



**Jawaharlal Nehru Technological
University Anantapur College of Engineering
Pulivendula –516 390 (A.P) India**

**B.Tech. in Civil Engineering
Course Structure and Syllabi
under R19 Regulations**

CIVIL ENGINEERING

S.No	Course Name	Category	L-T-P-C
1	Physical Activities, Sports, Yoga and Meditation, Plantation	MC	0-0-6-0
2	Career Counseling	MC	2-0-2-0
3	Orientation to all branches -- career options, tools, etc.	MC	3-0-0-0
4	Orientation on admitted Branch --corresponding labs, tools and platforms	MC	2-0-3-0
5	Proficiency Modules & Productivity Tools	MC	2-1-2-0
6	Assessment on basic aptitude and mathematical skills	MC	2-0-3-0
7	Remedial Training in Foundation Courses	MC	2-1-2-0
8	Human Values & Professional Ethics	MC	3-0-0-0
9	Communication Skills -- focus on Listening, Speaking, Reading, Writing skills	MC	2-1-2-0
10	Concepts of Programming	MC	2-0-2-0

B.Tech I Year I Semester

Semester –1					
S.No	Course No	Course Name	Category	L-T-P	Credits
1	19ABS06	Linear Algebra and Calculus	BS	3-1-0	4
2	19ACS03	Python Programming	ES	3-1-0	4
3	19ABS01	Engineering Physics	BS	3-0-0	3
4	19AME01	Engineering Graphics	LC	1-0-3	2.5
5	19AME02	Engineering Workshop	ES	0-0-3	1.5
6	19ABS02	Engineering Physics Lab	BS	0-0-3	1.5
7	19ACS04	Python Programming Lab	ES	0-0-3	1.5
Total					18

B.Tech I Year II Semester

Semester –2					
S.No	Course No	Course Name	Category	L-T-P	Credits
1	19ABS07	Differential Equations and Vector Calculus	BS	3-1-0	4
2	19ABS05	Engineering Chemistry	BS	3-0-0	3
3	19AHS01	Communicative English-I	HS	2-0-0	2
4	19ACE01	Strength of Materials-I	PC	3-0-0	3
5	19ACE03	Building Materials and Construction	PC	3-1-0	4
6	19AHS02	Communicative English –I Lab	HS	0-0-2	1
7	19ABS08	Engineering Chemistry Lab	BS	0-0-3	1.5
8	19ACE04	Civil Engineering Workshop	LC	0-0-3	1.5
9	19ACE02	Strength of Materials Lab	LC	0-0-3	1.5
Total					21.5


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B.Tech II Year I Semester

Semester – 3					
S.No	Course No	Course Name	Category	L-T-P	Credits
1	19ABS11	Complex Variables, Transforms and Applications to PDE	BS	2-1-0	3
2	19AHS03	Universal Human Values	HS	2-0-0	2
3	19ACE05	Strength of Materials-II	PC	2-1-0	3
4	19ACE06	Fluid Mechanics	PC	2-1-0	3
5	19ACE07	Engineering Geology	PC	2-1-0	3
6	19ACE09	Structural Analysis-I	PC	2-1-0	3
7	19ACE10	Surveying	PC	3-1-0	4
8	19ACE08	Engineering Geology Lab	PC	0-0-2	1
9	19ACE11	Surveying Lab	PC	0-0-3	1.5
10	19ABS14	Environmental Science	MC	3-0-0	0
Total					23.5

B.Tech II Year II Semester

Semester - 4					
S.No	Course No	Course Name	Category	L-T-P	Credits
1	19ABS15	Numerical Methods, Probability and Statistics	BS	3-0-0	3
2	19ACE12	Water Resource Engineering -I	PC	2-1-0	3
3	19AME12	Hydraulics and Hydraulic Machinery	PC	2-1-0	3
4	19ACE13	Structural Analysis-II	PC	2-1-0	3
5	19ACE14	Concrete Technology	PC	2-1-0	3
6	19ACE16	Building Planning and Drawing	PC	1-2-0	3
7	19ACE15	Concrete Technology Lab	PC	0-0-2	1.0
8	19AME13	Fluid Mechanics and Hydraulic Machinery Lab	PC	0-0-3	1.5
9	19ACE17	Computer Aided Drafting Lab	PC	0-0-2	1.0
10	19AHS04	Constitution of India	MC	3-0-0	0
Total					21.5


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B.Tech III Year I Semester

Semester - 5					
S.No	Course No	Course Name	Category	L-T-P	Credits
1	19ACE51	Soil Mechanics	PC	2-1-0	3
2	19ACE52	Highway Engineering	PC	2-1-0	3
3	19ACE53	Design of reinforced concrete structures	PC	3-0-0	3
4	19ACE54	Professional Elective I	PE	3-0-0	3
	19ACE54a	Remote Sensing and GIS			
	19ACE54b	Repair and Rehabilitation of Structures			
	19ACE54c	Water Resources Engineering-II			
5	19ACE55	Open Elective I (Interdisciplinary) - ANNEXURE-I	OE	3-0-0	3
6	19AHS14	Humanities Elective I	HS	3-0-0	3
	19AHS14a	MEFA			
	19AHS14b	Entrepreneurship & Innovation Management			
7	19ACE56	Soil Mechanics lab	PC	0-0-3	1.5
8	19ACE57	Highway Engineering lab	PC	0-0-2	1.0
9	19ACE59	Socially Relevant Project (30 hours/sem)	PR	-----	1.0
10	19AHS16	Organizational Behavior	MC	2-0-0	0
Total :					21.5

B.Tech III Year II Semester

Semester - 6					
S.No	Course No	Course Name	Category	L-T-P	Credits
1	19AHS12	English Language Skills	HS	2-0-0	2
2	19ACE61	Foundation Engineering	PC	2-0-0	2
3	19ACE62	Design of Steel Structures	PC	2-1-0	3
4	19ACE63	Environmental Engineering	PC	2-1-0	3
5	19ACE64	Professional Elective II	PE	3-0-0	3
	19ACE64a	Advanced RCC			
	19ACE64b	Ground Improvement Techniques			
	19ACE64c	Transportation Engineering			
6	19ACE65	Open Elective II (Interdisciplinary) - ANNEXURE-II	OE	3-0-0	3
7	19AHS15	Humanities Elective II	HS	3-0-0	3
	19AHS15a	Management Science			
	19AHS15b	Business Environment			
8	19AHS13	English Language Skills lab	HS	0-0-3	1.5
9	19ACE66	Environmental engineering lab	PC	0-0-2	1
10	19AHS17	Research Methodology	MC	3-0-0	0
11	Industrial Training/ Internship/ Research Projects in National Laboratories/Academic Institutions *		PR	4 Weeks Summer Internship	
				Total	21.5

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B.Tech IV Year I Semester

Semester - 7					
S.No	Course No	Course Name	Category	L-T-P	Credits
1	19ACE71	Estimating and costing	PC	3-0-0	3
2	19ACE72	Construction technology and Project Management	PC	3-0-0	3
3	19ACE73	Advanced Structural Engineering	PC	3-0-0	3
4	19ACE74	Professional Elective III	PE	3-0-0	3
	19ACE74a	Bridge Engineering			
	19ACE74b	Earthquake Resistant design of Structures			
	19ACE74c	Air pollution and control			
5	19ACE76	Professional Elective IV	PE	3-0-0	3
	19ACE76a	Advanced foundation Engineering			
	19ACE76b	Prestressed Concrete			
	19ACE76c	Design and Drawing of Irrigation Structures			
6	19ACE75	Open Elective III - ANNEXURE-III	OE	3-0-0	2
7	19ACE77	Computer aided drafting lab	PC	0-0-3	1.5
8	19ACE78	Industrial Training/ Internship/ Research Projects in National Laboratories/Academic Institutions *	PR	-----	2
9	19ACE79	Project Stage-I	PR	-----	2
Total					22.5

B.Tech IV Year II Semester

Semester - 8					
S.No	Course No	Course Name	Category	L-T-P	Credits
1.	19ACE81	Professional Elective V /MOOCS	PE	3-0-0	3
2.	19ACE82	Open Elective IV/ MOOCS	OE	3-0-0	3
3.	19ACE89	Project Stage - II	PR	-----	6
					12

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ANNEXURE – I

Open Elective I (Interdisciplinary)

Branch	Subject Code	Subject
Humanities	19AHS10	Campus Recruitment Training & Soft Skills
Mathematics	19ABS20	Mathematical Modeling
	19ABS21	Fuzzy Set Theory, Arithmetic and Logic
	19ABS22	Number Theory
Physics	19ABS31	Sensors And Actuators for Engineering Applications
	19ABS32	Physics of Electronic Materials
Chemistry	19ABS41	Chemistry of Energy Materials
	19ABS42	Advanced Polymers and Their Applications
	19ABS43	Marine Chemistry
EEE	19AEE55a	Basics of Non-Conventional Energy Sources
	19AEE55b	Electrical Measurements & Sensors
	19AEE55c	Electric Vehicle Engineering
ME	19AME55a	Introduction to Hybrid and Electric Vehicles
	19AME55b	Rapid Prototyping
	19AME55c	Design for Manufacturing and Assembly
	19AME55d	Power Plant Operation and Control
	19AME55e	Smart Materials
	19AME55f	Supply Chain Management
ECE	19AEC55a	Fundamentals of Electronics and Communication Engineering
	19AEC55b	Transducers and Sensors
	19AEC55c	Principles of Communications
CSE	19ACS55a	Object Oriented Programming Concepts Through Java
	19ACS55b	Introduction to Internet Of Things
	19ACS55c	Introduction to Operating Systems


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ANNEXURE – II
Open Elective II (Interdisciplinary)

Branch	Subject Code	Subject Name
Humanities	19AHS11	Competitive & Spoken English
Mathematics	19ABS23	Integral Transforms And ITS Applications
	19ABS24	Numerical Analysis
	19ABS25	Optimization Techniques
Physics	19ABS33	Functional Nanomaterials For Engineers
	19ABS34	Materials Characterization Techniques
Chemistry	19ABS44	Green Chemistry and Catalysis for Sustainable Environment
	19ABS45	Chemistry of Nanomaterials and Applications
	19ABS46	Environmental Management and Audit
EEE	19AEE65a	Energy Conservation and Management
	19AEE65b	PLC & ITS Applications
	19AEE65c	System Reliability Concepts
ME	19AME65a	Automobile Electronics, Sensors & Drives
	19AME65b	Programming of Robots and Control
	19AME65c	Sensors in Intelligent Manufacturing
	19AME65d	Non-Conventional Sources of Energy
	19AME65e	NEMS & MEMS
	19AME65f	Optimization Techniques Through MAT lab
ECE	19AEC65a	Introduction to Microcontrollers & Applications
	19AEC65b	Principles of Digital Signal Processing
	19AEC65c	Introduction to Image Processing
CSE	19ACS65a	Introduction to Machine Learning
	19ACS65b	Introduction to Computer Networks
	19ACS65c	Web Design and Management

ANNEXURE – III-Open Elective III

Branch	Subject Code	Subject Name
CIVIL	19ACE75a	Architecture and town planning
	19ACE75b	Experimental stress analysis
	19ACE75c	Finite element methods
EEE	19AEE75a	Electrical engineering materials
	19AEE75b	Digital signal processors and applications
	19AEE75c	IOT applications in electrical engineering
ME	19AME75a	Special types of vehicles
	19AME75b	Six sigma and lean manufacturing
	19AME75c	Reverse engineering
	19AME75d	Energy auditing
	19AME75e	Introduction to composite materials
	19AME75f	Customer relationship management
ECE	19AEC75a	Embedded systems & IOT
	19AEC75b	Electronic instrumentation
	19AEC75c	Basics of VLSI design
CSE	19ACS75a	Mobile application development
	19ACS75b	Real time operating systems and applications
	19ACS75c	Fundamentals of block chain and applications

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