



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

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

काकतीय प्रौद्योगिकी एवं विज्ञान संस्थान, वरंगल - ५०६ ०१५ तेलंगाना, भारत
కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - ౫౦౬ ౦౧౫ తెలంగాణ, భారతదేశము

(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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DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

PG - M.Tech. (EMBEDDED SYSTEM AND VLSI)

PRR - 20

SCHEME OF INSTRUCTION & EVALUTION

(I Semester to IV Semester)

(Applicable from the Academic Year 2021-22)



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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

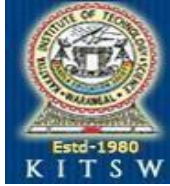
- Develop the department into a full-fledged center of learning in various fields of Electronics and Communication Engineering in pursuit of excellence in Education, Research, Entrepreneurship and Technological services to the society

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 back-ground suitable for attaining a successful career in higher education, research and industry

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	
PG – M.Tech. (EMBEDDED SYSTEM AND VLSI)	
PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	The postgraduates of EMBEDDED SYSTEM AND VLSI will be able to ...
PEO1 (Research and Innovation)	<i>apply appropriate Electronic Design Automation tools to analyze & develop new methodologies to solve the real time problems in the domain of Embedded System & VLSI and contribute significantly in research and teaching</i>
PEO2 (Technical expertise and Successful career)	<i>excel as entrepreneurs and industrial professionals in the domain of Hardware & Software Development of Embedded Systems, RTOS, Embedded Firmware, ASIC Design & Verification, Advanced SoC and Semiconductor device modeling.</i>
PEO3 (Soft skills and Lifelong learning)	<i>exhibit professional ethics, effective communication and teamwork in solving engineering problems by adapting ancient scientific methodologies for sustainable development of society with an attitude of perpetual learning</i>

PROGRAM OUTCOMES (POs) & PROGRAM SPECIFIC OUTCOMES (PSOs)	
PG – M.Tech. (EMBEDDED SYSTEM AND VLSI)	
PROGRAM OUTCOMES (POs)	At the time of graduation, the postgraduates of EMBEDDED SYSTEM AND VLSI will be able to ...
PO1	<i>independently carry out research /investigation and development work to solve practical problems</i>
PO2	<i>to write and present an effective technical report/document</i>
PO3	<i>demonstrate competence in the area of Embedded System and VLSI</i>
PROGRAM SPECIFIC OUTCOMES (PSOs):	
PSO1	<i>apply knowledge of Embedded System and VLSI for development of effective and innovative solutions to engineering problems in the broad areas like Embedded System Design, VLSI Technology and applications</i>
PSO2	<i>utilize Electronic Design Automation tools to solve complex engineering problems in the domain of Embedded System and VLSI</i>



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KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE:: WARANGAL - 15
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PRR-20

SCHEME OF INSTRUCTION & EVALUATION OF M.Tech. (EMBEDDED SYSTEM AND VLSI)
I-SEMESTER OF 2-YEAR M.TECH DEGREE PROGRAMME

[4 Th+2 P+1 MC+1 AC]

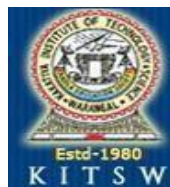
S. No.	Course Category	Course Code	Course Title	Hours per Week			Credits	Evaluation Scheme								
				CIE - TA									ESE	Total Marks		
				I ² RE				Minor	MSE	Total						
				ATLP	CRP	CP					PPT					
1	PC	P20EV101	Professional Core-1: Digital IC Design	3	-	-	3	8	8	8	6	10	20	60	40	100
2	PC	P20EV102	Professional Core-2: Microcontroller based Embedded Systems	3	-	-	3	8	8	8	6	10	20	60	40	100
3	PE	P20EV103	Professional Elective-I/ MOOC-I	3	-	-	3	8	8	8	6	10	20	60	40	100
4	PE	P20EV104	Professional Elective-II/ MOOC-II	3	-	-	3	8	8	8	6	10	20	60	40	100
5	PC	P20EV105	Professional Core Lab-I: (Based on Professional Core- 1) Digital IC Design Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100
6	PC	P20EV106	Professional Core Lab-II: (Based on Professional Core- 2) Microcontroller based Embedded Systems Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100
7	MC	P20MC107	Research Methodology and IPR	2	-	-	2	8	8	8	6	10	20	60	40	100
8	AC	P20AC108	Audit Course-I	2	-	-	1	8	8	8	6	10	20	60	40	100
Total				16	-	8	19							480	320	800

* Additional Learning: Students are advised to do MOOCs to bridge the gap in the curriculum, as suggested by the Department Academic Advisory Committee (DAAC). The credits earned by the student through MOOCs will be printed in the semester grade sheet.

[L= Lecture, T = Tutorials, P = Practicals, C = Credits, ATLP = Assignments, CRP = Course Research Paper, CP = Course Patent, PPT = Course Presentation, Minor=Minor Examination, MSE=Mid Semester Examination and ESE=End Semester Examination]

<p><u>Professional Elective-I/ MOOC-I</u> P20EV103A: Semiconductor Device Modeling P20EV103B: System Verilog for Design and Verification P20EV103C: Linux and Python Programming P20EV103D: MOOCs</p>	<p><u>Professional Elective-II/ MOOC-II</u> P20EV104A: Embedded System Design P20EV104B: Wireless Technologies in Embedded Systems P20EV104C: Static Timing Analysis P20EV104D: MOOCs</p>	<p><u>Audit Course-I</u> P20AC108A: English for Research Paper Writing P20AC108B: Sanskrit for Technical Knowledge P20AC108C: Constitution of India P20AC108D: Pedagogy Studies</p>
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Contact hours per week: 24; Total Credits: 19



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PRR-20

SCHEME OF INSTRUCTION & EVALUATION OF M.Tech. (EMBEDDED SYSTEM and VLSI)
II-SEMESTER OF 2-YEAR M.TECH DEGREE PROGRAMME

[4 Th+2 P+1 Mini Project +1 AC]

S. No.	Course Category	Course Code	Course Title	Hours per Week			Credits	Evaluation Scheme										
				L	T	P		CIE - TA									ESE	Total Marks
								I ² PRE				Minor	MSE	Total				
								ATLP	CRP	CP	PPT							
1	PC	P20EV201	Professional Core-3: Analog IC Design	3	-	-	3	8	8	8	6	10	20	60	40	100		
2	PC	P20EV202	Professional Core-4 Advanced System On Chip Design	3	-	-	3	8	8	8	6	10	20	60	40	100		
3	PE	P20EV203	Professional Elective-III/ MOOC-III	3	-	-	3	8	8	8	6	10	20	60	40	100		
4	PE	P20EV204	Professional Elective-IV/ MOOC-IV	3	-	-	3	8	8	8	6	10	20	60	40	100		
5	PC	P20EV205	Professional Core Lab-III: (Based on Professional Core- 3) Analog IC Design Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100		
6	PC	P20EV206	Professional Core Lab-IV: (Based on Professional Core- 4) Advanced System On Chip Design Laboratory	-	-	4	2	-	-	-	-	-	-	60	40	100		
7	PROJ	P20EV207	Mini Project with Seminar	-	-	4	2	-	-	-	-	-	-	100	-	100		
8	AC	P20AC208	Audit Course-II	2	-	-	1	8	8	8	6	10	20	60	40	100		
Total				14	-	12	19							520	280	800		

* Additional Learning: Students are advised to do MOOCs to bridge the gap in the curriculum, as suggested by the Department Academic Advisory Committee (DAAC). The credits earned by the student through MOOCs will be printed in the semester grade sheet.

Note: The students shall undergo mandatory Industrial training/ Internship for at least 6 to 8 weeks during summer vacation at Industry/R&D organization. Internship evaluation

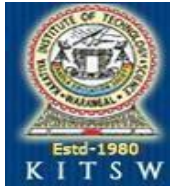
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<u>Professional Elective-III/ MOOC-III</u> P20EV203A: Low Power VLSI Design P20EV203B: ASIC and System on Chip Design P20EV203C: Model Based Embedded System Design P20EV203D: MOOCs	<u>Professional Elective-IV/ MOOC-IV</u> P20EV204A: Embedded Systems Design with RTOS P20EV204B: Multicore Architecture P20EV204C: Radio Frequency IC Design P20EV204D: MOOCs	<u>Audit Course-II</u> P20AC208A: Stress Management by Yoga P20AC208B: Value Education P20AC208C: Personality Development through Life Enlightenment Skills P20AC208D: Disaster Management
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Contact hours per week: 26; Total Credits: 19

KITSW-Scheme for I to IV Semester M. Tech. (ES & VLSI) 2 - year M.Tech. Degree

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PRR-20

SCHEME OF INSTRUCTION & EVALUATION OF M.Tech. (EMBEDDED SYSTEM and VLSI)
III-SEMESTER OF 2-YEAR M.TECH DEGREE PROGRAMME

[2 Th+1 Dissertation+1 Internship]

S. No.	Course Category	Course Code	Course Title	Hours per Week			Credits	Evaluation Scheme								
				CIE - TA									ESE	Total Marks		
				PRE				Minor	MSE	Total						
				L	T	P					ATLP	CRP			CP	PPT
1	PE	P20EV301	Professional Elective-V/ MOOC-V	3	-	-	3	8	8	8	6	10	20	60	40	100
2	OE	P20OE302	Open Elective-I/ MOOC-VI	3	-	-	3	8	8	8	6	10	20	60	40	100
3	PROJ	P20EV303	Dissertation <i>Phase-I /</i> Industrial Project <i>(to be continued in IV -</i> <i>semester also)</i>	-	-	18	9	-	-	-	-	-	-	100	-	100
4	PROJ	P20EV304	Internship Evaluation	-	-	2	-	-	-	-	-	-	-	100	-	100
Total				6	-	20	15							320	80	400

* Additional Learning: Students are advised to do MOOCs to bridge the gap in the curriculum, as suggested by the Department Academic Advisory Committee (DAAC). The credits earned by the student through MOOCs will be printed in the semester grade sheet.

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<p><u>Professional Elective-V/MOOC-V</u> P20EV301A: Embedded System for Industrial Applications P20EV301B: Artificial Intelligence and Machine Learning P20EV301C: Internet of Things and Applications P20EV301D: MOOCs</p>	<p><u>Open Elective-I/ MOOC-VI</u> P20OE302A: Business Analytics P20OE302B: Industrial Safety P20OE302C: Operations Research P20OE302D: Cost Management of Engineering Projects P20OE302E: Composite Materials P20OE302F: Waste to Energy P20OE302G: Renewable Energy Sources P20OE302H: MOOCs</p>
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Contact hours per week: 26; Total Credits: 15



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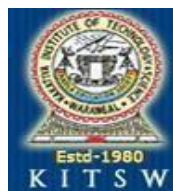
SCHEME OF INSTRUCTION & EVALUATION OF M.Tech. (EMBEDDED SYSTEM and VLSI)
IV-SEMESTER OF 2-YEAR M.TECH DEGREE PROGRAMME

[1 Dissertation]

S. No.	Course Category	Course Code	Course Title	Hours per Week			Credits	Evaluation Scheme								
				CIE - TA									ESE	Total Marks		
				I ² RE				Minor	MSE	Total						
				L	T	P					Credits	ATLP			CRP	CP
1	PROJ	P20EV401	Dissertation <i>Phase-II</i>	-	-	30	15	-	-	-	-	-	-	60	40	100
Total				-	-	30	15							60	40	100

[L= Lecture, T = Tutorials, P = Practicals, C = Credits, ATLP = Assignments, CRP = Course Research Paper, CP = Course Patent, PPT = Course Presentation,
 Minor=Minor Examination, MSE=Mid Semester Examination and ESE=End Semester Examination]

Contact hours per week: 30; Total Credits: 15



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SCHEME OF INSTRUCTION & EVALUATION OF M.Tech. (EMBEDDED SYSTEM and VLSI)
 COURSE CREDIT STRUCTURE AND COURSE WEIGHTAGE

COURSE CREDIT STRUCTURE

Semester	PRR-20 Curriculum	As per Model Curriculum
I	19	18
II	19	18
III	15	16
IV	15	16
Total:	68	68

COURSE WEIGHTAGE

Courses	% Weightage of Courses
Professional Theory	42.85 % (9/21)
Professional Lab	38.1 % (8/21)
Other	19.05 % (4/21)
Total:	100 % (21/21)

SEMESTER vs COURSE CATEGORY WEIGHTAGE

Number of Courses / Number of Credits (Course Category wise)

Semester	MC	PC	PE	OE	PROJ	AC	TOTAL
I	1/2	4/10	2/6	-	-	1/1	8/19
II	-	4/10	2/6	-	1/2	1/1	8/19
III	-	-	1/3	1/3	2/9	-	4/15
IV	-	-	-	-	1/15	-	1/15
Total	1/2	8/20	5/15	1/3	4/26	2/2	21/68
% Weightage of Course Category	2.94 % (2/68)	29.41 % (20/68)	22.05 % (15/68)	4.41 % (3/68)	38.23 % (26/68)	2.94 % (2/68)	100 % (68/68)