

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)