



Rajiv Gandhi University Of Knowledge Technologies-AP

NUZVID... RK VALLEY... SRIKAKULAM...ONGOLE

B. Tech Civil Engineering, Batch: 2023-2027



DEPARTMENT OF CIVIL ENGINEERING

COURSE STRUCTURE AND DETAILED SYLLABI OF B.TECH

PROGRAMME IN CIVIL ENGINEERING

Effective from the batches admitted in 2023-24 onwards

B. Kumar
Boley

H. N. Jeyaraj

B. B.

Prinip



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B. Tech Civil Engineering, Admitted Batch: 2023-24

Chapter-1

General, Course structure, Theme and semester-wise credit distribution

A. Definition of Credit:

1.5 Hour Lecture (L) per week	1 credit
1.5 Hour Tutorial (T) per week	1 credit
3 Hours Practical (Lab)/week	1.5 credits

B. Total number of credits: 160

C. Minimum number of contact hours/weeks per semester: 15 weeks of teaching

- i. For 1 credit course: 15 contact hours per semester
- ii. For 2 credit course: 30 contact hours per semester
- iii. For 3 credit course: 45 contact hours per semester
- iv. For 4 credit course: 60 contact hours per semester

D. Course code and definition, Abbreviations

Course Symbol	Definitions
PCC	Professional Core Course
PEC	Professional Elective Course
Project-1 & 2	Project
OEC	Open Electives Course
MOOC	Massive Open Online Course
MC	Mandatory Courses
SI	Summer Internship
BSC	Basic Science Course
ESC	Engineering Science Courses
HSC	Humanities and Social Sciences including Management Science
SEM	Seminar

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E. Structure of Program

S.No	Category	Break up of credits
1	Basic Science Courses	15.5
2	Engineering Science Courses	19.5
3	Humanities and Social Sciences including Management courses	10
4	Professional core courses	77
5	Professional Elective courses	15
6	Open Elective courses	9
7	Massive Open Online Course	0
8	Project work, seminar and internship in industry or elsewhere	12
9	Mandatory courses [Aptitude and reasoning, Environmental Science, Indian Constitution]	2
	Total	160

F. Semester-wise Credits Distribution

	TOTAL	E1-S1	E1-S2	E2-S1	E2-S2	E3-S1	E3-S2	E4-S1	E4-S2	SUM Intern	AICTE
BSC	15.5	7	5.5	0	3	0	0	0	0	0	25
ESC	19.5	8	11.5	0	0	0	0	0	0	0	24
HSC	10	2.5	0	3	0	1.5	3	0	0	0	12
PCC	77	1.5	3	20	20	18.5	14	0	0	0	48
PEC	15	0	0	0	0	0	3	9	3	0	18
OEC	9	0	0	0	0	0	0	3	6	0	18
MOOC	0	0	0	0	0	0	0	0	0	0	-
MC	2	0	0	0	0	0	0	0	2	0	2
PROJECTS/ INTERNSHIP	12	0	0	0	0	0	0	4	5	3	15
RGUKT Proposed	160	19	20	23	23	20	20	16	16	3	
AICTE	160	17.5	20.5	21	23	21	22	15	16	0	

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Notations:

E1-S1: First Year Engineering First Semester
E1-S2: First Year Engineering Second Semester
E2-S1: Second Year Engineering First Semester
E2-S2: Second Year Engineering Second Semester
E3-S1: Third Year Engineering First Semester
E3-S2: Third Year Engineering Second Semester
E4-S1: Fourth Year Engineering First Semester
E4-S2: Fourth Year Engineering Second Semester
SUM INTERN: Summer Internship Program

CODES:

NAME OF DEPARTMENT	CODE
CHEMICAL	CH
CIVIL	CE
CSE	CS
ECE	EC
MECHANICAL	ME
MME	MM
CHEMISTRY	CY
PHYSICS	PY
MATHEMATICS	MA
ENGLISH	EG
MANGEMENT	BM
BIOSCIENCE	BE

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Subject	01-09(Each Semester we have max 7 subjects including MC)
Lab	81 – 89(each semester we have max 3 Lab)
Professional Elective Courses	21-50
Open Elective Courses	51-70
Massive Open Online Courses	81-90
Summer internships	91
Project-1	92
Project-2	93
Seminar (If any)	94
Mini projects (If any 3 year)	95

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CHAPTER – 2
SEMESTER-WISE STRUCTURE OF CURRICULUM

Mandatory Induction Program

3 Weeks Duration

- Physical activity
- Creative Arts
- Universal Human Values
- Literary
- Proficiency Modules
- Lectures by Eminent people
- Visit to local areas
- Familiarization of Dept./Branch Innovations

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I Year – SEMESTER – I

COURSE STRUCTURE

S. No	Category	Code	Subject Name	L-T-P	Credits
1	BSC	22CY 1102	Engineering Chemistry	3-0-0	3
2	BSC	22MA 1101	Differential Equations and Multivariable Calculus	3-1-0	4
3	ESC	22CS 1108	Basic Programming Language	3-1-0	4
4	ESC	22CE 1114	Engineering Graphics and Computer Drafting	1-0-3	2.5
6	PCC	22 CE 1181	Computer Aided Drafting (CAD) Lab	0-0-3	1.5
5	HSC	22EG 1181	English Language Communication Skills Lab-I	1-0-3	2.5
7	ESC	22CS 1188	Basic Programming Language Lab	0-0-3	1.5
8	MC	22HS XX01	Human Values	2-0-0	0
Total Credits					19

I Year – SEMESTER – II

COURSE STRUCTURE

S. No	Category	Code	Subject Name	L-T-P	Credits
1	ESC	22CS 1213	Advanced Programming Course	3-0-0	3
2	BSC	22MA 1201	Mathematical Methods	3-1-0	4
3	ESC	22EE 1209	Basic Electrical and Electronics Engineering	3-0-0	3
4	ESC	22CE 1201	Engineering Mechanics	3-1-0	4
5	PCC	22CE 1202	Engineering Geology	3-0-0	3
6	BSC	22CS 1285	Advanced Programming Lab	0-0-3	1.5
7	ESC	22ME 1285	Workshop	0-0-3	1.5
8	MC	22BE 1201	Environmental Science	2-0-0	0
Total Credits					20

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II Year – SEMESTER – I

COURSE STRUCTURE

S.No	Category	Code	Subject Name	L-T-P	Credits
1	HSC	22BM 2101	Management Economics and Financial Analysis	3-0-0	3
2	PCC	22CE 2101	Building Materials and Construction	2-1-0	3
3	PCC	22CE 2102	Concrete Technology	2-1-0	3
4	PCC	22CE 2103	Mechanics of Fluids	2-1-0	3
5	PCC	22CE 2104	Mechanics of Materials	3-1-0	4
6	PCC	22CE 2105	Surveying	3-1-0	4
7	PCC	22CE 2181	Mechanics of Materials Lab	0-0-3	1.5
8	PCC	22CE 2182	Surveying Lab	0-0-3	1.5
9	MC	22HS 2101	Indian Constitution	2-0-0	0
Total Credits					23

II Year – SEMESTER – II

COURSE STRUCTURE

S.No	Category	Code	Subject Name	L-T-P	Credits
1	PCC	22CE 2201	Hydraulics Engineering	2-1-0	3
2	PCC	22CE 2202	Environmental Engineering-I	2-1-0	3
3	PCC	22CE 2203	Geo – Technical Engineering – I	3-1-0	4
4	PCC	22CE 2204	Structural Analysis	3-1-0	4
5	PCC	22CE 2205	Water Resources Engineering	2-1-0	3
6	BSC	22MA 2201	Introduction to Probability and Statistics	2-1-0	3
7	PCC	22CE 2281	Hydraulics Engineering Lab	0-0-3	1.5
8	PCC	22CE 2282	Geotechnical Engineering Lab	0-0-3	1.5
Total Credits					23

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III Year – SEMESTER – I

COURSE STRUCTURE

S.No	Category	Code	Subject Name	L-T-P	Credits
1	PCC	22CE 3101	Advanced Structural Analysis	3-1-0	4
2	PCC	22CE 3102	Design of Reinforced concrete Structures	3-1-0	4
3	PCC	22CE 3103	Environmental Engineering-II	2-1-0	3
4	PCC	22CE 3104	Geo Technical Engineering-II	2-1-0	3
5	HSC	22EG 3182	English Language Communication Skills Lab-II	0-0-3	1.5
6	PCC	22CE 3181	Environmental Engineering Lab	0-0-3	1.5
7	PCC	22CE 3182	Concrete Technology Lab	0-0-3	1.5
8	PCC	22CE 3183	Computer Applications in Civil Engineering Lab	0-0-3	1.5
9	MC	22HS31XX	Aptitude & Reasoning	2-0-0	0
Total Credits					20

III Year – SEMESTER – II

COURSE STRUCTURE

S.No	Category	Code	Subject Name	L-T-P	Credits
1	PCC	22CE 3201	Building Planning and Drawing	1-0-3	2.5
2	PCC	22CE 3202	Design of Steel Structures	3-1-0	4
3	PCC	22CE 3203	Transportation Engineering-I	2-1-0	3
4	PCC	22CE 3204	Estimation and Costing	2-1-0	3
5	PEC	22CE XXXX	Professional Elective Course-I	2-1-0	3
6	HSC	22EG 3283	English Language Communication Skills Lab-III	0-0-3	1.5
7	PCC	22CE 3281	Transportation Engineering Lab	0-0-3	1.5
8	HSC	22HS 32XX	Personality and Professional Development Skills	1-0-1	1.5
Total Credits					20

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(CE 3291-SUMMER INTERNSHIP PROJECT - 3 CREDITS)

IV Year – SEMESTER – I

COURSE STRUCTURE

S.No	Category	Code	Subject Name	L-T-P	Credits
1	PEC	22CE 41 XX	Professional Elective Course-2 /MOOC-2	2-1-0	3
2	PEC	22CE 41 XX	Professional Elective Course-3	2-1-0	3
3	PEC	22CE 41 XX	Professional Elective Course-4	2-1-0	3
4	OEC	22XX 41 XX	Open Elective Course-1	3-0-0	3
5	PROJ	22CE 4191	Project-1	0-0-4	4
6	SEM	22CE 4194	Seminar	0-0-4	0
				Total Credits	16

IV Year – SEMESTER – II

COURSE STRUCTURE

S.No	Category	Code	Subject Name	L-T-P	Credits
1	PEC	22CE 42 XX	Professional Elective Course-5	3-0-0	3
2	OEC	22CE 42 XX	Open Elective Course-3/ MOOC-3	3-0-0	3
3	OEC	22XX 42 XX	Open Elective Course-4	3-0-0	3
5	PROJ	22CE 4292	Project-2	0-0-5	5
6	MC	22HS 4299	Indian Community Services	0-0-0	2
				Total Credits	16

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CREDIT DISTRIBUTION

	TOTAL	E1-S1	E1-S2	E2-S1	E2-S2	E3-S1	E3-S2	E4-S1	E4-S2	SUM Intern	AICTE
BSC	15.5	7	5.5	0	3	0	0	0	0	0	25
ESC	19.5	8	11.5	0	0	0	0	0	0	0	24
HSC	10	2.5	0	3	0	1.5	3	0	0	0	12
PCC	77	1.5	3	20	20	18.5	14	0	0	0	48
PEC	15	0	0	0	0	0	3	9	3	0	18
OEC	9	0	0	0	0	0	0	3	6	0	18
MOOC	0	0	0	0	0	0	0	0	0	0	-
MC	2	0	0	0	0	0	0	0	2	0	2
PROJECTS/ INTERNSHIP	12	0	0	0	0	0	0	4	5	3	15
RGUKT Proposed	160	19	20	23	23	20	20	16	16	3	
AICTE	160	17.5	20.5	21	23	21	22	15	16	0	

LIST OF PROFESSIONAL ELECTIVE COURSES

Code	Category	Course Name
		STRUCTURAL ENGINEERING
22CE XX21	PEC	Finite Element Method
22CE XX22	PEC	Stability of Structures
22CE XX23	PEC	Prestressed Concrete Structures
22CE XX24	PEC	Advanced Reinforced Concrete Structures
22CE XX25	PEC	Advanced Concrete Technology
22CE XX26	PEC	Structural Dynamics
22CE XX27	PEC	Bridge Engineering
22CE XX28	PEC	Repair and Rehabilitation of Structures
22CE XX29	PEC	Earthquake Resistant Design
		TRANSPORTATION ENGINEERING
22CE XX30	PEC	Pavement Analysis and Design
22CE XX31	PEC	Urban Transportation and Planning
22CEXX32	PEC	Railways Airport & Harbour Engineering
		HYDRAULICS & WATER RESOURCES ENGINEERING, ENVIRONMENTAL

K. Kumar
Prakash
H. J. Jena
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22CE XX33	PEC	Watershed Management
22CE XX34	PEC	Irrigation and Water Power Engineering
22CE XX35	PEC	Advanced Hydraulics
22CE XX36	PEC	Geo-Informatics
		GEOTECHNICAL ENGINEERING
22CE XX37	PEC	Advanced Foundation Engineering
22CE XX38	PEC	Ground Improvement Techniques
		CONSTRUCTION ENGINEERING
22CE XX39	PEC	Construction Planning and Management
22CE XX40	PEC	Infrastructure Planning and Management
22CE XX41	PEC	Construction Economics and Finance
		GEOINFORMATICS
22CE XX42	PEC	Remote Sensing and GIS
22CEXX43	PEC	Environmental Geotechnics
22CEXX44	PEC	Sustainable Building Materials
22CEXX45	PEC	Functional Efficiency of Buildings
22CEXX46	PEC	Decision Making Methods in Civil Engineering
22CEXX47	PEC	Construction Safety Management
22CEXX48	PEC	Disaster Management
22CEXX49	PEC	Plumbing and Building Services
22CSXX14	PEC	Data science for Civil Engineering with Python

LIST OF OPEN ELECTIVE COURSES		
22CE XX50	OEC	Ground Water Hydrology
22CE XX51	OEC	Water Resources Systems
22CE XX52	OEC	Environmental Management & Impact Assessment
22CE XX53	OEC	Modern Construction Materials
22CE XX54	OEC	Green building and Landscape
22CE XX55	OEC	Civil Engineering Societal & Global Impact
22CEXX56	OEC	Solid and Hazardous Waste management
22CEXX57	OEC	Air Pollution and Control
Courses offered by Civil Engineering to other Departments		
For ECE,EEE, MECH,MME & CHEM		
22CEXX14	ESC	Engineering Graphics and Computer Drafting

*****SYLLABUS START*****

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