

Kongunadu College of Engineering and Technology (Autonomous)

Affiliated to Anna University, Chennai

B.E. Civil Engineering

Regulations: R2024

Choice Based Credit System

I to VIII Semesters Curricula & Syllabi

(Applicable for the students Admitted from 2024-25 Onwards)

Semester I								
S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
1	24MC001	Induction Programme	MC	-	-	-	-	0
Theory								
2	24EN101	Communicative English	HSMC	3	0	0	3	3
3	24MA101	Matrices and Calculus	BSC	3	1	0	4	4
4	24PH101	Engineering Physics	BSC	3	0	2	5	4
5	24CY101	Engineering Chemistry	BSC	3	0	2	5	4
6	24GE102	Engineering Graphics	ESC	3	0	2	5	4
7	24TA101	தமிழர் மரபு / Heritage of Tamils	HSMC	1	0	0	1	1
Practicals								
8	24GE104L	Engineering Practices Laboratory	ESC	0	0	4	4	2
9	24EEC101L	Interpersonal Communication Laboratory	EEC	0	0	2	2	1
Total				16	1	12	29	23

Semester II								
S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
Theory								
1	24EN201	Technical English	HSMC	3	0	0	3	3
2	24MA203	Vector Calculus and Science	BSC	3	1	0	4	4
3	24MC002	Universal Human Values-2 Understanding Harmony	MC	2	1	0	3	3
4	24CY201	Environmental Sciences	BSC	3	0	0	3	3
5	24GE101	Computer Fundamentals and C Programming	ESC	3	0	0	3	3
6	24CE201	Engineering Mechanics	PCC	3	1	0	4	4
7	24TA201	தமிழரும் தொழில்நுட்பமும் / Tamils and Technology	HSMC	1	0	0	1	1
Practicals								
8	24GE103L	C Programming Laboratory	ESC	0	0	3	3	1.5
9	24CE202L	Building Drafting and Modeling Laboratory	PCC	0	0	3	3	1.5
10	24EEC201L	Professional Communication Laboratory	EEC	0	0	2	2	1
Total				18	2	8	29	25

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Semester III								
S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
Theory								
1	24MA303	Transforms and Partial Differential Equations	BSC	3	1	0	4	4
2	24CE301	Strength of Materials-I	PCC	3	0	0	3	3
3	24CE302	Mechanics of Fluids	PCC	3	0	0	3	3
4	24CE303	Surveying	PCC	3	0	0	3	3
5	24CE304	Construction Materials and Technology	PCC	3	0	0	3	3
6	24CE305	Engineering Geology	ESC	3	0	0	3	3
Practicals								
7	24CE306L	Surveying Laboratory	PCC	0	0	2	2	1
8	24EEC301L	Soft Skills Development	EEC	0	0	2	2	1
Total				18	1	4	23	21

Semester IV								
S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
Theory								
1	24MA401	Numerical Methods	BSC	3	1	0	4	4
2	24CE401	Strength of Materials-II	PCC	3	1	0	4	4
3	24CE402	Applied Hydraulic Engineering	PCC	3	0	0	3	3
4	24CE403	Soil Mechanics	PCC	3	0	0	3	3
5	24CE404	Construction Techniques, Equipments and Practice	PCC	3	0	0	3	3
6	24MC003	Constitution of India	MC	2	0	0	2	0
Practicals								
7	24CE405L	Strength of Materials Laboratory	PCC	0	0	2	2	1
8	24CE406L	Hydraulic Engineering Laboratory	PCC	0	0	2	2	1
9	24CE407L	Survey Camp (2 weeks -During III Semester)	PCC	0	0	0	0	1
10	24EEC401L	Life Skills and Personality Development	EEC	0	0	2	2	1
Total				17	2	6	25	21

Semester V								
S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
Theory								
1	24CE501	Design of Reinforced Concrete Structural Elements	PCC	3	1	0	4	4
2	24CE502	Structural Analysis-I	PCC	3	0	0	3	3
3	24CE503	Environmental Engineering-I	PCC	3	0	0	3	3
4	24CE504	Foundation Engineering	PCC	3	0	0	3	3
5		Professional Elective-I	PEC	3	0	0	3	3
6		Open Elective-I	OEC	3	0	0	3	3
Practicals								
7	24CE505L	Geotechnical Engineering Laboratory	PCC	0	0	2	2	1
8	24EEC501L	Professional Skills Development	EEC	0	0	2	2	1
Total				18	1	6	25	21

Semester VI								
S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
Theory								
1	24CE601	Design of Steel Structural Elements	PCC	3	1	0	4	4
2	24CE602	Structural Analysis-II	PCC	3	0	0	3	3
3	24CE603	Environmental Engineering-II	PCC	3	0	2	5	4
4		Professional Elective-II	PEC	3	0	0	3	3
5		Professional Elective-III	PEC	3	0	0	3	3
6		Open Elective-II	OEC	3	0	0	3	3
Practicals								
7	24CE604L	Mini Project-I	EEC	0	0	2	2	1
8	24EEC601L	Employability Skills	EEC	0	0	2	2	1
Total				18	1	4	23	22

Semester VII

S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
Theory								
1	24CE701	Estimation Costing and Valuation Engineering	PCC	3	0	0	3	3
2	24CE702	Transportation Engineering	PCC	3	0	0	3	3
3	24CE703	Concrete Technology	PCC	3	0	0	3	3
4		Professional Elective-IV	PEC	3	0	0	3	3
5		Professional Elective-V	PEC	3	0	0	3	3
Practicals								
6	24CE704L	Concrete and HighwayEngineering Laboratory	PCC	0	0	3	3	1.5
7	24CE705L	Structural Design and Drawing	PCC	0	0	3	3	1.5
8	24CE706L	Mini Project-II	EEC	0	0	2	2	1
Total				15	0	8	23	19

Semester VIII

S. No	Course Code	Course Title	Course Category	No of Periods/Week			Total Contact Periods	Credits
				L	T	P		
Theory								
1		Professional Elective-VI	PEC	3	0	0	3	3
2		Professional Elective - VII	PEC	3	0	0	3	3
Practicals								
3	20CE801L	Project Work	EEC	0	0	20	20	10
Total				6	0	20	26	16

PROFESSIONAL ELECTIVE COURSES: VERTICALS

Vertical 1	Vertical 2	Vertical 3	Vertical 4	Vertical 5	Vertical 6	Vertical 7	Vertical 8
Water Resources	Civil Engineering Management	Environment	Transportation	Structures	Geotechnical	Construction Techniques and Practices	Diversified Course
24CE501PE Integrated Water Resources Management	Engineering Economics	24CE602PE Disaster Management	24CE701PE Intelligent Transportation Systems	24CE708PE Prefabricated Structures	24CE801PE Earth and Rockfill Dams	24CE808PE Maintenance and Repair of Concrete Structures	24CE609PE Irrigation and Environmental Engineering Design and Drawing
24CE502PE Watershed Management	Leadership and Team Effectiveness	24CE603PE Irrigation Engineering	24CE702PE Metro Engineering	24CE709PE Retrofitting and Rehabilitation of Civil Infrastructure	24CE802PE Geo - Environmental Engineering	24CE809PE Energy Efficient Buildings	24CE815PE Admixtures and Special Concretes
24CE503PE Groundwater Engineering	Total Quality Management	24CE604PE Municipal Solid Waste Management	24CE703PE Bridge Engineering	24CE710PE Prestressed Concrete Structures	24CE803PE Marine Geotechnical Engineering	24CE810PE Modern Construction Materials	24CE816PE Soil Pollution Engineering
24CE504PE Rural Water Resources Management	Professional Ethics in Engineering	24CE605PE Wastewater Treatment and Recycling	24CE704PE Traffic Engineering and Management	24CE711PE Design of Masonry Structures	24CE804PE Ground Improvement Techniques	24CE811PE Advanced Construction Techniques	24CE508PE Water Quality and Management
24CE505PE Hydrology and Water Resources Engineering	Safety and Risk Analytics	24CE606PE Air Pollution and Control Engineering	24CE705PE Transportation Planning	24CE712PE Industrial Structures	24CE805PE Earthquake Geotechnical Engineering	24CE812PE Construction Planning and Scheduling	24CE715PE AI in Civil Engineering
24CE506PE Coastal Engineering	Principles of Management	24CE607PE Environmental Impact Assessment	24CE706PE Geometric Design of Highway	24CE713PE Green Construction	24CE806PE Geotextile Engineering	24CE813PE Safety in Civil Engineering Practices	24CE716PE Town Planning and Urban Development
24CE507PE Availability of Management and Groundwater Resources	24CE601PE Construction Management and Safety	24CE608PE Hazardous Waste Management	24CE707PE Pavement Engineering	24CE714PE Structural Dynamics and Earthquake Engineering	24CE807PE Tunnel Engineering	24CE814PE Smart Materials	24CE610PE Environmental Policy and Legislations

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Registration of Professional Elective Courses from Verticals:

- Professional Elective Courses will be registered in Semesters V to VIII. These courses are listed in groups called verticals that represent a particular area of specialization / diversified group. Students are permitted to choose all the Professional Electives from a particular vertical or from different verticals. Further, only one Professional Elective course shall be chosen in a semester horizontally (row-wise). However, two courses are permitted from the same row.
- The registration of courses for B.E./B.Tech (Honours) or Minor degree shall be done from Semester V to VIII. The procedure for registration of courses explained above shall be followed for the courses of B.E./B.Tech (Honours) or Minor degree also.

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Vertical 1: Water Resources

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE501PE	Integrated Water Resources Management	PEC	3	0	0	3
2	24CE502PE	Watershed Management	PEC	3	0	0	3
3	24CE503PE	Groundwater Engineering	PEC	3	0	0	3
4	24CE504PE	Rural Water Resources Management	PEC	3	0	0	3
5	24CE505PE	Hydrology and Water Resources Engineering	PEC	3	0	0	3
6	24CE506PE	Coastal Engineering	PEC	3	0	0	3
7	24CE507PE	Availability of Management and Groundwater Resources	PEC	3	0	0	3

Vertical 2: Civil Engineering Management

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1		Engineering Economics	PEC	3	0	0	3
2		Leadership and Team Effectiveness	PEC	3	0	0	3
3		Total Quality Management	PEC	3	0	0	3
4		Professional Ethics in Engineering	PEC	3	0	0	3
5		Safety and Risk Analytics	PEC	3	0	0	3
6		Principles of Management	PEC	3	0	0	3
7	24CE601PE	Construction Management and Safety	PEC	3	0	0	3

Vertical 3: Environment

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE602PE	Disaster Management	PEC	3	0	0	3
2	24CE603PE	Irrigation Engineering	PEC	3	0	0	3
3	24CE604PE	Municipal Solid Waste Management	PEC	3	0	0	3
4	24CE605PE	Wastewater Treatment & Recycling	PEC	3	0	0	3
5	24CE606PE	Air Pollution and Control Engineering	PEC	3	0	0	3
6	24CE607PE	Environmental Impact Assessment	PEC	3	0	0	3
7	24CE608PE	Hazardous Waste Management	PEC	3	0	0	3

Vertical 4: Transportation

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE701PE	Intelligent Transportation Systems	PEC	3	0	0	3
2	24CE702PE	Metro Engineering	PEC	3	0	0	3
3	24CE703PE	Bridge Engineering	PEC	3	0	0	3
4	24CE704PE	Traffic Engineering and Management	PEC	3	0	0	3
5	24CE705PE	Transportation Planning	PEC	3	0	0	3
6	24CE706PE	Geometric Design of Highway	PEC	3	0	0	3
7	24CE707PE	Pavement Engineering	PEC	3	0	0	3

Vertical 5: Structures

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE708PE	Prefabricated Structures	PEC	3	0	0	3
2	24CE709PE	Retrofitting and Rehabilitation of Civil Infrastructure	PEC	3	0	0	3
3	24CE710PE	Prestressed Concrete Structures	PEC	3	0	0	3
4	24CE711PE	Design of Masonry Structures	PEC	3	0	0	3
5	24CE712PE	Industrial Structures	PEC	3	0	0	3
6	24CE713PE	Green Construction	PEC	3	0	0	3
7	24CE714PE	Structural Dynamics and Earthquake Engineering	PEC	3	0	0	3

Vertical 6: Geotechnical

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE801PE	Earth and Rockfill Dams	PEC	3	0	0	3
2	24CE802PE	Geo - Environmental Engineering	PEC	3	0	0	3
3	24CE803PE	Marine Geotechnical Engineering	PEC	3	0	0	3
4	24CE804PE	Ground Improvement Techniques	PEC	3	0	0	3
5	24CE805PE	Earthquake Geotechnical Engineering	PEC	3	0	0	3
6	24CE806PE	Geotextile Engineering	PEC	3	0	0	3
7	24CE807PE	Tunnel Engineering	PEC	3	0	0	3

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Vertical 7: Construction Techniques and Practices

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE808PE	Maintenance and Repair of Concrete Structures	PEC	3	0	0	3
2	24CE809PE	Energy Efficient Buildings	PEC	3	0	0	3
3	24CE810PE	Modern Construction Materials	PEC	3	0	0	3
4	24CE811PE	Advanced Construction Techniques	PEC	3	0	0	3
5	24CE812PE	Construction Planning and Scheduling	PEC	3	0	0	3
6	24CE813PE	Safety in Civil Engineering Practices	PEC	3	0	0	3
7	24CE814PE	Smart Materials	PEC	3	0	0	3

Vertical 8: Diversified Course

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE609PE	Irrigation and Environmental Engineering Design and Drawing	PEC	3	0	0	3
2	24CE815PE	Admixtures and Special Concretes	PEC	3	0	0	3
3	24CE816PE	Soil Pollution Engineering	PEC	3	0	0	3
4	24CE508PE	Water Quality and Management	PEC	3	0	0	3
5	24CE715PE	AI in Civil Engineering	PEC	3	0	0	3
6	24CE716PE	Town Planning and Urban Development	PEC	3	0	0	3
7	24CE610PE	Environmental Policy and Legislations	PEC	3	0	0	3

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Open Elective Course (OEC)

(Students shall choose the open elective courses, such that the course contents are not similar to any other course contents/title under other course categories)

Semester V

Open Elective - I

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE501OE	Industrial Waste Management	OEC	3	0	0	3
2	24CE502OE	Ecological Engineering	OEC	3	0	0	3
3			OEC	3	0	0	3
4			OEC	3	0	0	3
5			OEC	3	0	0	3
6			OEC	3	0	0	3
7			OEC	3	0	0	3
8			OEC	3	0	0	3
9			OEC	3	0	0	3
10			OEC	3	0	0	3
11			OEC	3	0	0	3
12			OEC	3	0	0	3

Semester VI

Open Elective - II

S. No	Course Code	Course Title	Course Category	No of Hours/Week			Credit
				L	T	P	
1	24CE601OE	Global Warming and Climate Change	OEC	3	0	0	3
2	24CE602OE	Building Services	OEC	3	0	0	3
3			OEC	3	0	0	3
4			OEC	3	0	0	3
5			OEC	3	0	0	3
6			OEC	3	0	0	3
7			OEC	3	0	0	3
8			OEC	3	0	0	3
9			OEC	3	0	0	3
10			OEC	3	0	0	3
11			OEC	3	0	0	3
12			OEC	3	0	0	3

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SUMMARY

S No	Course Category	Credits As Per Semester								Total Credit		Percentage
		I	II	III	IV	V	VI	VII	VIII	As per Syllabus	As Per AICTE Model	
1.	HSMC	4	4	-	-	-	-	-	-	8	6	4.76
2.	BSC	12	7	4	4	-	-	-	-	27	24	16.07
3.	ESC	6	4.5	3	-	-	-	-	-	13.5	20	8.03
4.	EEC	1	1	1	1	1	2	1	10	18	16	10.71
5.	PCC	-	5.5	13	16	14	11	12	-	71.5	62	42.55
6.	PEC	-	-	-	-	3	6	6	6	21	26	12.50
7.	OEC	-	-	-	-	3	3	-	-	6	12	3.57
8.	MC	-	3	-	-	-	-	-	-	3	2	1.78
Total		23	25	21	21	21	22	19	16	168	168	100

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ENROLLMENT FOR B.E. / B. TECH. (HONOURS) / MINOR DEGREE (OPTIONAL)

- A student can also optionally register for additional courses (18 credits) and become eligible for the award of B.E. / B. Tech. (Honours) or Minor Degree.
- For B.E. / B. Tech. (Honours), a student shall register for the additional courses (18 credits) from semester V onwards. These courses shall be from the same vertical or a combination of different verticals of the same programme of study only.
- For minor degree, a student shall register for the additional courses (18 credits) from semester V onwards. All these courses have to be in a particular vertical from any one of the other programmes, Moreover, for minor degree the student can register for courses from any one of the following verticals also.

Vertical for Minor Degree
(In addition to all the verticals of other programmes)

Vertical 1	Vertical 2	Vertical 3	Vertical 4	Vertical 5
Fintech and Block Chain	Entrepreneurship	Public Administration	Business Data Analytics	Environment and Sustainability
Financial Management	Foundations of Entrepreneurship	Principles of Public Administration	Statistics for Management	Sustainable infrastructure Development
Fundamentals of Investment	Team Building and Leadership Management for Business	Elements of Administration	Data mining for Business Intelligence	Sustainable Agriculture and Environmental Management
Banking, Financial Services and Insurance	Creativity and Innovation in Entrepreneurship	Public Personnel Administration	Human Resource Analytics	Sustainable Bio Materials
Introduction to Blockchain and its Applications	Principles of Marketing Management for Business	Administrative Theories	Marketing and Social Media Web Analytics	Materials for Energy Sustainability
Fintech Personal Finance and Payments	Human Resource Management for Entrepreneurs	Indian Administrative System	Operation and Supply Chain Analytics	Green Technology
Introduction to Fintech	Financing New Business Ventures	Public Policy Administration	Financial Analytics	Environmental Quality Monitoring and Analysis
-	-	-	-	Integrated Energy Planning for Sustainable Development
-	-	-	-	Energy Efficiency for Sustainable Development

(Choice of courses for Minor degree is to be made from any one vertical of other programmes or from anyone of the following verticals)

VERTICAL 1: FINTECH AND BLOCK CHAIN

S.No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	24M101	Financial Management	PEC	3	0	0	3
2	24M102	Fundamentals of Investment	PEC	3	0	0	3
3	24M103	Banking, Financial Services and Insurance	PEC	3	0	0	3
4	24M104	Introduction to Blockchain and its Applications	PEC	3	0	0	3
5	24M105	Fintech Personal Finance and Payments	PEC	3	0	0	3
6	24M106	Introduction to Fintech	PEC	3	0	0	3

VERTICAL 2: ENTREPRENEURSHIP

S.No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	24M201	Foundations of Entrepreneurship	PEC	3	0	0	3
2	24M202	Team Building and Leadership Management for Business	PEC	3	0	0	3
3	24M203	Creativity and Innovation in Entrepreneurship	PEC	3	0	0	3
4	24M204	Principles of Marketing Management for Business	PEC	3	0	0	3
5	24M205	Human Resource Management for Entrepreneurs	PEC	3	0	0	3
6	24M206	Financing New Business Ventures	PEC	3	0	0	3

VERTICAL 3: PUBLIC ADMINISTRATION

S.No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	24M301	Principles of Public Administration	PEC	3	0	0	3
2	24M302	Elements of Administration	PEC	3	0	0	3
3	24M303	Public Personnel Administration	PEC	3	0	0	3
4	24M304	Administrative Theories	PEC	3	0	0	3
5	24M305	Indian Administrative System	PEC	3	0	0	3
6	24M306	Public Policy Administration	PEC	3	0	0	3

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VERTICAL 4: BUSINESS DATA ANALYTICS

S.No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	24M401	Statistics for Management	PEC	3	0	0	3
2	24M402	Data Mining for Business Intelligence	PEC	3	0	0	3
3	24M403	Human Resource Analytics	PEC	3	0	0	3
4	24M404	Marketing and Social Media Web Analytics	PEC	3	0	0	3
5	24M405	Operation and Supply Chain Analytics	PEC	3	0	0	3
6	24M406	Financial Analytics	PEC	3	0	0	3

VERTICAL 5: ENVIRONMENT AND SUSTAINABILITY

S.No.	Course Code	Course Title	Course Category	No. of Hours/Week			Credit
				L	T	P	
1	24M501	Sustainable infrastructure Development	PEC	3	0	0	3
2	24M502	Sustainable Agriculture and Environmental Management	PEC	3	0	0	3
3	24M503	Sustainable Bio Materials	PEC	3	0	0	3
4	24M504	Materials for Energy Sustainability	PEC	3	0	0	3
5	24M505	Green Technology	PEC	3	0	0	3
6	24M506	Environmental Quality Monitoring and Analysis	PEC	3	0	0	3
7	24M507	Integrated Energy Planning for Sustainable Development	PEC	3	0	0	3
8	24M508	Energy Efficiency for Sustainable Development	PEC	3	0	0	3