rock breaking, and its applications by using various types of rock drilling and blasting methods.
54	RT32267	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.
55	RT32268	Environmental Engineering Lab		✓		This subject helps the student to upgrade their technical skills by making them 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.
56	RT32269	Industrial Training (3-4weeks)				

## VII SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
57	RT41261	Mine Economics		✓		This subject helps the student to demonstrate their problem solving skills by having the knowledge of estimation and valuation of mineral deposits, understanding the concept of project appraisal, finance and accounting which helps student to get their skill enhanced. Students possessing depth knowledge in this subject can employ themselves in the policy making of different minerals.
58	RT41262	Computer Applications in Mining	✓			This subject helps the student to acquire skills in different mining companies by providing them basic introduction on CAD applications, with reference to generation of basic CAD drawings this will help them to employ in mine planning.
59	RT41264	Mine Legislation & General Safety		✓		This subject is vital and important subject of mining as it demonstrates 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.
60	RT41265	Industrial Robotics		✓		Industrial robotics is quite new subject in era it will helpful to the student to demonstrate their technical skill as students practice in 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
61	RT41267	Numerical Methods		✓		Students are able to demonstrate problem solving skills by modelling physical phenomenon using Advanced Numerical Methods and Applied Statistics in various engineering disciplines.



62	RT41268	Industrial Management		✓		It helps the students to Improve their technical skills as it will create a relationship between the engineering, business, technological and environmental spheres in the modern society. It also helps the to understand their role as engineers and their impact to society at the national and global context.
63	RT4126L	Computer Applications in Mining Lab	✓			This subject helps the student to employ in different mining companies as Providing them basic introduction on CAD applications, with reference to generation of basic CAD drawings for mine planning.
64	RT4126M	Rock Mechanics & Ground Control Lab		✓		This subject helps the student to improve their skills as they will understand basic concepts of determining the physic-mechanical properties of rocks and also they will understand various rock mass properties such as uniaxial compressive strength, tensile strength, impact, slake durability and shear strength properties for rock and soil.
65	RT4126N	Short Survey Camp (One Week)		✓		This helps the student to demonstrate their technical skills as they will visit a place and perform indecent 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
66	RT42031	Production Planning and Control			✓	<b>Entrepreneurship-</b> 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.
67	RT42262A	Deep Sea Mining		✓		It helps the student to demonstrate their technical skills as students were able to know the characteristics of the ocean floor, off shore exploration of oil and gas and sub sea systems.
68	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.
69	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.
70	RT42263C	Planning of Surface Mining Projects	✓			It helps the student to demonstrate their technical skills as here entire phasing and sequencing of equipment planning and 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.

71	RT42264A	Maintenance & Reliability Engineering		✓		This subject helps the student to demonstrate technical skills as they will be able to understand various aspects of maintenance, reliability and reliability management.
72	RT42264B	Rock Excavation Engineering		✓		This subject helps the student to demonstrate technical skills as they understand the engineering properties of rock and rock mass is essential.
73	RT42264C	Mine Health and Safety Engineering		✓		This subject demonstrates the technical skills of different aspects of mine health and safety related problems also it creates awareness of the hazardous effect of mining in mining workers health.
74	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		74	10	50	05	



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	---	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	---	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	---	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	---	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.
<b>Total</b>		<b>31</b>	<b>27</b>	<b>4</b>	<b>0</b>	

  
Program Coordinator

  
Head of the Department

Head of the Department  
Department of Mechanical Engineering  
Aditya Engineering College (A)  
SURAMPALAM-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 be 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 activities, creates the entrust 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 ensures 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 get 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 (A9)



## 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	K5801	Comprehensive Viva-Voce	✓			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.
23	K5802	Seminar – I				
24	K5803	Project Work Part - I				

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
25	L5801	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.
26	L5802	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		26	15	7	0	

  
Program Coordinator

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

## 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	✓			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.
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				

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		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		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		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		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	✓			Students are able to acquire skills related to various aspects of transfer of loads from the superstructure to the underlying soil.
7	172SE1E03	Structural Optimization	✓			Students are able to demonstrate analytical skills that 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 deterioration of concrete structures and rehabilitation of these using advanced technologies, like preservation of monuments and other deteriorated structures enabling them to be employed as engineers in related field.
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 members enabling 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	✓			Students are able to acquire skills related to structural action against in stronger, thinner & lighter in structural members enabling them to be employed as civil engineers.
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				
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	J87 12	Comprehensive Viva-Voce				
24	J8713	Seminar-I				
25	J8714	Project Work Part-I				

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
26	J8715	Seminar -II				
27	J8716	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.
<b>TOTAL</b>		<b>27</b>	<b>15</b>	<b>5</b>		



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	<b>PE Stream:</b> Offshore Drilling		✓		Students are able to demonstrate technical skill of characterizing different crude oils , modelling and analysis of reservoir for recovery.
6	172PE1T06	<b>Non-PE Stream:</b> 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	<b>PE Stream:</b> 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	<b>Non-PE Stream:</b> 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.
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## II SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
10	172PE2T09	Advanced Natural Gas Engineering		✓		Students are able to demonstrate technical skill of characterizing different gas wells , modelling and analysis of fluid behaviours.
11	172PE2T10	Artificial Lift Techniques		✓		Students are able to demonstrate technical skill of characterizing different lift types , modelling and analysis of fluid behaviours in wells.
12	172PE2T11	Operational Aspects of Well Testing		✓		Students are able to demonstrate technical skill of characterizing different lift types , modelling and analysis of fluid behaviours in well testing.
13	172PE2T12	Integrated Reservoir Management		✓		Students are able to demonstrate Competency in the domain of Integrated Reservoir Management enabling them to become an entrepreneur.
14	172PE2E01	Practical Reservoir Modeling & Simulation				
15	172PE2E02	Optimization of Oil & Gas Production				
16	172PE2E03	Flow Assurance				
17	172PE2E04	Process Safety & Environmental Aspects in Petroleum Industry				
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	k0801	Summer Internship		✓		Students are able to Analyse and find the solution for Present Problems in industry or a particular company

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
22	10801	Presentation of Summer Internship Report		✓		Students are able to Analyse and find the solution for Present Problems in industry or a particular company
23	10802	Seminar on Advanced Topics in Petroleum Engineering		✓		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		1	17	1	



Program Coordinator



Head of the Department

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



**PROGRAM STRUCTURE****I SEMESTER**

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	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		✓		Students will be able to acquire technical skills to work on project development by identifying the analyzing different phases in project development like requirements, analysis, design, coding, testing, and deployment.
3	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 the loud using PIG and HIVE tools which enable them to be employed as Big Data Analysts.
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 different 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	✓			Students will be able to acquire programming skills to develop web pages using HTML, CSS, JavaScript, XML and PHP at server side and also to work with data on cloud using PIG & HIVE tools which enable them to be employed as software developer/Data analyst.

## 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 different 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	172SO2E10	User Interface Design				
16	172CO2E09	Internet Of Things	✓			Students will be able to acquire technical skills to develop real time IOT devices which can be used in the field of medicine, agriculture, Vigilance, safety and security services which enable them to be employed as IOT developer.
17	172SO2L02	Software Testing and Design Patterns Lab				



## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
18	17ISO3C01	Comprehensive Viva-Voce				
19	17ISO3R01	Seminar – I				
20	17ISO3P01	Project Work – Part - I	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics 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
21	171SO3R02	Seminar – II	✓			students will be able to acquire technical, cognitive, communication and creative skills .
22	171SO3P02	Project Work Part - II	✓			students will be able to demonstrate problem identification, analysis, design solutions or applications in electronics and communication domain through the acquired technical, cognitive, communication and creative skills to address societal needs.
	<b>TOTAL</b>	<b>22</b>	<b>9</b>	<b>8</b>		



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		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		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		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 Environment		✓		The students are able to demonstrate Business environment skills by characterising The SWOT of different



						companies.
6	174MB1T06	Quantitative Analysis for Business Decisions		✓		The students are able to demonstrate problem solving skills by Modelling Linear programming, Dynamic Programming
7	174MB1L01	IT - LAB		✓		The students are able to demonstrate Technical skills by Modelling of Structural query language.

## 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		✓		The students are able to demonstrate Research skills to analyse functional area

		Methods				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	MB1631	Strategic Management			✓	Students are able to apply the knowledge of environmental scanning and generic strategy alternatives ,which enable them to become entrepreneurs .
2	MB1632	Legal Aspects of Business		✓		The students are able to demonstrate managerial skills by learning the basic acts of business, legal clearances and obligations.
3	MB1633	Business Ethics & Corporate Governance				
4	MB1634	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	MB1638	Compensation and Reward Management	✓			The students are able to acquire skills related to wage payment plans , reward and motivation relation which enable them to be employed in HR

						department of Manufacturing and service companies.
6	MB163C	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	MB163G	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	MB1635	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	MB1639	Banking and Insurance Management	✓			The students are able to acquire skills related to banking industry ,NPA capital adequacy rules which enable

						them to be employed in banking Industry.
10	MB163D	Advance Management Accounting	✓			The students are able to acquire skills related to Cost accounting, advance accounting techniques which enable them to be employed in accounts department of manufacturing and service based companies.
11	MB163H	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	MB1636	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	MB163K	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
14	MB163L	RDBMS	.		.	
15	MB163M	System Analysis & Design				The students are able to acquire skills related to system analysis techniques, system designs , which enable them to be employed in Software companies
16	MB163E	Customer Relationship Management	✓			The students are able to acquire skills related to Customer relationship management techniques which enable them to be employed in Marketing department of manufacturing and service based companies.
17	MB163N	Web Designing	✓			The students are able to acquire skills related to HTML , Website designing which enable them to be employed in Software companies

18	MB163A	Retail 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.
19	MB163I	Strategic Marketing Management	✓			The students are able to acquire skills related to Strategic marketing techniques which enable them to be employed in Marketing department of manufacturing and service based companies.

## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
1	MB1641	Logistic and 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	MB1642	Entrepreneurship Development			✓	Students are able to apply the knowledge of entrepreneurial skills, legal steps to start enterprises which enable them to become entrepreneurs.
3	MB1643	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	MB1647	Global HRM	✓			The students are able to acquire skills related to global recruitment, Cultural diversity, Global training methods which enable them to be employed in HR department of manufacturing and service based companies.
5	MB164B	Labor Welfare &	✓	173		The students are able to acquire skills



		Legislation				related to different labour acts ,minimum wages act which enable them to be employed in HR department of manufacturing and service based companies.
6	MB164F	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	MB1644	Financial Markets and Services	✓			The students are able to acquire skills related to mergers.takeovers,valuation of firm after mergers which enable them to be employed in Finance department of manufacturing and service companies
8	MB1648	Global Financial Management	✓			The students are able to acquire skills related to Risk management in securities markets, Swaps which enable them to be employed in Finance department of manufacturing and service companies

9	MB164C	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	MB164G	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	MB1645	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	MB1649	Promotional Distribution Management	✓			The students are able to acquire skills related to sales promotional activates design ,divertimenti strategies which enable them to be employed in Marketing department of

						manufacturing and service companies
13	MB164D	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	MB164H	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	MB164J	Major Project & Comprehensive Viva		✓		Students are able to Analyse and find the solution for Present Problems in industry or a particular company
16	MB164O	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.



17	MB164P	Enterprise Resource Planning	✓			The students are able to acquire skills related to ERP-SCM, which enable them to be employed in Software companies
18	MB164Q	Cyber Laws & Security	✓			The students are able to demonstrate Technical skills by Modeling of cyber laws and security.
19	MB164R	Information Systems Audit				
<b>Total</b>		<b>52</b>	<b>35</b>	<b>11</b>	<b>2</b>	

*S. neelg*

**Program Coordinator**

*N. Viral*

**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	Fundament		✓		The students are able to demonstrate business skills

		als of Business Organizatio n				by understanding forms of business and basics of functional departments in companies.
4	175IM1T04	Financial Accounting – I	✓			The students are able to acquire skills related to basics of accountant, preperation Financial statements which enable them to be employed in accounts department of manufacturing and service based companies
5	175IM1T05	Fundament als of Computers		✓		The students are able to demonstrate technical skills through learning of different operating systems ,E Business and Repayment 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		✓		<b>Skill Development:</b> The students are able to demonstrate Business environment skills by characterizing The SWOT of different companies.
3	175IM2T08	Managerial Economics		✓		<b>Skill Development :</b> Core Course Imparts knowledge on micro economics ,Macro economics and 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 amaze 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	16IM301	Principles of Management		✓		Students are able to demonstrate managerial skills by using the motivational theories, leadership theories and organizational structure principles.
2	16IM302	Cost Accounting	✓			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	16IM303	Banking Theory & Practice	✓			Students are able to acquire skills related to banking industry ,NPA capital adequacy rules which enable them to be employed in banking Industry



4	16IM304	Business Law	✓			Students are able to acquire skills related legal and business environment and basic acts of business like sale of goods act, Principal agent relationship, consumer protection act which enable them to be employed in IR applicable companies.
5	16IM305	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	16IM401	Organizational Behavior				
2	16IM402	Management Accounting	✓			The students are able to acquire skills related to techniques of Financial analysis, Budgetary control which enable them to be employed in accounts department of manufacturing and service based companies
3	16IM403	Company Law	✓			The students are able to acquire skills related legal and business environment and students will learn

						the companies Act of 1956 and 2013, which enable them to be employed in IR applicable companies
4	16IM404	Elements of Direct & Indirect Taxes	✓			The students are able to acquire skills related to Tax structure and tax laws, which enable them to be employed in Finance department of manufacturing and service companies
5	16IM405	Management Information Systems				

*K. Shalika*  
Program coordinator

*D. Vimal*  
Head of the Department

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



# 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 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.
2	173MC1T02	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.
3	173MC1T03	Discrete mathematical structures and graph theory		✓		-Students are able to demonstrate problem solving skills by learning Mathematical logic , Graph Theory and Number Theory .
4	173MC1T04	Statistical programming with R		✓		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.
5	173MC1T05	Accounting and financial management			✓	Students are able to apply the knowledge of economic and financial management enabling them to become an entrepreneur in any domain of their choice.
6	173MC1L01	English language communication skills lab		✓		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
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, lined 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 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.
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 analyse 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 open 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, lined 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 open enabling them to employed as graphic designer.

## III SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
17	MC1631	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	MC1632	Computer Networks		✓		Students are able to demonstrate Problem solving skills to analyse 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	MC1633	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	MC1634	Management Information System				
21	MC1635	Design And Analysis Of Algorithms		✓		Students are able to demonstrate problem solving skills by apply knowledge of computing and mathematics to algorithm design
22	MC1636	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	MC1637	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	MC1638	Computer Networks Lab		✓		Students are able to demonstrate Problem solving skills to analyse basics of CN, different models of Computer Networks, layers protocol suite and Detailed study of the OSI reference model and the TCP IP architectures.
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## IV SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
25	MC1641	Object Oriented Analysis And Design		✓		Students are able to demonstrate Problem solving skills to analyse the Object oriented analysis and design fundamentals of object modelling, differentiate Unified Process from other approaches, static and dynamic UML diagrams.
26	MC1642	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	MC1643	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	MC1644	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	MC1645	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.
30	MC1646	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	MC1647	Software Project Management	✓			Students are able to acquire skills related to SPM, to understand the different models of software project developing, different approaches in developing and solving problems while developing projects.
32	MC1648	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	MC1649	Embedded Systems				
34	MC164A	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	MC164B	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	MC164C	Object Oriented Analysis And Design Lab		✓		Students are able to demonstrate Problem solving skills to analyse 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		Information Security		✓		The students are able to demonstrate technical skills by learning the Normative Models of the Systems Development Process, Data Integrity
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	MC1641	Object Oriented Analysis And Design (Using Uml)		✓		Students are able to demonstrate Problem solving skills to analyse the Object oriented analysis and design fundamentals of object modelling, differentiate Unified Process from other approaches, static and dynamic UML diagrams.
40	MC165D	Animation & Gaming	✓			Students are able to acquire skills related to Animation and Gaming, to develop and design different games and animated video.
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	Middle Ware Technologies	✓			Students will be able to acquire technical skills to implement the distributed architecture in building real time applications.
44	MC1658	Multimedia Application Development	✓			Students are able to acquire technical skills to learn the development of multimedia applications development with the cross disciplinary skills of computing and creative media.
45	MC1659	Software Project Management	✓			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	MC164C	Uml Lab		✓		Students are able to demonstrate Problem solving skills to analyse the Object oriented analysis and design fundamentals of object modelling, differentiate Unified Process from other approaches, static and dynamic UML diagrams.
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.

## VI SEMESTER

S. No	Course Code	Name of the Course	Employability	Skill Development	Entrepreneurship	Remarks
48	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
49		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		49	20	25	0	

*T. Satya*  
Program Coordinator

*Benuh*  
Head of the Department  
Head of the Department  
Department of MCA  
Aditya Engineering College