

ISO 9001:2015

AICTE-CII: GOLD Category Institute

NAAC-'A' Grade Institute (CGPA: 3.21)

NIRF-2021 Rank : 197



KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

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

కాకతీయ ప్రేచ్ఛోగికీ ంవ్ విజ్ఞాన సంస్థాన, వరంగల - 506 015 తెలంగానా, భారత

కాకతీయ సాంకేతిక విజ్ఞాన శాస్త్ర విద్యాలయం, వరంగల్ - 506 015 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

Welcome to
The Chairman & Members of
NAAC Expert Committee

Dept. of Electronics and Communication Engineering:

Vision

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

Mission

- M1:** Imparting quality education to develop innovative and entrepreneurial professionals fit for globally competitive environment.
- M2:** 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.

Department of Electronics and Communications Engineering - Courses Offered

S. No	Programme	Specialization	Year	Intake
1	B. Tech.	Electronics and Communications Engineering	2000	40
2	B. Tech.	Electronics and Communications Engineering	2001	60
3	B. Tech.	Electronics and Communications Engineering	2009	90
4	B. Tech.	Electronics and Communications Engineering	2011	120
5	B. Tech.	Electronics and Communications Engineering	2015	180
6	B. Tech.	Electronics Communications and Instrumentations	2017	60
7	M. Tech	Digital Communications	2004	18
8	M. Tech	Digital Communications	2006	25
9	M. Tech	Communication Engineering & signal Processing	2020	30
10	M. Tech	Digital Communications	2021	Closed
11	M. Tech	Communication Engineering & Signal Processing	2021	12

S. No	Programme	Year of Accreditation (NBA)	TIER I/ TIER II	Date
1	B. Tech (ECE)	2008	TIER II	(2008 for 3 years vide letter No:F.No./NBA/ACCR/15-2001, Dt:19.07.2008)
2	B. Tech (ECE)	2014	TIER II	(2014 for 2 years vide letter No:F.No. 11-76/2010/NBA, Dt:08.07.2014)
3	B. Tech (ECE)	2016	TIER II	(2016 for 1 year vide letter No:F.No. 11-76/2010/NBA, Dt:08.07.2016)
4	B. Tech (ECE)	2017	TIER II	(2018 for 2 years vide letter No:F.No. 11-76/2010/NBA, Dt:29.03.2018)
5	B. Tech (ECE)	2020	TIER II	(2020 for 1 year vide letter No:F.No. 11-76/2010/NBA, Dt:21.08.2020)
6	B. Tech (ECE)	2021	TIER I	(2021 for 3 years vide letter No:F.No. 11-76/2010/NBA, Dt:17.02.2022) ₃

Dept. of Electronics and Communication Engineering

(B.Tech – ECE - POs)

Program Outcome		Engineering Graduates will be able to
PO1	Engineering Knowledge	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering 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/Development of Solutions	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.
PO4	Conduct Investigations of Complex Problems	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.
PO5	Modern Tool Usage	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
PO6	The Engineer and Society	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.
PO7	Environment and Sustainability	Understand the impact of the professional engineering solutions in societal and 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 Team Work	Function effectively as an individual, and as a member or leader in diverse teams, and in 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 Management and Finance	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
PO12	Life-Long Learning	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.

Dept. of Electronics and Communication Engineering

(B.Tech – ECE - PEOs)

Program Educational Objectives (PEOs)	Within first few years after graduation, the ELECTRONICS AND COMMUNICATION ENGINEERING graduates will be able to
PEO1 (Technical Expertise)	Continue develop technical skills within and across disciplines in electronics and communication engineering for productive and successful career maintaining professional ethics
PEO2 (Successful Career)	Develop and exercise their capabilities to demonstrate their creativity in engineering practice and team work with increasing responsibility and leadership
PEO3 (Soft Skills and Life Long Learning)	Refine their knowledge and skills to attain professional competence through lifelong learning such as higher education, advanced degrees and professional activities

Dept. of Electronics and Communication Engineering (B.Tech – ECE - PSOs)

Program Specific Outcomes (PSOs)	Within first few years after graduation, the ELECTRONICS AND COMMUNICATION ENGINEERING graduates will be able to
PSO1	Readiness for immediate professional practice.
PSO2	Use fundamental knowledge to investigate new and emerging technologies leading to innovations.

Dept. of Electronics and Communication Engineering

M.Tech - CESP:

Include POs, PSOs, PEOs of M.Tech programme

Program Outcomes (POs)	At the time of graduation, the post graduates of Communication Engineering and Signal Processing program will be able to
PO1	Independently carry out research /investigation and development work to solve practical problems
PO2	Write and present an effective technical report/document.
PO3	Demonstrate competence in the area communication engineering and signal processing

Dept. of Electronics and Communication Engineering

M.Tech - CESP:

Include POs, PSOs, PEOs of M.Tech programme

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)	The post graduates of Communication Engineering and Signal Processing program will be able to ...
PEO1 (Research and Innovation)	Engage in research, innovation and in teaching in HE institutions
PEO2 (Technical Expertise & Successful Career)	Excel in profession in industry, and entrepreneurship with updated technologies in signal processing, wireless technologies domains.
PEO3 (Soft skills and Life Long Learning)	Exhibit professional ethics, effective communication, and teamwork in solving engineering problems by adapting contemporary research towards sustainable development of society.

Dept. of Electronics and Communication Engineering:

M.Tech - CESP:

Include POs, PSOs, PEOs of M.Tech programme

PROGRAM SPECIFIC OUTCOMES (PSOs)	The post graduates of Communication Engineering and Signal Processing program will be able to
PSO1	Apply knowledge of signal processing, embedded systems, communication systems, artificial intelligence & machine learning and wireless technologies for development of effective and innovative solutions to engineering problems.
PSO2	Apply appropriate methodology, contemporary hardware and software tools to solve complex engineering problems related to signal processing, embedded systems, communication systems, artificial intelligence & machine learning and wireless technologies.

Dept. of Electronics and Communication Engineering

Head of the Department: Dr. M. Raju, Assoc. Professor

Academic Coordinator: Dr.V.Venkateshwar Reddy, Assoc. Professor

No. of faculty: **33**

No. of faculty with PhD: **17**

No. of faculty pursuing PhD: **16**

No. of technical & supporting staff: **09**

Dept. of Electronics and Communication Engineering

Faculty Who acquired PhD during last five years

S.No	Academic Year	Faculty Name	Awarding University
1.	2022-23	Dr. S.P. Girija	OU, Hyd
2.	2021-22	Dr. R. Srikanth	KU, Warangal
3.	2021-22	Dr. D. Venu	OU, Hyd
4.	2021-22	Dr. Siva Priyanak	NIT Warangal
5.	2021-22	Dr. T. Sunil Kumar	NIT Warangal
6.	2020-21	Dr. V. Raju	VIT, Vellore
7.	2019-20	Dr. V. Sandeep	NIT Warangal
8.	2019-20	Dr. R. Shashank	NIT Warangal

Dept. of Electronics and Communication Engineering

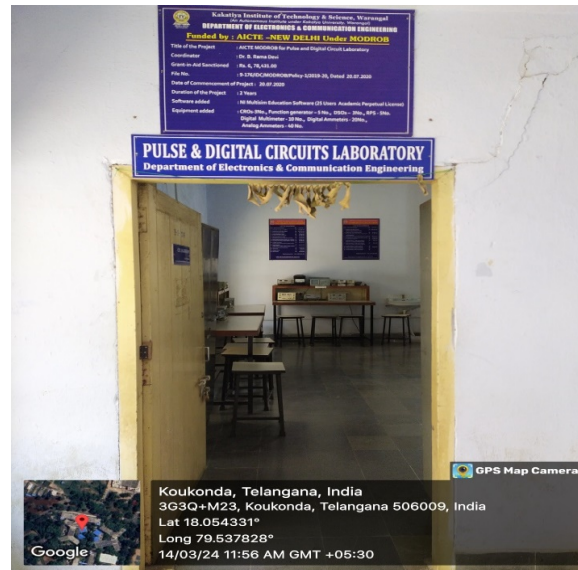
Laboratory Equipment Cost

S.NO.	NAME OF THE LABORATORY	EQUIPMENT COST IN RS.
1	PULSE & DIGITAL CIRCUITS LABORATORY	11,18,969.00
	PDC LAB UNDER MODROBS	6,74,073.84
2	SIGNAL PROCESSING LABORATORY	24,97,719.00
3	MICROPROCESSOR SYSTEM DEVELOPMENT LABORATORY	18,91,443.00
4	INTEGRATED CIRCUITS LABORATORY	7,85,737.00
5	MICRO WAVE & OPTICAL COMMUNICATION LABORATORY	11,66,681.00
6	ELECTRONIC CIRCUIT LABORATORY	4,63,973.00
7	ANALOG & DIGITAL SIMULATION LABORATORY	56,67,613.00
8	COMMUNICATION SYSTEMS LABORATORY	20,78,732.00
9	EMBEDDED SYSTEMS WITH ARM PROCESSORS AND APPLICATIONS LABORATORY	32,48,220.05
	INTERNET OF THINGS LABORATORY	3,75,000.00
	EMBEDDED SYSTEMS LABORATORY	4,15,174.90
10	DIGITAL COMMUNICATION LABORATORY	17,97,840.00
	SOFTWARE DEFINED RADIO LABORATORY	7,31,600.00
11	PROJECT WORKS LAB ABD ANTENNA RESEARCH LAB (RESEARCH GRANTS LAB)	25,29,618.00
12	ADSP & AIML LABORATORY	23,60,110.00
Total cost in Rs.		2,73,87,328.89

Dept. of Electronics and Communication Engineering Laboratories



Dept. of Electronics and Communication Engineering Laboratories



Research & Education Centers

S. No.	Name of the Department	Research & Education Center
1	Electronics and Communication Engineering	Research & Education Center-Advanced Communications
2	Electronics and Communication Engineering	Research & Education Center - Embedded Systems & IoT

PG - Research Labs

S. No.	Name of the Department	PG Research
1.	Electronics and Communication Engineering	PG Research Lab - ECE

Dept. of Electronics and Communication Engineering

Criterion 1 - Curricular Aspects

Curricula is developed and revised on regular basis, based on inputs from the following:

1. Feedback from stakeholders - to meet local requirements
2. Inputs from industry experts (In & abroad) - to meet industry & global developmental needs
3. Suggestions from academicians of reputed institutions - to meet regional & global need

Components in Curriculum:

- Science Component
- Humanities & Social Science
- Professional Core
- Breadth Component
- Electives - Professional & Open electives
- Internship
- Mandatory & Audit courses
- Project work & Seminar

Dept. of Electronics and Communication Engineering

Criterion 1 - Curricular Aspects

Semester	Number of Courses / Number of Credits (Course Category wise)								
	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	-	-	-	7/15	-	1/3	1/1	1/0	10/19
VI	-	1/3	2/4	5/11	-	1/3	1/1	-	10/22
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	11/27	5/9	26/58	5/14	6/18	4/12	7/0	71/160
% Weightage of Course Category	13.75 % (22/160)	16.87 % (27/160)	5.625 % (9/160)	36.25 % (58/160)	8.75 % (14/160)	11.25 % (18/160)	7.5 % (12/160)	0 %	100 % (160/160)

Dept. of Electronics and Communication Engineering

Criterion 1 - Curricular Aspects

Curricula Summary: (for period 2018-19 to 2022-23)

No. of courses offered	:	113
New courses introduced	:	63
Value added courses	:	18

Dept. of Electronics and Communication Engineering

Criterion 2 - Teaching-learning and Evaluation

Teaching-Learning Process:

- Class work as per Almanac
- Sharing Outcome Based Lecture Schedule (OBLS)
- Prior sharing of course material with outcomes - CDTs, SLTs
- Participative Learning through special Assignments in the form of Course Research Paper & Course Patent Paper
- Peer learning through Programme based Assignments
- Continuous internal assessment through Minor exams, Mid Semester exams, Assignments & Special Assignments
- Flip-classes through Tutorials followed as per tutorial matrix
- Course committee meetings

Dept. of Electronics and Communication Engineering

Teaching-Learning Processes

The academic activities of the college are regulated by the academic advisory committee consisting of all the Heads of the Departments with Principal as its Chairperson.

Activities of Teaching & Learning process

- ❖ [Academic Planner](#)
- ❖ Adherence to [academic calendar \(Almanac\)](#)
- ❖ Release of [Teaching Schedule](#)
- ❖ Release of Table of Specifications (ToS)
- ❖ Continuous Internal Evaluation (CIE) – [Minor Exams](#), Assignments, [MSEs](#) are designed with relevant CDLL targeting to map the COs of the course.
- ❖ Course Review Meetings (CRMs), students online feedback of Teaching Learning process
- ❖ Pedagogical initiatives
- ❖ Collaborative learning
- ❖ Mentoring system to help at individual levels
- ❖ Remedial classes and tests are conducted for the weaker students after each test and the remedial test results are analyzed to identify the impact.

Dept. of Electronics and Communication Engineering

Teaching-Learning Processes

Quality of end semester examination, internal semester question papers, assignments and evaluation

- Question papers are set in such a way that the COs maps the questions asked
- Assignments are given before midterm and after the midterm (before the commencement of the end exam)
- The assignments are designed with relevant CDLL targeting to map the COs of the course.
- The assignments are designed to cover both theoretical and numerical portion of the course.

Evidence for COs coverage:

Question papers are set to see that all CO's are addressed and questions are mapped to Cognitive Domain Learning Level (CDLL) as per blooms taxonomy. All courses have four CO's (CO1,CO2,CO3,CO4).

- Minor-I : Covers CO1, Assignment - I: CO2
- Minor-II : Covers CO3, Assignment - I: CO4
- MSE-I: Covers CO1 and CO2
- MSE-II: Covers CO3 and CO4
- ESE: Covers CO1, CO2, CO3 & CO4

Dept. of Electronics and Communication Engineering:

POs & PSOs attainment

Process for ensuring POs & PSOs attainment:

The Department Advisory Committee (DAC) will ensure that POs and PSOs are met by continuously monitor the following aspects related to courses such as:

- ❖ Quality of questions in **assignments, mid examinations** and their relevance to COs.
- ❖ Continuous evaluation in laboratory classes.
- ❖ Evaluation of assignments and answer scripts of mid examinations.
- ❖ Calculations of Attainments of COs and CDLLs for Minor and MSE exams
- ❖ Planning and action to be taken are recorded as ATTRs and are implemented to achieve COs and hence POs and PSOs.

Industry Institute Interaction:

The institute has been encouraging its faculty and students to interact with industry in all possible ways. The modes of interaction are given below:

- Internships/Industrial training ()
- Workshops, conferences and symposia with joint participation of institute and the industry()
- Participation of experts from industry in curriculum development & Guest lectures ()

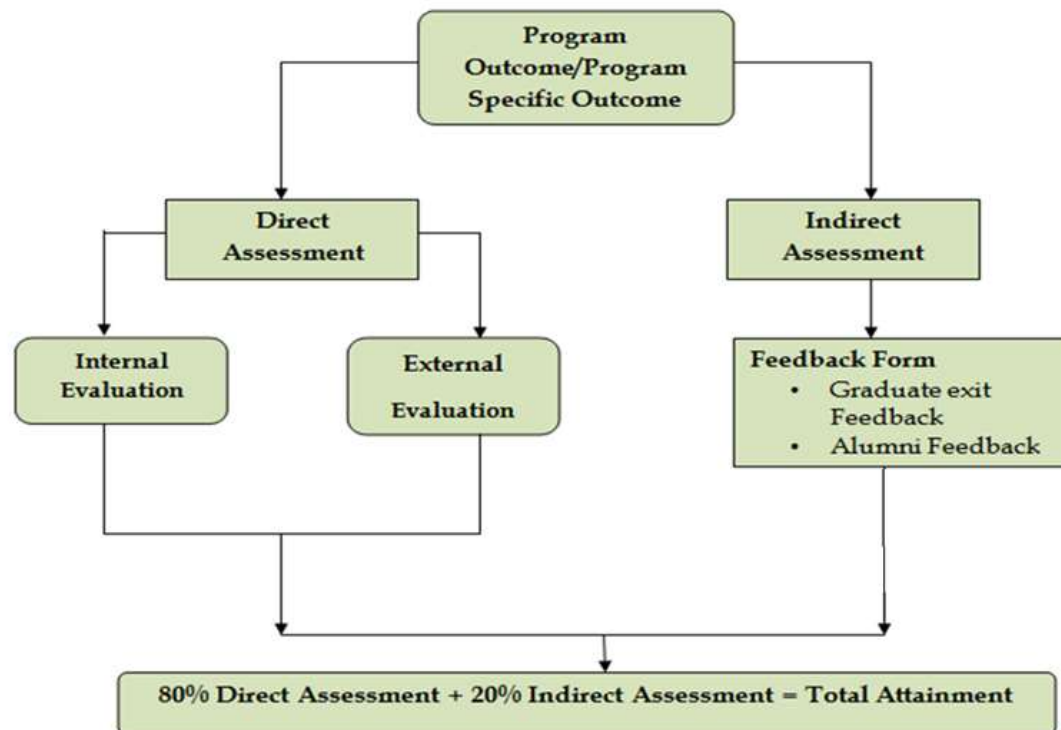
Dept. of Electronics and Communication Engineering

PROGRAM SPECIFIC OUTCOME (PSOs)

PSO1: Readiness for immediate professional practice

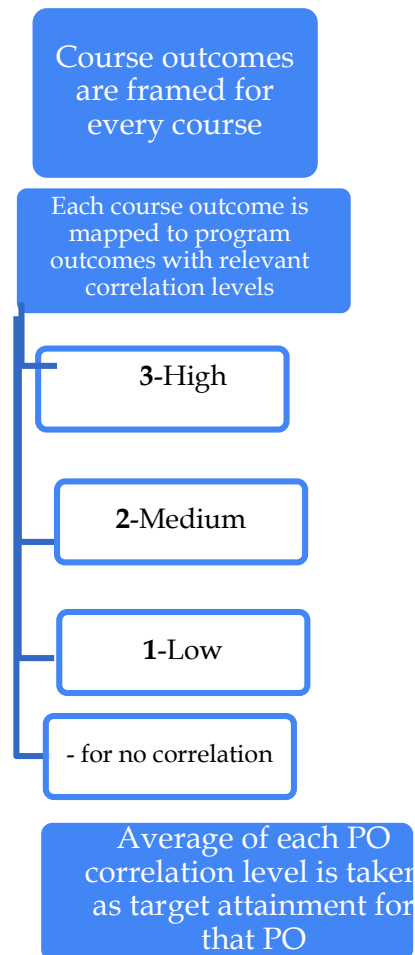
PSO2: An ability to use fundamental knowledge to investigate new and emerging technologies leading to innovations.

Assessment of Program Outcomes



Dept. of Electronics and Communication Engineering:

Course Outcomes



U18EC306 SWITCHING THEORY AND LOGIC DESIGN III SEMESTER
CO1: explain number systems, binary codes; prove the given Boolean identity and apply minimization techniques to obtain minimal SOP/POS forms of logic functions.
CO2: design switching functions using combinational circuits for given application
CO3: develop a sequential circuit using flip flops and logic gates for given specifications
CO4: develop finite state machine with optimum states for given specifications; draw an ASM chart and state diagram for a specific application and build corresponding control unit.
U18EC406 PROBABILITY AND RANDOM PROCESSES IV SEMESTER
CO1: evaluate various statistical parameters of a random variable
CO2: perform various operations on multiple random variables.
CO3: describe the spectral characteristics of random processes.
CO4: evaluate the response of linear system for different inputs
U18EC504 ANTENNAS AND WAVE PROPAGATION V SEMESTER
CO1: discuss radiation mechanism & fundamental characteristics of antennas
CO2: design two element & n-element arrays
CO3: build UHF, VHF & microwave antennas
CO4: distinguish ground wave, space wave & sky wave propagation
U18EC606 EMBEDDED SYSTEMS WITH ARM PROCESSOR AND APPLICATIONS VI SEMESTER
CO1: examine the structure of embedded systems and ARM controllers
CO2: utilize the Instruction set for assembly language programming of ARM
CO3: develop interfacing of various components/devices with ARM7 based microcontrollers
CO4: classify the memory management units in ARM

Dept. of Electronics and Communication Engineering

Sample mapping of Course Outcomes with POs

U18EC406 -PROBABILITY AND RANDOM PROCESSES-IV SEMESTER

CO code	Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
U18EC406 .1	evaluate various statistical parameters of a random variable.	2	2	1	1	-	-	-	-	-	1	-	-	2	2
U18EC406 .2	perform various operations on multiple random variables.	2	2	1	1	-	-	-	-	-	1	-	-	2	2
U18EC406 .3	describe the Spectral characteristics of Random Processes.	2	2	1	1	-	-	-	-	-	1	-	-	2	2
U18EC406 .4	evaluate the response of Linear System for different inputs.	2	2	1	1	-	-	-	-	-	1	-	1	2	2
	Average	2.00	2.00	1.00	1.00	-	-	-	-	-	1.00	-	1.00	2.00	2.00

Dept. of Electronics and Communication Engineering

Course Outcome Attainment Level

Attainment level of end examination is set by considering number of students scored more than the threshold mark of that course as shown below

Attainment Level 0: less than 60% students scoring threshold

Attainment Level 1: 60% students scoring more than threshold

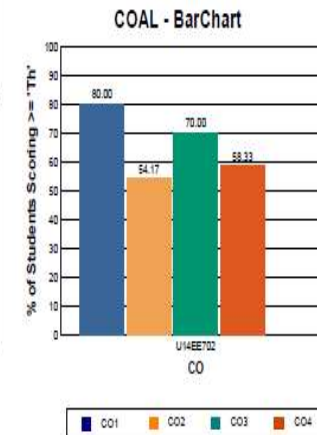
Attainment Level 2: 70% students scoring more than threshold

Attainment Level 3: 80% students scoring more than threshold

Example

ABSTRACT ON COURSE OUTCOME ATTAINMENT LEVEL
EEE B.TECH. VII SEMESTER 2014 - 2015 U14EE702 POWER SYSTEM OPERATION AND CONTROL

Course Name	Faculty Name	Type Of Exam	Date of Exam	Academic Year & Sem	
PSOC		ESE		2017 - 2018 VII SEMESTER	
Total Number Of Students		120			
Course Outcome	CO1	CO2	CO3	CO4	
Max Marks	16.00	14.00	14.00	16.00	
Threshold('Th')(Th=50% of Maximum Marks)	8.00	7.00	7.00	8.00	
No of Students Scoring >= 'Th'	96	85	84	70	
% of Students Scoring >= 'Th'	80.00	54.17	70.00	58.33	
Course Outcome Attainment Level(COAL)	3	0	2	0	
Course Outcome Attainment Level=1	If 60% of Students score >= 'Th'				
Course Outcome Attainment Level=2	If 70% of Students score >= 'Th'				
Course Outcome Attainment Level=3	If 80% of Students score >= 'Th'				



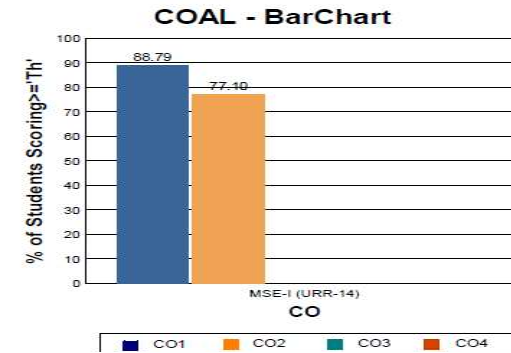
threshold = 50% of maximum marks for that Course Outcome

Dept. of Electronics and Communication Engineering: CO & PO Attainment Calculation



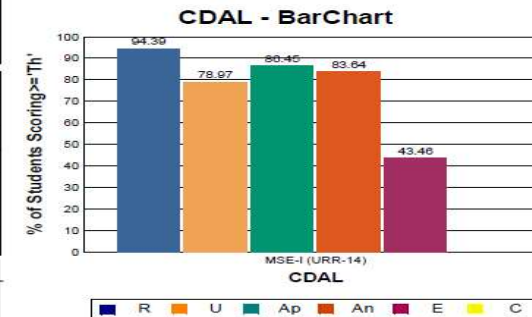
ABSTRACT ON COURSE OUTCOME ATTAINMENT LEVEL ECE B.TECH. IV SEMESTER 2017 - 2018 U14EC402 PULSE AND DIGITAL CIRCUITS

Course Name	Faculty Name	Type of Exam	Date of Exam	Academic Year & Sem	
PDC		MSE-I (URR-14)		2018 - 2019 IV SEMESTER	
Total Number Of Students		214			
Course Outcome		CO1	CO2	CO3	CO4
Max Marks		16.00	9.00	--	--
Threshold('Th')('Th'=50% of Maximum Marks)		8.00	4.50	--	--
No of Students Scoring >= 'Th'		190	165		
% of Students Scoring >= 'Th'		88.79	77.10		
Course Outcome Attainment Level(COAL)		3	2		
Course Outcome Attainment Level=1		If 60% of Students score >= 'Th'			
Course Outcome Attainment Level=2		If 70% of Students score >= 'Th'			
Course Outcome Attainment Level=3		If 80% of Students score >= 'Th'			



ABSTRACT ON COGNITIVE DOMAIN ATTAINMENT LEVEL ECE B.TECH. IV SEMESTER 2017 - 2018 U14EC402 PULSE AND DIGITAL CIRCUITS

Course Name	Faculty Name	Type of Exam	Date of Exam	Academic Year & Sem			
PDC		MSE-I (URR-14)		2018 - 2019 IV SEMESTER			
Total Number Of Students		214					
Cognitive Domain Learning Level (CDLL)		R	U	Ap	An	E	C
Max Marks		2.00	6.00	9.00	2.00	6.00	--
Threshold('Th')('Th'=50% of Maximum Marks)		1.00	3.00	4.50	1.00	3.00	--
No of Students Scoring >= 'Th'		202	169	185	179	93	
% of Students Scoring >= 'Th'		94.39	78.97	86.45	83.64	43.46	
Cognitive Domain Attainment Level (CDAL)		3	2	3	3	0	--
Cognitive Domain Attainment Level =1		If 60% of Students score >= 'Th'					
Cognitive Domain Attainment Level =2		If 70% of Students score >= 'Th'					
Cognitive Domain Attainment Level =3		If 80% of Students score >= 'Th'					



Dept. of Electronics and Communication Engineering

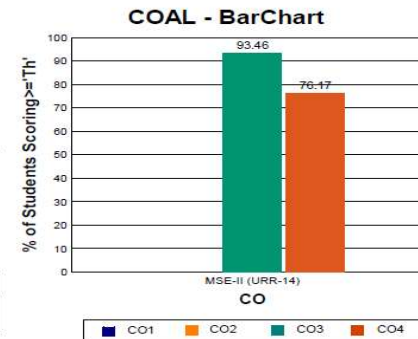
CO & PO Attainment Calculation



ABSTRACT ON COURSE OUTCOME ATTAINMENT LEVEL

ECE B.TECH. IV SEMESTER 2017 - 2018 U14EC402 PULSE AND DIGITAL CIRCUITS

Course Name	Faculty Name	Type of Exam	Date of Exam	Academic Year & Sem	
PDC		MSE-II (URR-14)		2018 - 2019 IV SEMESTER	
Total Number Of Students		214			
Course Outcome		CO1	CO2	CO3	CO4
Max Marks		--	--	12.00	13.00
Threshold('Th')('Th'=50% of Maximum Marks)		--	--	6.00	6.50
No of Students Scoring >= 'Th'				200	163
% of Students Scoring >= 'Th'				93.46	76.17
Course Outcome Attainment Level(COAL)				3	2



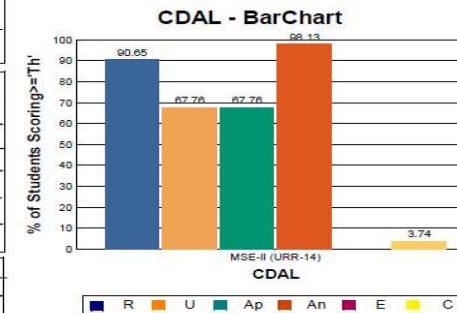
Course Outcome Attainment Level=1	If 60% of Students score >= 'Th'
Course Outcome Attainment Level=2	If 70% of Students score >= 'Th'
Course Outcome Attainment Level=3	If 80% of Students score >= 'Th'



ABSTRACT ON COGNITIVE DOMAIN ATTAINMENT LEVEL

ECE B.TECH. IV SEMESTER 2017 - 2018 U14EC402 PULSE AND DIGITAL CIRCUITS

Course Name	Faculty Name	Type of Exam	Date of Exam	Academic Year & Sem			
PDC		MSE-II (URR-14)		2018 - 2019 IV SEMESTER			
Total Number Of Students		214					
Cognitive Domain Learning Level (CDLL)		R	U	Ap	An	E	C
Max Marks		5.00	9.00	6.00	2.00	--	3.00
Threshold('Th')('Th'=50% of Maximum Marks)		2.50	4.50	3.00	1.00	--	1.50
No of Students Scoring >= 'Th'		194	145	145	210		8
% of Students Scoring >= 'Th'		90.65	67.76	67.76	98.13		3.74
Cognitive Domain Attainment Level (CDAL)		3	1	1	3	--	-0



Cognitive Domain Attainment Level =1	If 60% of Students score >= 'Th'
Cognitive Domain Attainment Level =2	If 70% of Students score >= 'Th'
Cognitive Domain Attainment Level =3	If 80% of Students score >= 'Th'

Facilities and Technical Support

Physical Resources

Class rooms (10)

- **Class Rooms:10 (09 BTech, 01 MTech)**

Laboratories (12)

- **PULSE & DIGITAL CIRCUITS LABORATORY**
- **SIGNAL PROCESSING LABORATORY**
- **MICROPROCESSOR SYSTEM DEVELOPMENT LABORATORY**
- **INTEGRATED CIRCUITS LABORATORY**
- **MICRO WAVE & OPTICAL COMMUNICATION LABORATORY**
- **ELECTRONIC CIRCUIT LABORATORY**
- **ANALOG & DIGITAL SIMULATION LABORATORY**
- **COMMUNICATION SYSTEMS LABORATORY**
- **EMBEDDED SYSTEMS WITH ARM PROCESSORS AND APPLICATIONS LABORATORY**
- **PROJECT WORKS LAB & ANTENNA RESEARCH LAB**
- **DIGITAL COMMUNICATION LABORATORY**
- **ADSP & AIML LABORATORY**

Technical Staff (06)

- Sri.B.Narasimha swamy
- Smt.Y. Rekha
- Sri M.Prashanth
- Sri Ch.Jagadeesh
- Sri.B.Sreehari
- Sri.G.Vinay Kumar
- Sri. V. Shashank

Office Staff (02)

K.Shailaja, MBA

Sri Ch.Sammaiah, SSC

Dept. of Electronics and Communication Engineering

Criterion 2 - Teaching-learning and Evaluation

Programmes conducted to cater to differential learning needs of the students:

For Slow learners:

- Remedial Classes, Tutorials, Class Discussion Materials, Question Bank

For active learners:

- Course Patent papers and Course Research Papers - Each Course 1 CP and 1 CRP
- Project to paper publications - 45
- MOOCs certifications - 263 (Students - 195, Faculty -68)
- Honors degree - 02
- Minor degree -09
- Participation in hackathons - 45

Dept. of Electronics and Communication Engineering

Criterion 2 - Teaching-learning and Evaluation

Effective Mentor-Mentee (Counselor-Counselee) System:

Procedure:-

- Counsel the students every week during Meet Your Counselor slot
- The faculty member who acts as counsellor maintains a Counseling record book for each counselee in which personal details of the students including their address, contact numbers, overall academic performance and progress is regularly updated.
- Monitor the attendance and marks in college management software(CMS), counsel, guide, and motivate the students in all academic matters.

Dept. of Electronics and Communication Engineering

Criterion 3 - Research, Innovations and Extension

Research facilities in the department : 08

Research supervisors : 03

Research scholars : 09 (Completed - 04, Ongoing- 05)

Seed money received : Rs.40,000.00

Research grants received : 09

Faculty obtained PhD : 06

LIST OF LICENSED SOFTWARES

S.NO	NAME OF THE SOFTWARE	NO.OF. USERS	AMOUNT
1	VLSI DESIGN SUITE A BUNDLE OF 5 USERS	5	3,70,000
2	FPGA BASED VLSI TRAINING UNIT	10	2,61,040
3	XILINX VIVADO DESIGN SUITE	25	80,568
4	ORCAD UNIVERSITY SIMULATION BUNDLE	18	5,50,000
5	TMS 6711 BASED DSP STARTER KITS(TEXAS)	10	3,11,250
6	MATLAB 9.11 CAMPUS WIDE LICENSE (2021) (ECE&ECI)	CAMPUS WIDE LICENSE (2021)	2,06,688
7	Software Defined Radio Laboratory 1.NIUS 2901 Bundle with cable accessories	1	7,31,600
8	Cadence Standard Bundle Analog & Digital FE&BE	20	10,03,000
TOTAL			35,14,146

Research grants received

S.No.	Academic Year	Name of the Scheme	Funded by Organization	Details of Coordinator/ PI	Sanctioned Amount	Present status (Completed/ Ongoing)
1	2017-18	FDP	AICTE	Dr. K. Ashoka Reddy	6.5Lakhs	Completed
2	2017-18	EEQ	SERB-DST	Dr M Chandrasekhar	Rs4136000/-	Completed
3	2018-19	ICPS	DST, NEW DELHI	A.Srinivas/Dr. G.Raghotham Reddy	7.0 Lakhs/No. DST/ICPS/ WORKSHOPS/ ST/ 2019-AI	Completed
4	2019-20	3 Day seminar	DST ICPS Division	A.Srinivas	7 Lakhs	UC Submitted
5	2020-21	FDP	AICTE	Dr. K. Ashoka Reddy	5,54,000	Completed
6	2020-21	STTP	AICTE	Dr. K. Ashoka Reddy	3,41,333	Completed
7	2020-21	MODROBS	AICTE	Dr.B.Ramadevi	6,78,431	Completed
8	2022-23	MSME	MINISTRY OF MSME	Dr. V. Raju	16,40,000	Ongoing
9	2022-23	DST, SERB	DST, NEW DELHI	Dr. K. Ashoka Reddy	38,61,000	Ongoing
Total-1,32,60,764						

Dept. of Electronics and Communication Engineering:

Criterion 3 - Research, Innovations and Extension

Research Publications and Awards

S.No.	Academic Year	SCI Journals	Scopus Journals	UGC Journals	Conferences	Books	Book Chapters	Patents
1	2023-24	0	4	0	0	0	0	0
2	2022-23	8	10	5	30	6	3	3
3	2021-22	11	8	8	36	6	1	5
4	2020-21	3	8	5	33	3	1	0
5	2019-20	6	20	5	30	5	3	0
6	2018-19	6	20	6	31	8	7	0
Total		34	70	29	160	28	15	8

Dept. of Electronics and Communication Engineering:

Criterion 3 - Research, Innovations and Extension

	Google Scholar Citations	Scopus Citations	Wos Citations
Avg. Citation Index:	Citations: 3919 Avg: 119	Citations: 2196 Avg: 58.30	Citations:897 Avg: 27.18
Avg. h-index:	h-index: 123 Avg: 3.72	h-index: 94 Avg: 2.84	h-index: 41 Avg: 1.24

Dept. of Electronics and Communication Engineering:

Criterion 3 - Research, Innovations and Extension

Anti-plagiarism policy:

Academic Year	Seminar Report	Mini Project reports	Major Project reports	Student Publications
2022-23	192	192	48	28
2021-22	189	189	47	17

Dept. of Electronics and Communication Engineering:

Criterion 3 - Research, Innovations and Extension

Consultancy: 05

No. of MoUs: 10

No. of Activities conducted: 03

Consultancy

Sl. No.	Name of the Faculty	Date	Name of consultancy project	Names of the consultants	Amount(Tender value)in Rs./-
1	Dr. B. Rama Devi,Dr. K. Ashoka Reddy	15.06.2019 to 15.06.2021	Atmospheric water Generator Plant (Drinking water from Air humidity)	Vanavasi Kalyana Parishad, Warangal	8,00,000/-,
2	Dr. B. Rama Devi,Sri. E. Suresh	15.06.2019 to 15.06.2021	Vegetable Garden House	Vanavasi Kalyana Parishad, Warangal	6,00,000/-,
3	Dr.K.Ashoka Reddy,Dr.G.Raghotham Reddy,B.Narasimha,Dr.Satyam bonala	1st nov 2017 to 31st oct, 2021	Identification and counting of objects from a high resolution camera snap for cement industry	Sumith electronics, Hyderabad	1,50,000/-
4	S.P.Girija,A.Vijaya,Dr.M.Chandrasekhar	1st jan, 2017 to 31st dec, 2021	Battery operated GPS Tracker	Ascentronics systems pvt ltd, hyderabad	1,50,000/-
5	E. Suresh, Dr.B.Ramadevi, Dr.P.Suresh Kumar, Dr.V.Venkateshwar Reddy	1st feb, 2017 to 31st jan 2021	Remote monitoring using IoT with cloud computing	Cybermotion Technologies, Hyderabad	2,00,000/-

MoUs

S. No.	SName of the Industry/ Company & Address	Brief Discription & future use of MoUs	Date of MoU
1	BLACKBUCK ENGINEERING PVT LTD	Centre for Emerging Technologies, Artificial Intelligence/Machine Learning / Data Science/Internet of Things	May, 2020
2	ELECTRONICS SECTOR SKILLS COUNCIL OF INDIA(ESSCI)	On Collaborating for Skill Development of Engineering College Students, Delhi, India	2nd January, 2020
3	EFFTRONICS SYSTEMS PVT. LTD	Collaboration For Internship, Training, Industry Visit, and Research @ Development	1st December, 2019
4	PENTAGON RUGGED SYSTEMS(INDIA) PVT LTD	For Collaboration for internships and Research & Development	27th December, 2019
5	RESEARCH AND INNOVATION CIRCLE OF HYDERABAD(RICH)	Kakatiya Institute of Technology & Science, Warangal(KITSW)	27th December, 2019
6	Telangana Information Technology Association	Collaboration for developing Technology Innovation and Incubation center (TIIC)	12.02.2019
7	KWALITY GROUP OF INDUSTRIES, WHICH INCLUDES KWALITY ELECTRONICS INDUSTRIES AND KWALITY PHOTONICS PVT LTD	For Collaboration for Internship, and Research & Development	10th January, 2020
8	BRAINIAC COGNITIVE SOLUTIONS	Collaboration for center for Innovation and Enterpruneship Developement	17th July, 2019
9	TRANSFINITE INNOVATIVE SOLUTIONS PVT LTD	Collaboration, Innovations and Product Development, Interaction for the Further Promotion and Understanding of IoT, And Social Innovation Platform.	20th July, 2019
10	ECHOHEALTH PRODUCTS PVT LTD	Research Collaboration, Consultancy, and Innovations	25th July, 2019

Dept. of Electronics and Communication Engineering:

Criterion 3 - Research, Innovations and Extension

Students participation in IIRE activities:

S.No.	Event Name	date of the event conducted	No. of students participated
1.	Skilling Program	06.02.2024 - 08.02.2024	45
2.	PCB Architects	02.02.2024 - 04.02.2024	49
3.	Arduino Training	27.12.2023 - 28.12.2023	36
4.	PCB Design and Fabrication	18.12.2023 - 19.12.2023	27
5.	Workshop on PCB Design and Fabrication	28.10.2023, 04.11.2023 and 10.11.2023	60

Dept. of Electronics and Communication Engineering:

Criterion 4 - Infrastructure and Learning Resources

Physical Facilities:

No. of Classrooms: 10

No. of Laboratories: 12

No. of Computers: 194

Department Library info:

No. of textbooks: 513

No. of project reports: 940

No. of newsletters: 10

No. of Magazines: 05

Dept. of Electronics and Communication Engineering:

Criterion 5 - Student Support and Progression

Student Participation in Sports Events

	A.Y: 2023-24	A.Y: 2022-23	A.Y: 2021-22	A.Y: 2020-21	A.Y: 2019-20
Number of students participated	05	28	25	Nil	53

Dept. of Electronics and Communication Engineering:

Criterion 5 - Student Support and Progression

No. of alumni activities yearwise for 5 years

S.No.	A.Y	No of Activities
1	2023-24	03
2	2022-23	02
3	2021-22	03
4	2020-21	02
5	2019-20	03
6	2018-19	04

Dept. of Electronics and Communication Engineering:

Prominent Alumni

S. No.	Name of the Alumnus	Year of Passing	Present Status
1.	Shash Bhushan	2004	Sr Lead Engineer, GE, Hyderabad
2.	Ajay Kumar	2006	India UK Singapore UAE https://www.exceloid.com Mob: +91 88066 12345
3.	Sri Avinash S Chowdary	2007	MD &CEO, M/s Chirasthahi Constuctions , Hyd
4.	Rajkumar Nalla	2006	AE, AP Transco. Warangal
5.	S. Venkat	2014	Wireless system Engg., Google Google Inc., Mountain View, California
6.	B. Rohith	2013	IPS, 9000635295, rohi286@gmail.com
7.	E. Harikrishna	2009	Asst. Professor, UCET, KU
8.	P Chatrapathi Shiva Reddy	2019	CEO, CSR elcctronologies
9.	E. Prabhodh Kumar	2005	CEO, Iwean Soft solutions
10	S.Pradeep	2010	ISRO

Dept. of Electronics and Communication Engineering: Alumni Contributions

- Alumni funded lab established in the year 2021-22,
- Total amount received from Alumni is Rs. 2,94,584



Dept. of Electronics and Communication Engineering:

Criterion 6 - Governance, Leadership and Management

Name of the Faculty	Responsibilities	
	Department level	Institute level
Dr. K. Ashoka Reddy	Member - Board of studeis	Principal
Dr. G. Raghaotham reddy	Member - Board of studeis	Prof. I/C, IIC
Dr. B. Ramadevi	Member - Board of studeis	-
Dr. S. P. Girija	Member - Board of studeis	
Sri. E. Suresh	Member - Board of studeis	
Smt. A. Vijaya	Member - Board of studeis	
Dr.M. Raju	Head, Chairman-BoS, ECE	
Dr. V. Venkateshwar Reddy	Member - Board of studeis	Academic Coordinator-ECE
Dr. K. Ramudu	Member - Board of studeis	Faculty incharge -IQAC
Dr. S. Umamaheshwar	Member - Board of studeis	
Dr. J. Tarun Kumar	Member - Board of studeis	
Dr. V. Raju		Coordinator - I2RE
Dr. D. Venu		Faculty Incharge - Honors and Minor
Dr. R. Srikanth		Faculty incharge-PG

Dept. of Electronics and Communication Engineering:

Criterion 6 - Governance, Leadership and Management

List BoS meetings conducted

Academic Year	Number of BoS meetings
2023-24	01
2022-23	-
2021-22	03
2020-21	03
2019-20	05
2018-19	06

Dept. of Electronics and Communication Engineering:

Criterion 6 - Governance, Leadership and Management

Academic year	Budget Allocation	Budget Utilization
2023-24	27,85,000	4,34,004
2022-23	42,64,513	25,64,820
2021-22	44,98,500	51,44,826(Purchased new systems)
2020-21	77,00,000	35,39,199
2019-20	63,58,200	22,37,192
2018-19	13,00,000	18,11,235 (Purchased new Computers)

Dept. of Electronics and Communication Engineering:

Criterion 6 - Governance, Leadership and Management

Total amount received: Rs. 22,45,933

S.No.	Academic Year	Name of the Scheme	Funded by Organization	Details of Coordinator/ PI	Sanctioned Amount	Present status (Completed/ Ongoing)
1	2017-18	FDP	AICTE	Dr. K. Ashoka Reddy	6.5Lakhs	Completed
3	2018-19	ICPS	DST, NEW DELHI	A.Srinivas/Dr. G.Raghotham Reddy	7.0 Lakhs/No. DST/ICPS/ WORKSHOPS/ ST/ 2019-AI	Completed
5	2020-21	FDP	AICTE	Dr. K. Ashoka Reddy	5,54,000	Completed
6	2020-21	STTP	AICTE	Dr. K. Ashoka Reddy	3,41,333	Completed
Total-22,45,333						

Dept. of Electronics and Communication Engineering:

No. of FDPs Conducted / attended yearwise

Academic Year	No of FDP/Workshops/STTP/Seminar etc Conducted	No of FDP/Workshops/STTP/Seminar etc Organized
2023-24	02	21
2022-23	06	38
2021-22	10	71
2020-21	02	109
2019-20	01	86
2018-19	02	81

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Strength

- 1. Continuous progressive evaluation system for students**
- 2. Regularly curriculum is updated with inputs from the stakeholders**
- 3. Strong industry and alumni collaboration with visible, measurable outcomes.**
- 4. Large number of initiatives undertaken for supporting number of slow learners and students from diverse backgrounds.**

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Strength

5. Use of Innovative teaching methods like use of course web for posting course videos, lecture summaries and self-learning topics by faculty which is useful for the students to view the same at any time throughout the semester
6. The department has strong placement record. In last three years around 90 % of eligible candidates were placed in various MNCs with good CTC
7. Good research paper/journal/book publications by faculty and students
8. Students undertake MOOCs, NPTEL Courses and earn credits leading to Minor certifications in other specializations and awarding of Honorary degree

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Weaknesses :

- 1. No provision to admit Ph.D. Scholars as the department is not recognized as a research center by KU**
- 2. Lack of flexibility in admitting International students to degree programs**
- 3. Limited resources and funding for infrastructure development and maintenance.**
- 4. High student-to-faculty ratio affecting personalized attention and mentoring.**
- 5. Inadequate training or professional development opportunities for faculty and staff.**

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Opportunities:

1. Job oriented and skill development courses can be introduced for self employment and in house training for students in latest domains and upcoming technologies
2. Expansion of interdisciplinary programs or collaborations with other departments.
3. Partnerships with local industries or startups for research projects, internships, and job placements.
4. International collaborations for exchange programs, joint research, or student recruitment.
5. Customized training programs or certifications to address specific industry skill gaps.
6. Establishment of research centers or incubators focusing on niche areas or emerging trends in ECE

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Challenges:

1. To provide job opportunities to the PG degree holders.
2. Attract good rankers and bright students to join in UG and PG courses
3. With growing interdisciplinary approach in teaching-learning process, there is a greater challenge to periodically restructure our research infrastructure and industry partnership
4. More research grants and industry partnerships are needed for student product development activities in order to groom potential entrepreneurs.
5. Rapid advancements in technology necessitating frequent updates to infrastructure and curriculum.
6. Addressing environmental sustainability concerns in engineering practices and education

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Short term goals

Short term goal 1: To make the students industry ready
Short term goal 2: To be recognized as Research Centre
Short term goal 3: Academic excellence

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

long term goals

Long term goal 1: To see that all the faculty in the department are with doctoral degrees
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Long term goal 2: Initiate more industrial tie ups for consultancy projects.

Long term goal 3: Industry institute interaction towards establishing centre of excellence

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Major achievements

- **Received Project contact : 02**
- **Received FDP Grants: 04**
- **No of Faculty completed PhD: 06**
- **New labs established: 02**

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Best practices

- 1) The department publishes two newsletters annually.**
- 2) One technical magazine is published by the department each year.**
- 3) Faculty members in the department provide ongoing counseling to students to enhance their academic performance.**
- 4) The department organizes guest lectures featuring industry experts and alumni annually to inspire students.**

Dept. of Electronics and Communication Engineering:

Criterion 7 - Values and Best Practices

Best practices

- 5) Third-year students, accompanied by faculty members, visit industries annually to gain insights into real-world applications.
- 6) In every laboratory, students utilize a laboratory manual cum record book prepared by the department's lab handling faculty.
- 7) The department hosts workshops, seminars, and other technical events for students with the backing of professional bodies such as IEEE, WIE, ISTE, and IETE, led by the Head of the Department of ECE.
- 8) It is compulsory for students to undergo internships, deliver seminar presentations, undertake hardware mini-projects, and execute major projects, subsequently publishing them in peerreviewed publications.
- 9) Students are provided access to state-of-the-art equipment and software through the AICTE-sponsored IDEA lab, fostering innovation and incubation.

Dept. of Electronics and Communication Engineering:



Association Poster Release for the A.Y- 2023-24

Dept. of Electronics and Communication Engineering:



Dept. of Electronics and Communication Engineering:



Dept. of Electronics and Communication Engineering:



Thank you