



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

(An Autonomous Institute under Kakatiya University, Warangal)

(Approved by AICTE, New Delhi; Recognised by UGC under 2(f) & 12(B); Sponsored by EKASILA EDUCATION SOCIETY)

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA.

काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫

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VISION OF THE INSTITUTE

- To make our students technologically superior and ethically strong by providing quality education with the help of our dedicated faculty and staff and thus improve the quality of human life

MISSION OF THE INSTITUTE

- To provide latest technical knowledge, analytical and practical skills, managerial competence and interactive abilities to students, so that their employability is enhanced
- To provide a strong human resource base for catering to the changing needs of the Industry and Commerce
- To inculcate a sense of brotherhood and national integrity

DEPARTMENT OF CIVIL ENGINEERING

VISION OF THE DEPARTMENT

- The Vision of the department is to become a leading centre of excellence in producing quality human resource in civil engineering by developing a sustainable technical education system to meet the changing technological needs of the Country. The Department will make significant contributions to the economic development of the state, region and nation.

MISSION OF THE DEPARTMENT

- The Mission of Civil Engineering Department is to produce outstanding Civil Engineering graduates with highest ethics.
- To impart quality education in civil engineering to raise satisfaction Level of all Stake holders.
- To serve society and the nation by providing professional civil Engineering Leadership to find solution to community, regional and Global problems and accept new challenges in rapidly changing Technology.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

UG - CIVIL ENGINEERING - CE

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	Within first few years after graduation, the CIVIL ENGINEERING graduates will be able to ...
PEO1: Technical Expertise	Demonstrate professional competency in varied fields of engineering industry and/or pursue higher education by nourishing mathematical scientific and engineering precepts.
PEO2: Successful Career	Investigate, analyze and design solutions to complex civil engineering problems ensuring safety, sustainability and ecological harmony.

PEO3: Soft Skills and Professionalism	<i>Exhibit professionalism by transferring latest technology and understanding societal impacts to protect interests of the public at large.</i>
PEO4: Life Long Learning	<i>Develop competence by engaging in lifelong learning, in order to integrate ethics, economics and equity.</i>

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)	
UG - CIVIL ENGINEERING - CE	
PROGRAM OUTCOMES (POs)	At the time of graduation, the CIVIL ENGINEERING graduates will be able to ...
PO1: Engineering knowledge	<i>apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems</i>
PO2: Problem analysis	<i>identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences</i>
PO3: Design/development of solutions	<i>design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental Considerations</i>
PO4: Conduct investigations of complex problems	<i>use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions</i>
PO5: Modern tool usage	<i>create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations</i>
PO6: The engineer and society	<i>apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice</i>
PO7: Environment and sustainability	<i>understand the impact of the professional engineering solutions in societal and environmental contexts, demonstrate the knowledge of, and need for sustainable development</i>
PO8: Ethics	<i>apply ethical principles and commit to professional ethics, responsibilities, and norms of the engineering practice</i>
PO9: Individual and team work	<i>function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings</i>
PO10: Communication	<i>communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions</i>
PO11: Project management and finance	<i>demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments</i>
PO12: Life-long learning	<i>recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change</i>
PROGRAM SPECIFIC OUTCOMES (PSOs):	
PSO1	<i>Apply fundamental computational methods and elementary analytical techniques in sub-disciplines related to civil engineering</i>

PSO2	<i>Design civil engineering structures, component or process to meet desired needs with appropriate consideration for the public health and safety, cultural, societal, sustainability and environmental considerations</i>
PSO3	<i>Appreciate professional and ethical responsibility concerning legal, contemporary, environmental & cultural issues and consequent responsibilities relevant to the professional engineering practices and norms of civil engineering practice code</i>
PSO4	<i>Appreciate the role of research in civil engineering practice and recognize the need for and to engage in life-long learning in civil engineering and allied domains as relevant to rapidly changing technology</i>

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL-15

(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTIONS & EVALUATION FOR B.TECH. 4-YEAR DEGREE PROGRAMME

BRANCH : B.Tech. - CE/ EIE/ EEE/ ECE (Stream - II)

SEMESTER : FIRST

Sl.No	Course Category	Course Code	Course Name	Periods/week			Credits	Evaluation Scheme				
				L	T	P		C	CIE			ESE
							TA		MSE	Total		
1	BSC	U18MH101	Engineering Mathematics - I	3	1	-	4	10	30	40	60	100
2	ESC	U18CS102	Programming for Problem Solving using C	3	-	-	3	10	30	40	60	100
3	BSC	U18CH103	Engineering Chemistry	3	1	-	4	10	30	40	60	100
4	ESC	U18ME104	Engineering Drawing	2	-	4	4	10	30	40	60	100
5	ESC	U18CE105	Engineering Mechanics	3	1	-	4	10	30	40	60	100
6	ESC	U18CS107	Programming for Problem Solving using C Laboratory	-	-	2	1	40	-	40	60	100
7	BSC	U18CH108	Engineering Chemistry Laboratory	-	-	2	1	40	-	40	60	100
8	MC	U18CH109	Environmental Studies*	2	-	-	-	10	30	40	60	100
9	MC	U18EA110	EAA* : Sports/Yoga/NSS	-	-	2	-	100	-	100	-	100
10	MC	U18MH111	Universal Human Values - I (Induction Programme)	-	-	-	-	-	-	-	-	-
Total				16	3	10	21	240	180	420	480	900

Note: L - Lectures; T - Tutorials; P - Practicals; CIE- Continuous Internal Evaluation; TA - Teachers Assessment;

MSE - Mid Semester Examination; ESE- End Semester Examination; EAA - Extra Academic Activity;

* indicates mandatory non-credit course

Student Contact Hours / Week : 29 (periods/week)

Total Credits (C) : 21 Credits

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL-15

(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTIONS & EVALUATION FOR B.TECH. 4-YEAR DEGREE PROGRAMME

BRANCH : B.Tech. - CE / EIE / EEE / ECE (Stream - II)

SEMESTER : SECOND

Sl. No	Course Category	Course Code	Course Name	Periods/week			Credits	Evaluation Scheme				
				L	T	P		C	CIE			ESE
							TA		MSE	Total		
1	BSC	U18MH201	Engineering Mathematics - II	3	1	-	4	10	30	40	60	100
2	ESC	U18CS202	Data Structures through C	3	-	-	3	10	30	40	60	100
3	BSC	U18PH203	Engineering Physics	3	1	-	4	10	30	40	60	100
4	HSMC	U18MH204	English for Communication	2	-	2	3	10	30	40	60	100
5	ESC	U18EE205	Basic Electrical Engineering	3	1	-	4	10	30	40	60	100
6	ESC	U18EE206	Basic Electrical Engineering Laboratory	-	-	2	1	40	-	40	60	100
7	ESC	U18CS207	Data Structures through C Laboratory	-	-	2	1	40	-	40	60	100
8	BSC	U18PH208	Engineering Physics Laboratory	-	-	2	1	40	-	40	60	100
9	ESC	U18ME209	Workshop Practice	-	-	2	1	40	-	40	60	100
10	MC	U18EA210	EAA* : Sports/Yoga/NSS	-	-	2	-	100	-	100	-	100
Total				14	3	12	22	310	150	460	540	1000

Note: L - Lectures; T - Tutorials; P - Practicals; CIE- Continuous Internal Evaluation; TA - Teachers Assessment;

MSE - Mid Semester Examination; ESE- End Semester Examination; EAA - Extra Academic Activity;

* indicates mandatory non-credit course

Student Contact Hours / Week : 29 (periods/week)

Total Credits (C) : 22 Credits

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE, WARANGAL

(An Autonomous Institute under Kakatiya University, Warangal)

DEPARTMENT OF CIVIL ENGINEERING

SCHEME OF INSTRUCTION & EVALUATION

III SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAMME

Sl. No	Category	Course Code	Course Title	Periods/week			Credits	Evaluation scheme				
				L	T	P		C	CIE			ESE
							TA		MSE	Total		
1	BSC	U18MH301	Engineering Mathematics - III	3	1	-	4	10	30	40	60	100
2	HSMC	U18TP302	Soft & Interpersonal Skills	-	-	2	1	100	-	100	-	100
3	OE	U18OE303	Open Elective-I	3	-	-	3	10	30	40	60	100
4	PCC	U18CE304	Fluid Mechanics	3	-	-	3	10	30	40	60	100
5	PCC	U18CE305	Surveying	3	-	-	3	10	30	40	60	100
6	PCC	U18CE306	Construction Materials	3	-	-	3	10	30	40	60	100
7	PCC	U18CE307	Concrete Technology Laboratory	-	-	2	1	40	-	40	60	100
8	PCC	U18CE308	Surveying Field Work-I	-	-	2	1	40	-	40	60	100
9	OE	U18OE311	Open Elective-I based Laboratory	-	-	2	1	40	-	40	60	100
Total				15	1	8	20	270	150	420	480	900

[L= Lecture, T = Tutorials, P = Practicals & C = Credits] Stream-I CSE,IT,ME

Stream-II EEE, ECE, EIE,CE

Total Contact Periods/Week:24

Total Credits :20

<p>Open Elective-I: U18OE303A: Object Oriented Programming (CSE) U18OE303B: Fluid Mechanics & Hydraulic Machines (CE) U18OE303C: Fundamentals of Mechatronics (ME) U18OE303D: Web Programming (IT) U18OE303E: Microprocessors (ECE) U18OE303F: Strength of Materials (CE)</p>	<p>Open Elective-I based Lab: U18OE311A: Object Oriented Programming Lab (CSE) U18OE311B: Fluid Mechanics & Hydraulic Machines Lab (CE) U18OE311C: Mechatronics Lab (ME) U18OE311D: Web Programming Lab (IT) U18OE311E: Microprocessors Lab (ECE) U18OE311F: Strength of Materials Lab(CE)</p>
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DEPARTMENT OF CIVIL ENGINEERING

SCHEME OF INSTRUCTION & EVALUATION

IV SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAMME

Sl. No	Category	Course Code	Course Title	Periods/week			Credits	Evaluation scheme				
				L	T	P		C	CIE			ESE
							TA		MSE	Total		
1	OE	U18OE401	Open Elective-II	3	1	-	4	10	30	40	60	100
2	HSMC	U18MH402	Professional English	-	-	2	1	100	-	100	-	100
3	PCC	U18CE403	Mechanics of Materials	3	1	-	4	10	30	40	60	100
4	PCC	U18CE404	Hydraulics Engineering	3	-	-	3	10	30	40	60	100
5	PCC	U18CE405	Design of Reinforced Concrete Structures	3	1	-	4	10	30	40	60	100
6	PCC	U18CE406	Engineering Geology	3	-	-	3	10	30	40	60	100
7	PCC	U18CE407	Hydraulic and Hydraulic Machinery Laboratory	-	-	2	1	40	-	40	60	100
8	PCC	U18CE408	Engineering Geology Laboratory	-	-	2	1	40	-	40	60	100
9	PCC	U18CE409	Surveying Field Work-II	-	-	2	1	40	-	40	60	100
10	MC	U18MH415	Essence of Indian Traditional Knowledge	2	-	-	-	10	30	40	60	100
Total:				17	3	8	22	280	180	460	540	900
11	MC	U18CH416	Environmental Studies*	2	-	-	-	10	30	40	60	100

[L= Lecture, T = Tutorials, P = Practicals & C = Credits]

Stream-I: CSE, CSN, IT, ME

Stream-II: EEE, ECE, EIE, CE, ECI

Total Contact Periods/Week : 28

Total Credits : 22

**For Lateral entry students only*

Open Elective-II:

U18OE401A: Applicable Mathematics (MH)

U18OE401B: Basic Electronics Engineering (ECE)

U18OE401C: Elements of Mechanical Engineering (ME)

U18OE401D: Measurements & Instrumentation (EIE)

U18OE401E: Computer Networks (IT)

U18OE401F: Renewable Energy Sources (EEE)

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DEPARTMENT OF CIVIL ENGINEERING

SCHEME OF INSTRUCTION & EVALUATION

V SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAMME

Sl. No	Category	Course Code	Course Title	Periods/week			Credits	Evaluation Scheme				
				L	T	P		C	CIE			ESE
							TA		MSE	Total		
1	MC	U18MH501	Universal Human Values - II*	2	-	-	-	10	30	40	60	100
2	PE	U18CE502	Professional Elective - I / MOOC-I	3	-	-	3	10	30	40	60	100
3	PCC	U18CE503	Structural Analysis	3	-	-	3	10	30	40	60	100
4	PCC	U18CE504	Environmental Engineering	3	-	-	3	10	30	40	60	100
5	PCC	U18CE505	Soil Mechanics	3	-	-	3	10	30	40	60	100
6	PCC	U18CE506	Design of Steel Structures	3	-	-	3	10	30	40	60	100
7	PCC	U18CE507	Environmental Engineering Laboratory	-	-	2	1	40	-	40	60	100
8	PCC	U18CE508	Soil Mechanics Laboratory	-	-	2	1	40	-	40	60	100
9	PCC	U18CE509	Building Planning and Drawing Laboratory	-	-	2	1	40	-	40	60	100
10	PROJ	U18CE510	Seminar	-	-	2	1	100	-	100	--	100
Total				17	-	8	19	280	180	460	540	1000
<i>Additional Learning*:Maximum credits allowed for Honours/Minor</i>				-	-	-	7	-	-	-	-	-
Total credits for Honours/Minor students:							19+7					

- List of courses for additional learning through MOOCs towards Honours/Minor in Engineering shall be prescribed by the department under Honours/Minor Curricula

[L= Lecture, T = Tutorials, P = Practical's & C = Credits]

Total Contact Periods/Week: 25

<p>Professional Elective-I/MOOC-I: U18CE502A: Advanced Concrete Technology U18CE502B: Advanced Surveying U18CE502C: Water shed Management U18CE502M: MOOCs</p>

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URR18 - R22

**DEPARTMENT OF CIVIL ENGINEERING
SCHEME OF INSTRUCTION & EVALUATION
VI SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAMME**

VI – Semester (New Proposal)

Sl.No	Category	Course Code	Course Title	Periods/week			Credits	Evaluation Scheme					
				L	T	P		C	CIE			ESE	Total Marks
									TA	MSE	Total		
1	HSMC	U18TP601	Quantitative Aptitude & Logical Reasoning	2	-	-	1	10	30	40	60	100	
2	ESC	U18CS611	Advance Data Structures	3	-	-	3	10	30	40	60	100	
3	PE	U18CE603	Professional Elective-II/MOOC-II	3	-	-	3	10	30	40	60	100	
4	PCC	U18CE604	Estimation and Valuation	1	2	-	3	10	30	40	60	100	
5	PCC	U18CE605	Hydrology and Water Resources Engineering	3	-	-	3	10	30	40	60	100	
6	PCC	U18CE606	Construction Management and Equipment	3	-	-	3	10	30	40	60	100	
7	ESC	U18IT611	Object Oriented Programming through JAVA	3	-	-	3	10	30	40	60	100	
8	PCC	U18CE607	Structural Engineering Detailing Laboratory	-	-	2	1	40	-	40	60	100	
9	ESC	U18IT612	JAVA Programming Laboratory	-	-	2	1	40	-	40	60	100	
10	ESC	U18CS612	Advance Data Structures Lab	-	-	2	1	40	-	40	60	100	
11	PROJ	U18CE608	Mini Project	-	-	2	1	100	-	100	--	100	
Total				18	2	8	23	250	210	460	540	1000	
<i>Additional Learning*: Maximum credits allowed for Honours /Minor</i>				-	-	-	7	-	-	-	-	-	
Total credits for Honours/Minor students:				-	-	-	23+7	-	-	-	-	-	

- List of courses for additional learning through MOOCs towards Honours/Minor in Engineering shall be prescribed by the department under Honours/Minor Curricula

[L=Lecture, T=Tutorials, P= Practical's & C=Credits]

Total Contact Periods/Week: 27

Professional Elective-II / MOOC-II U18CE603A: Advanced Analysis of Structures U18CE603B: Ground Improvement Techniques	U18CE603C: Advanced Environmental Engineering U18CE603M: MOOCs
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DEPARTMENT OF CIVIL ENGINEERING

SCHEME OF INSTRUCTION & EVALUATION

VII SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAMME

VII- Semester (New Proposal)

Sl.No	Category	Course Code	Course Title	Periods/week			Credits	Evaluation Scheme				
				L	T	P		C	CIE			ESE
							TA		MSE	Total		
1	OE	U18OE701	Open Elective-III	3	-	-	3	10	30	40	60	100
2	PE	U18CE702	Professional Elective-III/MOOC-III	3	-	-	3	10	30	40	60	100
3	PE	U18CE703	Professional Elective-IV/MOOC-IV	3	-	-	3	10	30	40	60	100
4	PCC	U18CE704	Highway Engineering	3	-	-	3	10	30	40	60	100
5	PCC	U18CE705	Highway Engineering Laboratory	-	-	2	1	40	-	40	60	100
6	PCC	U18CE706	Civil Engineering Software Applications Laboratory	-	-	2	1	40	-	40	60	100
7	PROJ	U18CE707	Major Project-Phase-I	-	-	6	3	100	-	100	-	100
8	MC	U18CE708	Internship Evaluation*	-	-	2	-	100	-	100	-	100
Total				12	-	12	17	320	120	440	360	800
<i>Additional Learning*: Maximum credits allowed for Honours/Minor</i>				-	-	-	7	-	-	-	-	-
<i>Total credits for Honours/Minor students:</i>				-	-	-	17+7	-	-	-	-	-

- List of courses for additional learning through MOOCs towards Honours/Minor in Engineering shall be prescribed by the department under Honours/Minor Curricula

[L=Lecture, T=Tutorials, P= Practical's & C=Credits]

Total Contact Periods/Week: 24

Open Elective-III: U18OE701A: Disaster Management U18OE701B: Project Management U18OE701C: Professional Ethics in Engineering U18OE701D: Management Economics and Accountancy	Professional Elective-III/MOOC-III: U18CE702A: Advanced Structural Design U18CE702B: Hydraulic Structures U18CE702C: Sustainable Materials and Green Buildings U18CE702M: MOOCs	Professional Elective-IV/MOOC-IV: U18CE703A: Structural Dynamics U18CE703B: Foundation Engineering U18CE703C: Repair and Rehabilitation of Structures U18CE703M: MOOCs
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KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE, WARANGAL
 (An Autonomous Institute under Kakatiya University, Warangal)
DEPARTMENT OF CIVIL ENGINEERING
SCHEME OF INSTRUCTION & EVALUATION
VIII SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAMME

Sl.No	Category	Course Code	Course Title	Periods/week			Credits	Evaluation Scheme				
				L	T	P		C	CIE			ESE
							TA		MS	Total		
1	PE	U18CE801	Professional Elective-V/MOOC-V	3	-	-	3	10	30	40	60	100
2	PE	U18CE802	Professional Elective-VI/MOOC-VI	3	-	-	3	10	30	40	60	100
3	OE	U18OE803	Open Elective-IV /MOOC-VII	3	-	-	3	10	30	40	60	100
4	PROJ	U18CE804	Major Project-Phase-II	-	-	14	7	40	-	40	60	100
Total:				9	-	14	16	70	90	160	240	400
<i>Additional Learning*: Maximum credits allowed for Honours/Minor</i>				-	-	-	7	-	-	-	-	-
<i>Total credits for Honours/Minor students:</i>				-	-	-	16+7	-	-	-	-	-

- List of courses for additional learning through MOOC towards Honours/Minor in Engineering shall be prescribed by the department under Honours/Minor Curricula

[L=Lecture, T=Tutorials, P=Practical's & C=Credits]

Total Contact Periods/Week: 23

Total Credits: 16

Professional Elective-V/MOOC-V: U18CE801A: Prestressed Concrete U18CE801B: Railway and Airport Engineering U18CE801C: Construction Contracts Management U18CE801M: MOOCs	Professional Elective-VI/MOOC-VI: U18CE802A: Earthquake Resistant Design of Structures U18CE802B: Earth Retaining Structures U18CE802C: Bridge Engineering U18CE802M: MOOCs	Open Elective-IV/MOOC-VII: U18OE803A: Operations Research U18OE803B: Management Information Systems U18OE803C: Entrepreneurship Development U18OE803D: Forex and Foreign Trade U18OE803M: MOOCs
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