

DEPARTMENT OF ELECTRONICS & INSTRUMENTATION ENGINEERING



(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.

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 & INSTRUMENTATION ENGINEERING

VISION OF THE DEPARTMENT

To provide quality education in Electronics & Instrumentation Engineering by nurturing the students with strong technical analytical, practical skills and ethics to make them engineering professional who cater to the societal needs with a high degree of integrity and social concern

MISSION OF THE DEPARTMENT

- To provide progressive and quality educational environment with the help of dedicated faculty and staff by fully utilizing the information technology aiming at continuous teaching and learning process
- To produce engineering graduates fit for employability with a competence to design, develop, invent and solve instrumentation engineering problems
- To make the students ethically strong by inculcating sense of brotherhood
- To make the students researches oriented by providing latest technical knowledge and thus cater to the changing needs of industry and commerce



PRO	GRAM EDUCATIONAL OBJECTIVES (PEOs)											
UG - ELECTRONICS & INSTRUMENTATION ENGINEERING - EIE												
PROGRAM EDUCATIONAL OBJECTIVES (PEOs) Within first few years after graduation, the ELECTRONICS & INSTRUMENTATION ENGINEERING graduates will be able to												
PEO1: Technical Expertise	build fundamental knowledge, continue developing technical skills within and across disciplines in Electronics & Instrumentation Engineering for productive and successful career maintaining professional ethics											
PEO2: Successful Career	develop and exercise their capabilities in demonstrating their creativity in engineering practice and team work with increasing responsibility and leadership											
PEO3: refine their knowledge and skills in attaining professional competence through lifelong learning such as higher education, advanced degrees and professional activities Long Learning												

PROGRAM O	UTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)								
UG - 1	ELECTRONICS & INSTRUMENTATION ENGINEERING - EIE								
PROGRAM	At the time of graduation, the ELECTRONICS & INSTRUMENTATION								
OUTCOMES (POs)	ENGINEERING graduates will be able to								
PO1: Engineering apply the knowledge of mathematics, science, engineering fundamentals, and an									
knowledge engineering specialization to the solution of complex engineering problems									
PO2: Problem	identify, formulate, review research literature, and analyze complex engineering problems								
analysis	reaching substantiated conclusions using first principles of mathematics, natural sciences,								
	and engineering sciences								
PO3:Design/develop	design solutions for complex engineering problems and design system components or								
ment of solutions	processes 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,								
investigations of	analysis and interpretation of data, and synthesis of the information to provide valid								
complex problems	conclusions								
PO5: Modern tool	create, select, and apply appropriate techniques, resources, and modern engineering and IT								
usage	tools including prediction and modeling to complex engineering activities with an								
	understanding of the limitations								
PO6:The engineer	apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal								

and society	and cultural issues and the consequent responsibilities relevant to the professional
Ĭ	engineering practice
PO7:Environment	understand the impact of the professional engineering solutions in societal and
and sustainability	environmental contexts, and demonstrate the knowledge of, and need for sustainable
	development
PO8:Ethics	apply ethical principles and commit to professional ethics and responsibilities and norms of
	the engineering practice
PO9:Individual and	function effectively as an individual, and as a member or leader in diverse teams, and in
team 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
management and	and apply these to one's own work, as a member and leader in a team, to manage projects
finance	and in multidisciplinary environments
PO12:Life-long	recognize the need for, and have the preparation and ability to engage in independent and
learning	life-long learning in the broadest context of technological change
PROGRAM SPECIFI	C OUTCOMES (PSOs):
PSO1	an ability for immediate professional practice as an Electronics & Instrumentation
	engineer
PSO2	an ability to use fundamental knowledge to investigate new and emerging
	technologies leading to innovations in the field of Electronic & Instrumentation
	Engineering



B.TechELECTRONICS &INSTRUMENTATION ENGINEERING

SCHEME OF INSTRUCTIOONS & EVALUTION

(I Semester to VIII Semester)

(Applicable from the Academic Year 2018-19)



(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION & EVALUATION

I SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

Sl.	Categor	C C 1	Course Title Periods/week		Credit s	Evaluation scheme						
No	y	Course Code	Course Title	т	т	Р	С		CIE		ES	Total
	-			L	1	Г		TA	MSE	Total	E	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 Lab	1	-	2	1	40	-	40	60	100
7	BSC	U18CH108	Engineering Chemistry Lab	-	_	2	1	40	-	40	60	100
8	MC	U18CH109	Environmental Studies*	2	_	_	_	10	30	40	60	100
9	MC	U18EA110	110 EAA*: Sports/Yoga/NSS		-	2		100	-	100	-	100
	Total:			16	3	10	21	270	150	420	480	900

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

EAA*: Extra Academic Activity* indicates mandatory non-credit course

Total Contact Periods/Week: 29; Total Credits: 21



(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION & EVALUATION

II SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

SI	('ategory	Course	Course Title	Per	riods/we	eek	Credits		Eva	aluation	scheme	9
No	Category	Code	Course Title	т	т	Р	C		CIE		ESE	Total
				L	1	ľ	C	TA	MSE	Total		Marks
1	BSC	U18MH201	Engineering Mathematics - II	0 0		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 Lab	-	-	2	1	40	-	40	60	100
7	ESC	U18CS207	Data Structures through C Lab	1	-	2	1	40	-	40	60	100
8	BSC	U18PH208	Engineering Physics Lab	_	_	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	280	180	460	540	1000

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

EAA*: Extra Academic Activity* indicates mandatory non-credit course

Total Contact Periods/Week: 29; Total Credits: 22



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SCHEME OF INSTRUCTION & EVALUATION

III SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[6Th+2P+1MC]

S1.	Category	Course Code	rse Code Course Title		Periods/week		Credits	Evaluation scheme					
No	Cutegory	Course Coue	Course Title	L	T	P	С		CIE		ESE	Total	
								TA	MSE	Total		Marks	
1	BSC	U18MH301	Engineering Mathematics - III	3	1	-	4	10	30	40	60	100	
2	HSMC	U18TP302	Soft & Interpersonal Skills	1	_	2	1	100	ı	100	1	100	
3	OE	U18 OE303	Open Elective-I	3	-	-	3	10	30	40	60	100	
4	PCC	U18EI304	Electrical and Electronic Measurements	3	_	_	3	10	30	40	60	100	
5	PCC	U18 EI 305	Sensors and Transducers	3	-	-	3	10	30	40	60	100	
6	PCC	U18 EI 306	Electronic Devices and Circuits-I	3	-	-	3	10	30	40	60	100	
7	PCC	U18 EI 307	Digital Circuits and Logic Design	3	1	-	4	10	30	40	60	100	
8	PCC	U18 EI 308	Measurements and Instrumentation Laboratory-I	-	-	2	1	40	-	40	60	100	
9	OE	U18OE311	Open Elective -I based Laboratory	ı	-	2	1	40	ı	40	60	100	
			Total:	18	2	6	23	240	180	420	480	900	

Open Elective-I:

U18OE303A: Object Oriented Programming (CSE)

U18OE303B: Fluid Mechanics & Hydraulic Machines (CE)

U18OE303C: Mechatronics (ME) U18OE303D: Web Programming (IT) U18OE303F: Strength of Materials (CE) **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)

U18OE311F: Strength of Materials Lab (CE)

Total Contact Periods/Week: 26 Total Credits: 23



(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION & EVALUATION

IV SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[5Th+3P+1MC]

Sl.				Peri	ods/v	week	Credits	Evaluation scheme					
No	Category	Course Code	Course Title	L	T	P	С		CIE		ESE	Total	
								TA	MSE	Total		Marks	
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	U18EI403	Signal Analysisand Systems	3	1	-	4	10 30 40			60	100	
4	PCC	U18 EI 404	Electronic Devices and Circuits-II	3	1	-	4	10 30 40			60	100	
5	PCC	U18 EI 405	Process Instrumentation	3	-	-	3	10	30	40	60	100	
6	PCC	U18 EI 406	Digital Design using VHDL	3	-	-	3	10	30	40	60	100	
7	PCC	U18 EI 407	Electronic Circuits Laboratory	-	-	2	1	40	-	40	60	100	
8	PCC	U18 EI 408	Measurements and Instrumentation Lab-II	-	-	2	1	40	1	40	60	100	
9	PCC	U18EI409	Digital Electronics Laboratory	-	-	2	1	40	-	40	60	100	
10	MC	U18MH415	ssence of Indian Traditional Knowledge 2 10 30 40			60	100						
11	11 MC U18CH416 Environmental Studies*					ı	_	10	30	40	60	100	
			Total:	17	3	8	22	280	180	460	540	1000	

Open Elective-II:

U18OE401A: Applicable Mathematics (MH)

U18OE401C: Elements of Mechanical Engineering (ME)

U18OE401E: Computer Networks (IT)

U18OE401F: Renewable Energy Sources (EEE)

Total Contact Periods/Week: 28 Total Credits: 22

^{*}For Lateral entry students only



(An Autonomous Institute under Kakatiya University, Warangal)

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

[5Th+3P+1MC+ Seminar]

S1.	Category	Course Code	Course Title	Periods/week (Credits		Eva	luation	scheme			
No	Category	Course Coue	Course Title	L	Т	P	С		CIE	1	ESE	Total
						_		TA	MSE	Total		Marks
1	MC	U18MH501	Universal Human Values - II	2	-	-	-	10	30	40	60	100
2	PE	U18EI502	Professional Elective - I / MOOC-I	3	-	-	3	10	30	40	60	100
3	PCC	U18 EI 503	VLSI Design	3	-	-	3	10	30	40	60	100
4	PCC	U18 EI 504	Microprocessor Systems and Interfacing	3	-	-	3	10	30	40	60	100
5	PCC	U18 EI505	Linear Integrated Circuits and Applications	3	-	-	3	10	30	40	60	100
6	ESC	U18 EE511	Linear Control Systems	3	-	-	3	10	30	40	60	100
7	PCC	U18 EI 507	Linear Integrated Circuits Laboratory	-	-	2	1	40	-	40	60	100
8	PCC	U18 EI 508	Virtual Instrumentation Laboratory	-	-	2	1	40	-	40	60	100
9	PCC	U18 EI 509	VLSI Design Laboratory	-	-	2	1	40	-	40	60	100
10	PROJ	U18 EI 510	Seminar	-	-	2	1	100	-	100	-	100
			Total:	17	-	8	19	280	180	460	540	1000
Addi	tional Learn	ing*:Maximun	ı	-	-	7	-	-	-	-	-	
	Total credits for Honors/Minor students						19+7	-	-	-	-	-

^{*} List of courses for additional learning through **MOOCs** towards Honors/Minor in Engineering shall be prescribed by the department under Honors/Minor Curricula

Professional Elective-I / MOOC-I:

U18EI502A: Communication Systems

U18EI502B: Computer Architecture And Organization

U18EI502C: Data Base Management Systems

U18EI502M: MOOCs Course

Total Contact Periods/Week: 25 Total Credits: 19



(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION & EVALUATION

VI SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[5Th+3P+1MC+ Mini project]

Sl.	Catagogg	Course Code	de Course Title		ods/v	veek	Credits	Evaluation scheme					
No	Category	Course Code	Course Title	т	т	P	С		CIE		ESE	Total	
				L	1	Г	C	TA	MSE	Total		Marks	
1	HSMC	U18TP601	Quantitative Aptitude & Logical Reasoning	2	-	_	1	10	30	40	60	100	
2	HSMC	U18MH602	Management Economics & Accountancy	3	_	_	3	10	30	40	60	100	
3	PE	U18EI603	Professional Elective - II / MOOC-II	3	-	-	3	10	30	40	60	100	
4	PCC	U18EI604	Digital Signal Processing and Applications	3	-	-	3	10	30	40	60	100	
5	PCC	U18EI605	Microcontrollers and Embedded Systems	3	-	-	3	10	30	40	60	100	
6	PCC	U18EI606	Process Control	3	-	-	3	10	30	40	60	100	
7	PCC	U18EI607	Signal Processing Laboratory	1	-	2	1	40	-	40	60	100	
8	PCC	U18EI608	Microprocessors and Microcontrollers Laboratory	1	-	2	1	40	-	40	60	100	
9	PCC	U18EI609	Process Control Laboratory	1	-	2	1	40	-	40	60	100	
10	PROJ	U18EI610	Mini Project	-	-	2	1	100	-	100	-	100	
			Total:	17	-	8	20	280	180	460	540	1000	
Addit	tional Learn	ing*: Ma	ximum credits allowed for Honors/Minor	•		-	7	-	-	-	-	-	
	Total credits for Honors/Minor students						20+7	-	-	-	-	-	

^{*} List of courses for additional learning through **MOOCs** towards Honors/Minor in Engineering shall be prescribed by the department under Honors/Minor Curricula

Professional Elective-II / MOOC-II:

U18EI603A: Electro Magnetic Theory U18EI603B: Analytical Instrumentation

U18EI603C: Operating Systems U18EI603M: MOOCs Course

Total Contact Periods/Week: 25 Total Credits: 20



(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION & EVALUATION

VII SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[4Th+2P+ MP-I+ Internehin]

	[41H+ZF+ MF-I+ Internship]												
S1.	Category	Course Code	Course Title	Peri	ods/	week	Credits	Evaluation scheme					
No	cutegory	Course cour	Course Title	т	т	Р	С		CIE		ESE	Total	
				L	1	r	C	TA	MSE	Total		Marks	
1	OE	U18OE701	Open Elective- III	3	-	-	3	10	30	40	60	100	
2	PE	U18EI702	Professional Elective - III / MOOC-III	3	-	-	3	10	30	40	60	100	
3	PE	U18EI703	Professional Elective - IV / MOOC-IV	3	-	-	3	10	30	40	60	100	
4	PCC	U18EI704	Biomedical Instrumentation	3	-	-	3	10	30	40	60	100	
5	PCC	U18EI705	IoT Laboratory	1	-	2	1	40	-	40	60	100	
6	PCC	U18EI706	Biomedical Instrumentation Laboratory	-	-	2	1	40	-	40	60	100	
7	PROJ	U18EI707	Major Project - Phase - I	1	-	6	3	100	-	100	-	100	
8	MC	U18EI708	Internship Evaluation	1	-	2	-	-	-	-	-	-	
	1	•	Total:	12	_	12	17	220	120	340	360	700	
Addit	tional Learn	<i>ing*:</i> Maximum	credits allowed for Honors/Minor	-	-	-	7	-	-	-	-	-	
			Total credits for Honors/Minor students:	-	-	-	17+7	-	-	-	-	-	

^{*} List of courses for additional learning through **MOOCs** towards Honors/Minor in Engineering shall be prescribed by the department under Honours/Minor Curricula

Open Elective-III:

U18OE701A: Disaster Management U18OE701B: Project Management

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

Development

Professional Elective-III / MOOC-III: U18EI702A: Internet of Things

U18EI702B: Advanced DSP

U18EI702C: Industrial Electronics U18EI702M: MOOCs Course

Professional Elective-IV / MOOC-IV:

U18EI703A: Digital Image Processing

U18EI703B: Artificial Intelligence & Machine Learning

U18EI703C: Cyber Security U18EI703M: MOOCs Course

Total Contact Periods/Week: 24 **Total Credits: 17**



(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION & EVALUATION

VIII SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAM

[3Th+ MP-II]

										,		
				Periods/week			Credits		Eva	luation	scheme	
S1. No	Category	Course Code	Course Title	Ţ	Т	P	С	CIE			ESE	Total
110				L	•	•		TA	MSE	Total	LUL	Marks
1	PE	U18EI801	Professional Elective - V / MOOC-V	3 3					30	40	60	100
2	PE	U18EI802	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	U18EI804	Major Project - Phase - II	-	-	14	7	60	-	60	40	100
			Total:	9	1	14	16	90	90	180	220	400
Addi	tional Learn	ing*:Maximum	credits allowed for Honors/Minor	-	-	-	7	-	-	-	-	-
Total credits for Honors/Minor student						-	16+7	-	-	-	-	-

^{*} List of courses for additional learning through **MOOCs** towards Honors/Minor in Engineering shall be prescribed by the department under Honors/Minor Curricula

Professional Elective-V / MOOC-V:

U18EI801A: Fiber Optic Sensors & Laser Instrumentation

U18EI801B: Robotics

U18EI801C: Biomedical Signal Processing

U18EI801M: MOOCs Course

<u>Professional Elective-VI / MOOC-VI</u>: U18EI802A: Industrial Automation

U18EI802B: Cellular and Mobile Communications

U18EI802C: Cloud Computing U18EI802M: MOOCs Course

Open Elective-IV/MOOC-VII:

U18OE803A: Operations Research

U18OE803B: Management Information Systems U18OE803C: Entrepreneurship Development

U18OE803D: Forex & Foreign Trade

U18OE803M: MOOCs Course

Total Contact Periods/Week: 23Total Credits: 16

(An Autonomous Institute under Kakatiya University, Warangal)

SCHEME OF INSTRUCTION AND EVALUATION I-VIII-SEMESTER OF 4-YEAR B.TECH DEGREE PROGRAMME

Semester Vs Course Category Weightage

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

Semester		Number of Courses / Number of Credits (Component 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	-	1/1	5/14	2/4	-	-	-	9/23				
IV	-	-	1/1	7/17	1/4	-	-	2/0	11/22				
V	-	1/3	-	6/12	-	1/3	1/1	1/0	10/19				
VI	-	-	2/4	6/12	-	1/3	1/1	-	10/20				
VII	-	-	-	3/5	1/3	2/6	1/3	1/0	8/17				
VIII	-	-	-	-	1/3	2/6	1/7	-	4/16				
Total	7/22	10/25	6/9	27/60	5/14	6/18	4/12	7/0	71/160				
% of credits	13.75	15.625	5.625	37.5	8.75	11.25	7.5	0.0	100				