

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Opp : Yerragattu Gutta, Hasanparthy (Mandal), WARANGAL - 506 015, Telangana, INDIA. काकतीय प्रैद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५ तेलंगाना, भारत පාර්ම් කිට බිනු නි පැරූ විස්තුවෙණට, ක්රෙර්ණ - අරුදු රෙය මෙංගක, ආර්යේණා

(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)

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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 ELECTRONICS AND COMMUNICATION ENGINEERING

VISION OF THE DEPARTMENT

■ Develop the department into a full-fledged center of learning in various fields of Electronics and Communication Engineering in pursuit of excellence in Education, Research, Entrepreneurship and Technological services to the society

MISSION OF THE DEPARTMENT

- Imparting quality education to develop innovative and entrepreneurial professionals fit for globally competitive environment
- To nurture the students in the field of Electronics and Communication Engineering with an overall background suitable for attaining a successful career in higher education, research and industry

PROGRA	AM EDUCATIONAL OBJECTIVES (PEOs)
UG - ELECTRON	NICS AND COMMUNICATION ENGINEERING - ECE
PROGRAM EDUCATIONAL	Within first few years after graduation, the ELECTRONICS AND
OBJECTIVES (PEOs)	COMMUNICATION ENGINEERING graduates will be able to
PEO1:	building on fundamental knowledge, graduate should continue develop technical
Technical Expertise	skills within and across disciplines in electronics and communication
	engineering for productive and successful career maintaining professional ethics
PEO2:	graduates should develop and exercise their capabilities to demonstrate their
Successful Career	creativity in engineering practice and team work with increasing responsibility
	and leadership
PEO3:	graduates should refine their knowledge and skills to attain professional
Soft Skills and Life Long	competence through lifelong learning such as higher education, advanced
Learning	degrees and professional activities

PROGRAM	OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)
UG - EL	ECTRONICS AND COMMUNICATION ENGINEERING - ECE
PROGRAM	At the time of graduation, the Electronics and Communication Engineering
OUTCOMES (POs)	graduates will be able to
PO1: Engineering	apply the knowledge of mathematics, science, engineering fundamentals, and an engineering
Knowledge	specialization to the solution of complex engineering problems.
PO2: Problem analysis	identify, formulate, review research literature, and analyze complex engineering problems
	reaching substantiated conclusions using first principles of mathematics, natural sciences, and
	engineering sciences
PO3: Design/developme	
of solutions	that meet the specified needs with appropriate consideration for the public health and safety,
	and the cultural, societal, and environmental considerations.
PO4: Conduct	use research-based knowledge and research methods including design of experiments, analysis
investigations of	and interpretation of data, and synthesis of the information to provide valid conclusions.
complex problems PO5: Modern tool usage	
ros: Modern tool usage	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.
PO6: The engineer and	apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal
society	and cultural issues and the consequent responsibilities relevant to the professional engineering
Society	practice.
PO7: Environment and	understand the impact of the professional engineering solutions in societal and environmental
sustainability	contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8: Ethics	apply ethical principles and commit to professional ethics, responsibilities, and norms of the
	engineering practice
PO9: Individual and tea	function effectively as an individual, and as a member or leader in diverse teams, and in
work	multidisciplinary settings
PO10: Communication	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
PO11: Project	demonstrate knowledge and understanding of the engineering and management principles and
management and	apply these to one's own work, as a member and leader in a team, to manage projects and in
finance	multidisciplinary environments
PO12: Life-long learning	g recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change
PROCRAM SPECIEIA	C OUTCOMES (PSOs):
	, ,
PSO1	readiness for immediate professional practice.
PSO2	an ability to use fundamental knowledge to investigate new and emerging technologies leading to
	innovations.

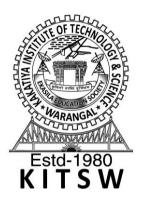
URR-18

(Applicable from the Academic Year 2018-19)

B.Tech. ELECTRONICS AND COMMUNICATION ENGINEERING (ECE) AUTONOMOUS - REVISED SCHEME & SYLLABI (URR'18)

(w.e.f. 2018-19) Of

B.Tech ECE SYLLABI (I to VIII SEMESTERS)



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL-15

(An Autonomous Institution under Kakatiya University)



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/EEE/ECE/ECI/CSE (AI &ML) (Stream - II)

SEMESTER: FIRST

				Ηοι	ır per v	week	Credits		Eval	uation S	Scheme	
S1. No	Category	Course Code	Course Title						CIE		ESE	Total
110		Coue		L	T	P	C	TA	MSE	Total	ESE	Marks
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	-	-	2	1	40	-	40	60	100
			Laboratory									
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	U18EA111	Universal Human Values-I (Induction Program)	-	-	-	-	-	-	-	-	-
			Total	16	3	10	21	240	180	420	480	900

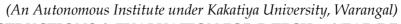
L - Lectures; T - Tutorials; P - Practicals C = Credits

EAA - Extra Academic Activity

* indicates mandatory non-credit course

Contact hours per Week : 29 Total Credits : 21

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL-15





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

BRANCH: B.Tech. - CE / EEE / ECE/ECI/CSE (AI &ML) (Stream - II) SEMESTER: SECOND

Sl.No	Category	Course		Hour	per w	eek	Credits		Evalu	Scheme								
		Code	Course Title	т	т	n	C	CIE		CIE							ESE	Total
				L	1	P	C	TA	MSE	Total	ESE	Marks						
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	1	40	60	100						
8	BSC	U18PH208	Engineering Physics Laboratory	-	-	2	1	40	1	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						

L - Lectures; T - Tutorials; P - Practicals & Credits

EAA - Extra Academic Activity

* indicates mandatory non-credit course

Contact hours per Week: 29
Total Credits: 22



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL - 15

(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION & EVALUATION

III SEMESTER OF 4-YEAR B.TECH ECE DEGREE PROGRAM

III - Semester [Second year

[6Th+2P+1M]

Sl.No	Category	Course Code	Course Title	Hour per week Credi			Credits		Eva	luation	Scheme		
				L	Т	Р			CIE		ESE	Total	
				L	-	•		TA	MSE	Total	LOL	Marks	
1	BSC	U18MH301	Engineering Mathematics - III	3	1	-	4	10	30	40	60	100	
2	HSMC	U18TP302	Soft and Interpersonal Skills	-	-	2	1	100		100	-	100	
3	OE	U18OE303	Open Elective-I	3	-		3	10	30	40	60	100	
4	PCC	U18EC304	Signals & Systems	3	-	-	3	10	30	40	60	100	
5	PCC	U18EC305	Analog Circuits - I	3	-	-	3	10	30	40	60	100	
6	PCC	U18EC306	Switching Theory & Logic Design	3	-	-	3	10	30	40	60	100	
7	ESC	U18EE312	Network Analysis	3	-	-	2	10	30	40	60	100	
8	PCC	U18EC308	Analog Circuits - I Laboratory	-	-	2	1	40	-	40	60	100	
9	OE	U18OE311	Open Elective-I based Laboratory	-	-	2	1	40	-	40	60	100	
			Total:	18	1	6	21	240	180	420	480	900	

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

Open Elective-I:	Open Elective-I based Laboratory
U18OE303A: Object Oriented Programming (CSE)	U18OE311A: Object Oriented Programming Lab (CSE)
U18OE303B: Fluid Mechanics & Hydraulic Machines (CE)	U18OE311B: Fluid Mechanics & Hydraulic Machines Lab (CE)
U18OE303C: Fundamentals of Mechatronics (ME)	U18OE311C: Mechatronics Lab (ME)
U18OE303D: Web Programming (IT)	U18OE311D: Web Programming Lab (IT)
U18OE303F: Strength of Materials (CE)	U18OE311F: Strength of Materials Lab (CE)

Student Contact Hours / Week : 25 (periods/week) Total Credits (C) : 21



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE:: WARANGAL - 15

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IV SEMESTER OF 4-YEAR B.TECH ECE DEGREE PROGRAM

IV - Semester [Second year]

[6Th+2P+2M]

		second year			[0111+21+211]								
Sl.N o	Category	Course Code	Course Title		Hour per week		Credits	Evaluation Scheme					
				т	Т	Р			CIE		ESE	Total	
				"	1	1		TA	MSE	Total	EGE	Marks	
1	OE	U18OE401	Open Elective-II	3	1	-	4	10	30	40	60	100	
2	HSMC	U18MH402	Professional English	-	-	2	1	100	-	100	ı	100	
3	PCC	U18EC403	Electro Magnetic Waves and Transmission Lines	3	-	-	3	10	30	40	60	100	
4	PCC	U18EC404	nalog Circuits - II		-	-	3	10	30	40	60	100	
5	PCC	U18EC405	Pulse and Digital Circuits	3	-	-	3	10	30	40	60	100	
6	PCC	U18EC406	Probability and Random Processes	3	-	-	3	10	30	40	60	100	
7	PCC	U18EC407	Digital Design	3	-	-	3	10	30	40	60	100	
8	MC	U18MH415	Essence of Indian Traditional Knowledge	2	-	-	1	10	30	40	60	100	
9	PCC	U18EC408	Analog Circuits - II Laboratory	-	-	2	1	40	-	40	60	100	
10	PCC	U18EC409	Pulse and Digital Circuits Laboratory	-	-	2	1	40	-	40	60	100	
			Total	20	1	6	22	250	210	460	540	1000	
11	MC	U18CH416	Environmental Studies *	2	-	_	0	10	30	40	60	100	

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

Contact hours per week: 27 Total Credits: 22

Open Elective-II

U18OE401A: Applicable Mathematics (M&H) U18OE401C: Elements of Mech. Engg. (ME) U18OE401E: Computers Networks (IT)

U18OE401F: Renewable Energy Resources (EEE)

^{*} indicates Mandatory Non-Credit course for Lateral Entry Students Only



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SCHEME OF INSTRUCTION & EVALUATION

V SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[6Th+2P+1MC]

Sl.No	Category	Course Code	Course Title]	Hou per wee		Credits		Evalu	ıation	Sche	me
				L	T	P		TA	CIE MSE	Total	ESE	Total Marks
1	MC	U18MH501	Universal Human Values - II	2	-	-	=	10	30	40	60	100
2	PE	U18EC502	Professional Elective - I / MOOCs - I	3	-	-	3	10	30	40	60	100
3	PCC	U18EC503	Communication Systems	3	-	-	3	10	30	40	60	100
4	PCC	U18EC504	Antennas and Wave Propagation	3		-	3	10	30	40	60	100
5	PCC	U18EC505	Linear Integrated Circuits and Applications	3	1	-	3	10	30	40	60	100
6	PCC	U18EC506	Microprocessors and Microcontrollers	3	1		3	10	30	40	60	100
7	ESC	U18EE511	Linear Control Systems	3		1	3	10	30	40	60	100
8	PCC	U18EC507	Communication Systems Laboratory	-	-	2	1	40	-	40	60	100
9	PCC	U18EC508	IC Applications Laboratory	-	-	2	1	40	-	40	60	100
10	PROJ	U18EC510	Seminar	-	-	2	1	100	-	100	-	100
			Total:	20	-	6	21	250	210	460	540	1000

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

Professional Elective-I / MOOCs - I:

U18EC502A: Artificial Intelligence and Machine Learning with Python

U18EC502B: Pervasive Computing

U18EC502C: Electronic Measurements and Instrumentation

U18EC502M: MOOC Course

Contact hours per week : 26 Total Credits : 21



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VI SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[5Th+3P+2MC]

S1.	Calagaga	Course	Commercial	Ho-	ur p eek		C 1''		Evalu	Evaluation Scheme					
No	Category	Code	Course Title	т	т	P	Credits		CIE	ESI		Total			
				L	1	I		TA	MSE	Total	ESE	Marks			
1	HSMC	U18TP601	Quantitative Aptitude & Logical Reasoning	2	-	ı	1	10	30	40	60	100			
2	PE	U18EC603	Professional Elective -II / MOOCs-II	3	1	-	3	10	30	40	60	100			
3	PCC	U18EC604	Digital Signal Processing and Applications	3	-	-	3	10	30	40	60	100			
4	PCC	U18EC605	VLSI Circuits and Systems	3	-	-	3	10	30	40	60	100			
5	PCC	U18EC606	Embedded Systems with ARM Processor and Applications	3	1	-	3	10	30	40	60	100			
6	ESC	U18CS611*	Advanced Data Structures	3	-	ı	3	10	30	40	60	100			
7	PCC	U18EC608	Digital Signal Processing Laboratory	-	1	2	1	40	-	40	60	100			
8	ESC	U18CS612*	Advanced Data Structures laboratory	-	-	2	1	40	-	40	60	100			
9	PROJ	U18EC610	Mini Project	-	-	2	1	100	-	100	-	100			
10	PCC	U18EC613**	Microprocessor and Embedded Systems laboratory	-	_	2	1	40	-	40	60	100			
			Total:	17	-	8	20	280	180	460	540	1000			

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

Professional Elective-II / MOOCs -II:

U18EC603A: Industrial Internet of Things U18EC603B: Wireless Sensor Networks U18EC603C: Biomedical Instrumentation

U18EC603M: MOOC Course

Contact hours per week : 25 Total Credits : 20

^{*} indicates U18CS611* & U18CS612* will be offered for the batch 2020-24, as per BoS-ECE order dated 16.05.2022

^{**} indicates U18CS613* will be offered for the batch 2020-24, as per BoS-ECE order dated 16.05.2022



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SCHEME OF INSTRUCTION & EVALUATION VII SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[4Th+2P+2MC]

		1	[111/21/21/2]										
S1.				Hour	per v	veek			Evalu	ation S	cheme	!	
No	Category	Course Code	Course Title	т	т	Р	Credits		CIE		ESE	Total	
NU				L	1	r		TA	MSE	Total	ESE	Marks	
1	OE	U18OE701	Open Elective- III	3	1	ı	3	10	30	40	60	100	
2	PE	U18EC702	Professional Elective - III /MOOCs-III	3	-	ı	3	10	30	40	60	100	
3	PE	U18EC703	Professional Elective - IV / MOOCs-IV	3	1	ı	3	10	30	40	60	100	
4	PCC	U18EC706	VLSI Lab	-	-	2	1	40	-	40	60	100	
5	PROJ	U18EC707	Major Project Phase - I	-	1	6	3	100	-	100	-	100	
6	MC	U18EC708	Internship Evaluation	-	-	2	-	100	-	100	ı	100	
7	PCC	U18EC709*	Microwave and Optical Fiber Communication System	3	1	ı	3	10	30	40	60	100	
8	PCC	U18EC710**	Python Programming & IoT Lab	-	-	2	1	40	-	40	60	100	
9	HSMC	U18MH711#	Management Economics & Accountancy	3	_	1	3	10	30	40	60	100	
			Total:	12	-	12	17	310	120	440	360	800	

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

^{**} indicates U18EC710** will be offered for the batch 2019-23 onwards, as per BoS-ECE order dated 16.05.2022 # indicates U18EC711# will be offered for the batch 2020-24 onwards, as per BoS-ECE order dated 16.05.2022

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U18OE701A: Disaster Management U18OE701B: Project Management

U18OE701C: Professional Ethics in Engineering U18OE701D: Rural Technology and Community

Development

Professional Elective-III / MOOCs-III:

U18EC702A: Data Science Engineering U18EC702B: Real-Time Embedded Systems

U18EC702D: Digital System Design

U18EC702M: MOOC course

Professional Elective-IV / MOOCs-IV:

U18EC703A: Electronic System Design and Manufacturing

U18EC703B: VLSI Physical Design U18EC703C: Digital Image Processing

U18EC703M: MOOC course

Contact hours per week: 24 **Total Credits** : 17

^{*} indicates U18EC709* will be offered for the batch 2019-23 only, as per BoS-ECE order dated 16.05.2022



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[3Th+0P+1MC]

Sl.No	Category	Course Code Course Title Hour per week Credits					Eval	aluation Scheme					
			Course Title	т	т	P	Credits	CIE			ESE	Total	
						Г		TA	MSE	Total	ESE	Marks	
1	PE	U18EC801	Professional Elective - V / MOOCs-V	3	-	1	3	10	30	40	60	100	
2	PE	U18EC802	Professional Elective - VI / MOOCs-VI	3	-	-	3	10	30	40	60	100	
3	OE	U18OE803	Open Elective - IV / MOOCs-VII	3	-	-	3	10	30	40	60	100	
4	PROJ	U18EC804	Major Project - Phase - II	-	-	14	7	60	-	60	40	100	
	-		Total:	9	-	14	16	90	90	180	220	400	

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

Professional	Elective-V	/ MOOCs-V:
1 IUICSSIUIIAI	LICCLIVC- V	/ 1V1OOC3- V 4

U18EC801A: Cognitive Radio Networks U18EC801B: FPGA-Based System Design

U18EC801C: Radar and Satellite

Communication

U18EC801M: MOOC course

Professional Elective-VI/ MOOCs-VI:

U18EC802A: Cellular and Mobile Communication

System

U18EC802B: MEMs and NEMs

U18EC802C: Digital Speech Processing

U18EC802M: MOOC course

Open Elective-IV /MOOCs-VII:

U18OE803A: Operations Research

U18OE803B: Management Information Systems U18OE803C: Entrepreneurship Development

U18OE803D: Forex and Foreign Trade

U18OE803M: MOOC course

Contact hours per week Total Credits 23 : 16



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE:: WARANGAL - 15

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SEMESTER WISE CREDITS DISTRIBUTION

SEM	No. of Credits	Contact hours	
I	21	29	
II	22	29	
III	21	25	
IV	22	27	
V	21	26	
VI	20	25	
VII	17	24	
VIII	16	23	
Total	160	208	



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE: WARANGAL-15

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SEMESTER Vs COURSE CATEGORY WEIGHTAGE

(in terms of Total No. of Courses/Total No. Credits)

Semester	Number of Courses / Number of Credits (Course Category wise)								
Semester	BSC	ESC	HSMC	PCC	OE	PE	PROJ	MC	TOTAL
I	3/9	4/12	-	-	-	-	-	2/0	9/21
II	3/9	5/10	1/3	-	-	-	-	1/0	10/22
III	1/4	1/2	1/1	4/10	2/4	-	-	-	9/21
IV	-	-	1/1	7/17	1/4	-	-	2/0	11/22
V	-	1/3	-	6/14	-	1/3	1/1	1/0	10/21
VI	-	2/4	1/1	5/11	-	1/3	1/1	-	10/20
VII	-	-	1/3	2/2	1/3	2/6	1/3	1/0	8/17
VIII	-	-	-	-	1/3	2/6	1/7	-	4/16
Total	7/22	13/31	5/9	24/54	5/14	6/18	4/12	7/0	71/160
% Weightage of Course Category	13.75 % (22/160)	19.37 % (31/160)	5.625 % (9/160)	33.75 % (54/160)	8.75 % (14/160)	11.25 % (18/160)	7.5 % (12/160)	0 %	100 % (160/160)