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.
काकतीय प्रैद्योगिकी 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)
Estd-1980 KITSW
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## Department of Electronics Communication & Instrumentation Engineering (ECIE)

# Welcome to
# The N.B.A. Expert Committee

**(NBA Expert Team Visit : *March 7th - 9th, 2025*)**

# Department of Electronics Communication & Instrumentation Engineering (ECIE)

**Department Profile**

- Established in the year 1981
- Formerly known as department of EIE
- First in the country to start B.Tech. in EIE

- Academic Programmes offered
  - B. Tech (Electronics & Instrumentation Engineering)
    - Started in 1981
    - Withdrawn in 2020
  - B. Tech (Electronics Communication & Instrumentation Engineering)
    - Started in 2019 with an intake of 60 students
  - M. Tech (Embedded Systems & VLSI)
    - Started in 2021 with an intake of 12 students
  - Ph. D
    - Recognized as Research Center (KU, Warangal) in 2009
    - Maximum 08 Scholars under each Supervisor

# ECIED - FACULTY & STAFF

| Faculty | Number |
|---|---|
| Professors | 03 |
| Associate Professors | 03 |
| Assistant Professors | 07 |
| Total | 13 |

| Faculty | Number |
|---|---|
| With Ph. D | 07 |
| Submitted Thesis | 01 |
| Pursuing Ph.D. | 05 |

| Non-Teaching Staff | Number |
|---|---|
| Lab Assistants | 03 |
| Programmer | 01 |
| Junior Assistant | 01 |
| Attender | 01 |
| Total | 06 |

| Non-Teaching Staff | Number |
|---|---|
| M. Tech | 01 |
| B. Tech | 02 |
| MCA | 01 |
| PGDCA | 01 |

# INTRODUCTION

## NBA Accreditation status of B. Tech. (EIE) Programme *(previously offered)*

- **First time accreditation**
  - ✓ **3 years (w.e.f. 07.05.2003)**
  - ✓ **F. No. NBA/ACCR-190/203, *dated 20.05.2003***
- **Reaccreditation**
  - ✓ **Reaccredited for 03 years (*w.e.f.* 19.07.2008)**
  - ✓ ***F. No. NBA / ACCR-15/ 2001 dated 09.07.2008***
- **Reaccreditation**
  - ✓ **Provisionally accredited for 03 years (*w.e.f.* 01.07.2014 to 30.06.2017)**
  - ✓ ***F. No. 11-76/2010/NBA dated 13.10.2014 &***
  - ✓ ***F. No. 11-76/2010/NBA dated 08.07.2016***
- **Reaccreditation under Tier-II**
  - ✓ **Provisionally accredited for 03 years (*w.e.f.* 01.07.2018 to 30.06.2021)**
  - ✓ ***F. No. 11-76/2010/NBA dated 29.03.2018 & F. No. 11-76/2010/NBA dated 21.08.2020***
- **Reaccreditation under Tier-1**
  - ✓ **F.No. 11-76/2010/NBA. Dt.17th Feb. 2022 for 03 years (w.e.f 01.07.2021)**

# DEPARTMENT ACHIEVEMENTS/ RECOGNITIONS

## Collaborations established:

- **Recognized as Research Centre by Kakatiya University:** The research center produced 5 PhDs till date with 5 research scholars currently pursuing PhD
- **MoUs signed** with Teckybot, Vizag and TechFLUENT Solutions Pvt. Ltd., Hyderabad
- **Centre of Excellence (CoE): NI LabVIEW Academy** in collaboration with National Instruments, Bangalore
- **Indo-American Artificial Heart Project (IAAHP) :** Artificial Heart Project in collaboration with University of Pittsburg, USA

# FACULTY ACHIEVEMENTS/RECOGNITIONS

## List of Ph.D.s awarded/ submitted thesis

| S. No | Name of the faculty | Name of the University | Year of award of Ph.D |
|---|---|---|---|
| 1. | Dr. M. Sreelatha | Osmania University, HYD | March, 2024 |
| 2. | Dr. O. Anjaneyulu | JNTU, HYD | June, 2022 |
| 3. | Dr. B. Jeevan | Kakatiya University,WGL | Dec. 2022 |
| 4. | Smt. R. Nirmala Devi | JNTU, HYD | June, 2024 (Submitted Thesis) |

## Ph.D. guidance by faculty

| S. No | Name of the Faculty | Name of the Research scholar | Name of the University | Awarded in the Year |
|---|---|---|---|---|
| 1. | Dr. K. Sivani | Dr. B. Jeevan | KU, WGL | 2022 |
| 2 . | | Dr. M. Raghu Ram | JNTUH, Hyd. | 2020 |
| 3. | | Dr. E. Hari Krishna | JNTUH, Hyd | 2021 |
| 4. | | Dr. B. Harish | JNTUH, Hyd. | 2021 |
| 5. | | Dr. Ch. Navitha | JNTUH, Hyd | 2021 |
| 6. | | Smt T.Swapna | JNTUH, Hyd. | 2018 |
| 7. | | Sri.Ch.Pavan | JNTUH, Hyd | 2024(Submitted) |

## Faculty Research / Certifications

| Item | CAY: 2024-25 | CAYm1: 2023-24 | CAYm2: 2022-23 | CAYm3: 2021-22 | Total |
|---|---|---|---|---|---|
| Journal Papers- (SCI/SCOPUS) | 08 | 02 | 13 | 04 | 27 |
| Conf. Proc., - International | - | 03 | 07 | 03 | 13 |
| Book Chapters | - | - | - | - | - |
| Patents Filed / Published | - | - | - | 01(Applied) | - |
| Grants Received | - | 01 (Applied) | 02 (Applied) | - | - |
| FDPs/STTPs Organized | 01 | 01 (Applied) | - | - | 01 |
| FDPs/ STTPs attended | 03 | 22 | 22 | 25 | 72 |
| NPTEL Certifications | 01 | 16 | 14 | - | 31 |

# STUDENTS' ACHIEVEMENTS AND RECOGNITIONS

## Student Achievements – T&P, HE and EDC Details

| Pass out Batch (PoB) | Intake | No. of final year students | No. of students placed in campus | No. of students joined in Higher Education | No. of student Entrepreneurs |
|---|---|---|---|---|---|
| 2021-25 | 60 | 55 | 12 | NA | NA |
| 2020-24 | 60 | 51 | 20 | 5 | - |
| 2019-23 | 60 | 60 | 32 | 13 | - |

## Student Achievements – Internships and NPTEL certifications

| Pass out Batch (PoB) | Internships | NPTEL Certifications |
|---|---|---|
| 2021-25 | 55 | 13 |
| 2020-24 | 51 | 06 |
| 2019-23 | 56 | - |

## Student Activities – ECIEA/ SAC Details

| S. No. | Academic Year (AY) | Student Workshops | | Technical Events | | Cultural Events/ Co-Curricular Events | |
|---|---|---|---|---|---|---|---|
| | | No. of Workshops Conducted | No. of students participated | No. of events conducted | No. of students participated | No. of events conducted | No. of students participated |
| 1. | CAY: 2024 – 25 | 01 | 50 | 07 | 115 | - | - |
| 2. | CAYm1: 2023 – 24 | 01 | 62 | 07 | 262 | 02 | 09 |
| 3. | CAYm2: 2022-23 | 01 | 71 | 10 | 141 | 02 | 08 |
| 4. | CAYm3: 2021-22 | 01 | 36 | 05 | 173 | 01 | 06 |

# CRITERIA-1
# VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES

## VISION OF THE DEPARTMENT

**V: To achieve excellence in Electronics Communication and Instrumentation Engineering by imparting quality education to the students with a spirit of innovation & entrepreneurship aligned with the holistic & multidisciplinary approach and produce engineering graduates to serve industry and society**

## MISSION OF THE DEPARTMENT

**M1: To impart the required knowledge, skills and qualities to the students and make them industry ready to serve the society**

**M2: To upgrade the pedagogical skills and resources for effective teaching-learning process with the help of dedicated faculty and staff**

**M3: To create ambience that drives students towards innovation, research and entrepreneurship**

**M4: To inculcate professional ethics and academic integrity among the students**

# PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

*The Undergraduates of Electronics Communication and Instrumentation Engineering will be able to…*

**PEO1:** **apply the knowledge of core courses of electronics communication and instrumentation engineering for development of effective and innovative solutions to engineering problems**

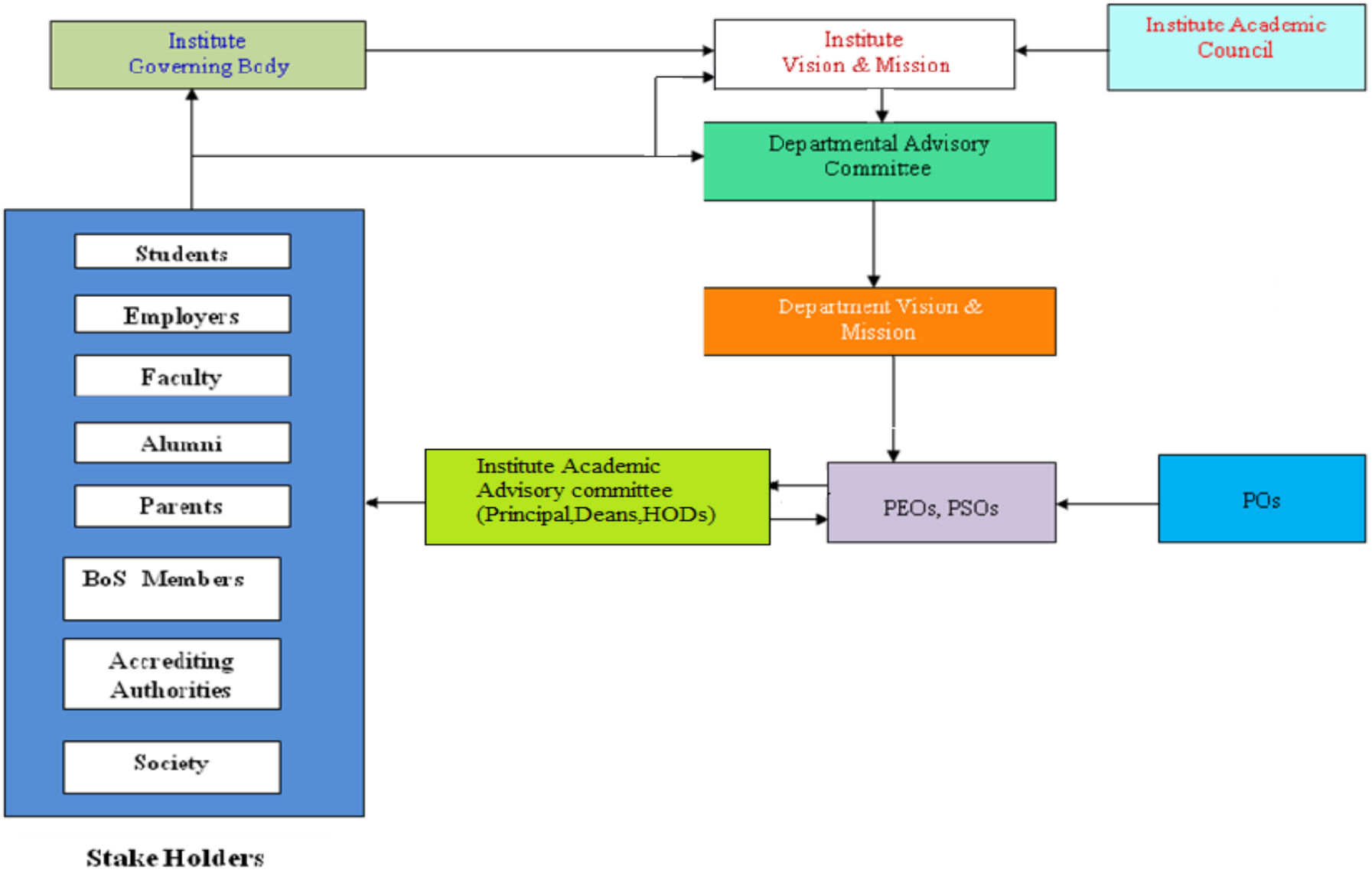
**PEO2:** **excel in profession, higher education and entrepreneurship with updated technologies in communication, signal processing, VLSI, embedded systems, and instrumentation domains**

**PEO3:** **exhibit professional ethics, effective communication, and teamwork in solving engineering problems by adapting contemporary research towards sustainable development of society activities**

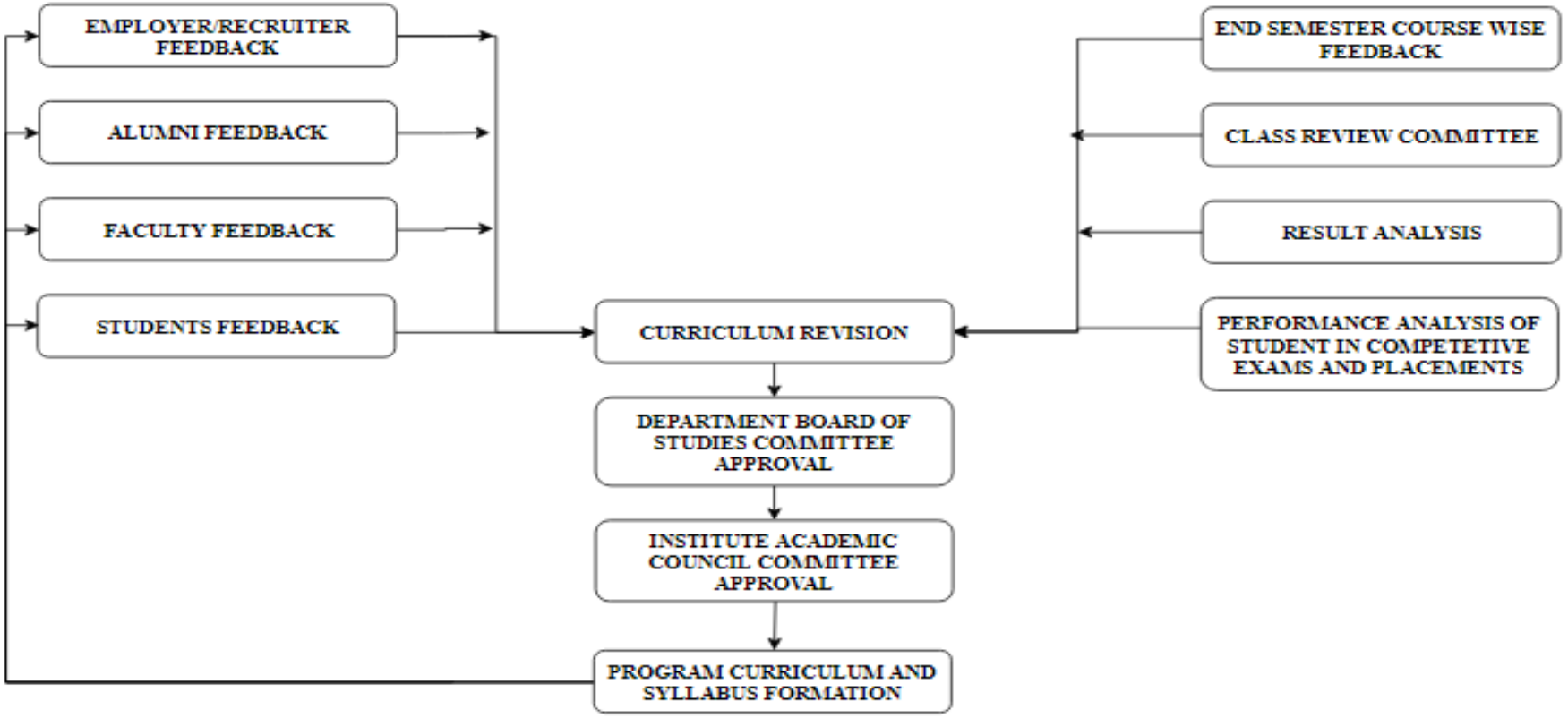
| PEOs | Mission | | | |
|---|---|---|---|---|
| | M1 | M2 | M3 | M4 |
| PEO1 | 3 | 3 | 2 | 2 |
| PEO2 | 3 | 2 | 3 | 2 |
| PEO3 | 2 | 3 | 3 | 2 |

*1: Slight (Low)*
*2: Moderate (Medium)*
*3: Substantial (High)*

# PROCESS FOR DEFINING VISION, MISSION & PEOs



# Process for Curriculum Revision

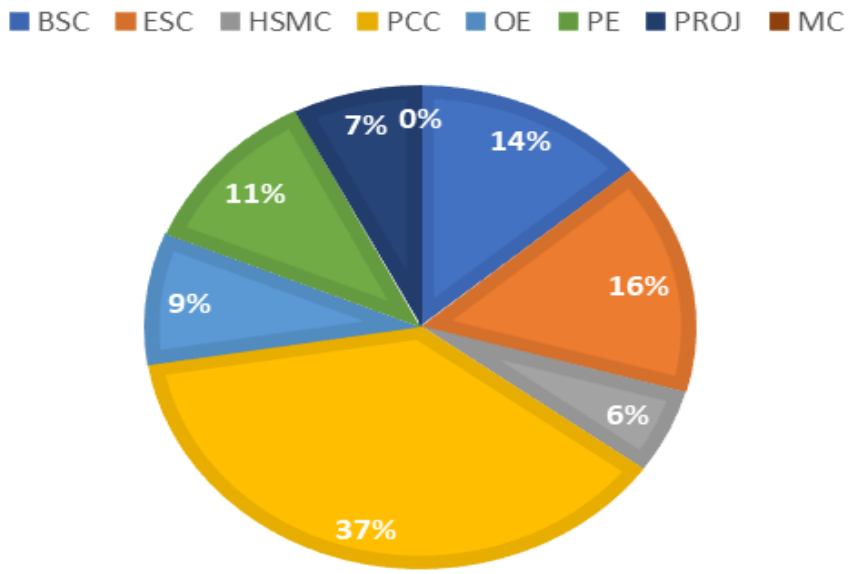



- Institute curriculum structure
- Curricular gaps & KSQs identification
- Inputs from industry experts
- Feedback from stake holders

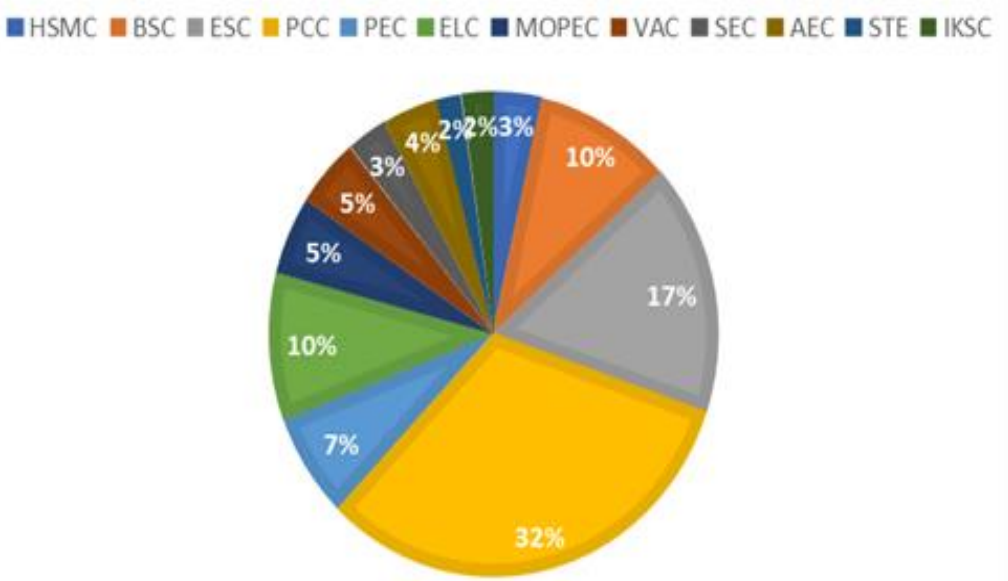
# Curriculum Enrichment – Revision

| **URR18-R22** *(w.e.f. 2019-23)* | | **URR24** *(w.e.f. 2024-25)*<br>New Courses Added: **19** | |
|---|---|---|---|

## URR18-R22 SCHEME




## URR24 SCHEME



# Curriculum Enrichment – Revision

## URR18 R22 Scheme - Weightage

| Course Component | Curriculum Content (% of total number of credits of the program) | Total number of contact hours | Total number of credits |
|---|---|---|---|
| Basic Sciences | 13.75% | 24 | 22 |
| **Engineering Sciences** | **15.625%** | **28** | **25** |
| Humanities and Social Sciences | 5.625% | 13 | 9 |
| **Program Core** | **37.5%** | **75** | **60** |
| **Program Electives** | **11.25%** | **18** | **15** |
| Open Electives | 8.75% | 15 | 18 |
| Project(s)/ Internships/Seminars | 7.5% | 36 | 12 |
| **Total number of Credits** | | | **160** |
| *Minor / Honors (Optional)* | *0%* | | *7* |

## URR24 Scheme - Weightage

| Course Component | Curriculum Content | Total no. of contact hours | Total no. of credits |
|---|---|---|---|
| Basic Science Courses (BSC) | 9.88% | 19 | 17 |
| **Engineering Science Courses (ESC)** | **16.86%** | **37** | **29** |
| Humanities & Social Sciences including Management (HSMC) | 3.48% | 07 | 06 |
| **Program Core Courses (PCC)** | **31.97%** | **62** | **55** |
| **Program Elective Courses (PEC)** | **6.97%** | **12** | **12** |
| Multidisciplinary Open Electives Courses (MOPEC) | 5.23% | 09 | 09 |
| **Experiential Learning Courses (ELC)** | **9.88%** | **24** | **08** |
| Value Added Courses (VAC) | 4.65% | 08 | 08 |
| **Skill Enhancement Courses (SEC)** | **2.90%** | **10** | **17** |
| **Ability Enhancement Courses (AEC)** | **4.06%** | **02** | **05** |
| Startups and Entrepreneurship Courses (STE) | 1.74% | 03 | 03 |
| Indian Knowledge System Courses (IKSC) | 2.32% | 04 | 04 |
| **Total number of Credits** | | | **172** |
| With EAA+MC | | | 225 |

## Curricular gaps identified in URR1-8R22 & Actions taken to meet the gap in URR24 revision

| Course Code | New Course Name | Skills Developed to overcome Curriculum gap | Targeted PO |
|---|---|---|---|
| U24AE107 | IDEA Lab Makerspace | Ability to apply creative problem-solving and prototyping skills to develop innovative engineering solutions. | PO5 |
| U24EL108 | Practicum-1 | To reinforce the students' theoretical knowledge and develop their ability to apply this knowledge to the solution of practical problems. | PO5 |
| U24VA109 | SEA – I / SAA-1 | Focus on building positive mindset: adopting optimism, acceptance, resilience, gratitude, mindfulness, and integrity in life will help student develop and maintain a positive mindset. | PO10 |
| U24AE110 | Expert Talk Series-1 | Filling gap between Industry and Institution. | PO6 |
| U24MH205 | English Communication and Report Writing | Advanced Communication Skills at Professional Level | PO2 |
| U24ME207 | Engineering Graphics through CAD | Ability to create and interpret engineering drawings using CAD tools. | PO5 |
| U24SE208 | Programming Skill Development (PSD) Lab - 1 | Advanced Programming Skills | PO2, PO3, PO4, PO5, PO9, PO12 |
| U24MH508 | Technical English | Ease of cracking most of the recruitment exams | PO2 |
| U24ST505A | Design Thinking | Apply user-centered approaches to solve complex problems. | PO3 |
| U24ST505B | Innovative Product Design and Development | Develop innovative and functional product solutions. | PO5 |
| U24ST505D | Design Studio | Create prototypes and design models using industry techniques. | PO3 |
| U24MB505B | Industrial Psychology | Improve workplace efficiency using psychological principles. | PO8 |
| U24MB505C | E-Commerce and Digital Marketing | Implement online business strategies for market growth. | PO11 |

## Curricular gaps identified in URR1-8R22 & Actions taken to meet the gap in URR24 revision

| Course Code | New Course Name | Skills Developed to overcome Curriculum gap | Targeted PO |
|---|---|---|---|
| U24MB505D | Organizational Behaviour | Analyze human behavior in organizations for effective management. | PO9 |
| U24CI604 | Introduction to Data Bases | Design and manage relational databases efficiently. | PO5 |
| U24OEX01CIG | LabVIEW Programming | Develop automated measurement and control applications. | PO5 |
| U24OEX01CIH | PLC and DCS | Program and troubleshoot industrial automation systems. | PO5 |
| U24OEX01CIK | Non - Destructive Testing | Evaluate material integrity using non-invasive techniques. | PO4 |
| U24CI802A | Embedded Linux Systems | Develop real-time applications on embedded Linux platforms. | PO5 |
| U24CI803A | Embedded Automotive Systems | Design and implement automotive embedded solutions. | PO5 |
| U24CI601C | System Verilog for Verification | Perform functional verification of hardware designs. | PO5 |
| U24CI803C | Static Timing Analysis | Analyze and optimize timing performance in VLSI circuits. | PO5 |
| U24CI601D | Computer Vision | Develop applications for image processing and pattern recognition. | PO5 |
| U24CI702D | Deep Learning | Apply neural networks for AI-driven solutions. | PO5 |
| U24CI802D | Natural Language Processing | Implement NLP techniques for text and speech applications. | PO5 |
| U24CI803D | Reinforcement Learning | Design intelligent agents using reinforcement learning algorithms. | PO5 |

# Teaching Learning Process & Evaluation

- The **academic activities** of the institute are regulated by the Academic advisory committee (AAC) consisting of all the HoDs & Deans with Principal as its Chairperson

- **Activities of Teaching & Learning process**
  - ❖ Adherence to Almanac
  - ❖ Release of **Outcome based Lecture Schedule** (OBLS) and Table of Specifications (ToS)
  - ❖ Course committee meetings (CCMs) and Result committee meetings (RCMs)
  - ❖ **Continuous Internal Evaluation (CIE)** – Minor Exams , Tutorial sheets, Programming Assignments, MSEs are designed with relevant CDLL targeting to map the COs of the course
  - ❖ Course Review Committee (CRC) meetings, students online feedback of Teaching Learning process
  - ❖ Pedagogical initiatives
  - ❖ Collaborative learning & Self learning
  - ❖ **Mentoring system** to help at individual levels
  - ❖ Remedial/ Makeup classes are conducted for the weak learners after MSE/ ESE
  - ❖ Facilitating students with **Course Web facility** and promote $I^2RE$ culture among students
  - ❖ Encouraging students to take-up quality projects @ major project, mini project, course project & practicum
  - ❖ Mandatory student internships and industrial tours

# Teaching Learning Process & Evaluation

- **Quality of end semester examination (ESE), mid semester examination (MSE) question papers, assignments and evaluation**
  - ✓ Question papers are set in compliance with ToS
  - ✓ The Tutorials and Assignments are designed with relevant CDLL targeting to map the COs of the course
  - ✓ **Programming assignments** are designed to enhance the coding skills of students
- **Evidence for COs coverage:**
  - ✓ **Question papers are set** to see that all COs are addressed and questions are mapped to Cognitive Domain Learning Level (CDLL) as per the revised blooms taxonomy
  - ✓ All **courses** have **four COs** (CO1,CO2,CO3 & CO4)
    - ❖ *Minor-I : Covers CO1, Assignment - I: CO1 & CO2*
    - ❖ *Minor-II : Covers CO3, Assignment - I: CO3 & CO4*
    - ❖ *MSE-I: Covers CO1 and CO2*
    - ❖ *MSE-II: Covers CO3 and CO4*
    - ❖ *ESE: Covers CO1, CO2, CO3 & CO4*

# Teaching Learning Process & Evaluation

## Process for ensuring POs & PSOs attainment

- The Department Academic Advisory Committee (DAAC) will ensure that POs and PSOs are met by continuously monitoring the following aspects related to courses such as:
  - ✓ Quality of questions in **assignments, mid examinations** and their relevance to COs
  - ✓ Continuous internal evaluation in laboratory classes
  - ✓ Evaluation of assignments and answer scripts of mid examinations
  - ✓ Calculations of Attainments of COs and CDLLs for Minors, MSE and ESE exams
  - ✓ Planning and action to be taken are recorded as ATTRs/ATRs 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.
  - ❖ Internships, Industrial visits and Industrial training
  - ❖ Participation of experts from industry in curriculum development and expert talks
  - ❖ Workshops, conferences and symposia with joint participation of institute and industry

# CRITERIA-3
# Program Outcomes (POs)

| Program Outcomes | |
|---|---|
| PO1 | Engineering Knowledge |
| PO2 | Problem Analysis |
| PO3 | Design/Development of Solutions |
| PO4 | Conduct Investigations of Complex Problems |
| PO5 | Modern Tool Usage |
| PO6 | The Engineer and Society |
| PO7 | Environment and Sustainability |
| PO8 | Ethics |
| PO9 | Individual and Team Work |
| PO10 | Communication |
| PO11 | Project Management and Finance |
| PO12 | Life-Long Learning |

## Program Specific Outcomes

*The Students of Electronics Communication and Instrumentation Engineering will be able to…*

PSO1: **apply the fundamentals of Electronics, Communication Signal processing, VLSI, Embedded Systems and Instrumentation** in development of hardware and software prototypes and systems for complex engineering problems

PSO2: **apply appropriate methodology, contemporary hardware and software tools** to solve complex engineering problems related to embedded systems

# Course Outcomes (COs)



Course outcomes are framed for every course

Each course outcome is mapped to program outcomes with relevant correlation levels

- **3**-High
- **2**-Medium
- **1**-Low
- - for no correlation

Average of each PO correlation level is taken as target attainment for that PO

| **U18CI304 Signals Systems and Random Processes IV SEMESTER** |
|---|
| CO1 :Classify CT and DT signals & systems and perform convolution for finding response of an LTI system to any arbitrary signal |
| CO2 :Evaluate CTFT& DTFT of standard signals and apply properties of CTFT & DTFT for solving LCCDE |
| CO3 :Determine the z-transform of standard DT signals with ROC, use properties of z-transform to solve difference equations, evaluate stability of an LTI system and realize the DT systems in direct, cascade & parallel forms |
| CO4 :Evaluate various statistical parameters of a random variable and interpret random processes |

# Sample mapping of Course Outcomes with POs



| U18CI304 Signals Systems and Random Processes IV SEMESTER |
|---|
| CO1 :Classify CT and DT signals & systems and perform convolution for finding response of an LTI system to any arbitrary signal |
| CO2 :Evaluate CTFT& DTFT of standard signals and apply properties of CTFT & DTFT for solving LCCDE |
| CO3 :Determine the z-transform of standard DT signals with ROC, use properties of z-transform to solve difference equations, evaluate stability of an LTI system and realize the DT systems in direct, cascade & parallel forms |
| CO4 :Evaluate various statistical parameters of a random variable and interpret random processes |

*1: Slight (Low); 2: Moderate (Medium); 3: Substantial (High)*

## U18CI304 Signals Systems and Random Processes III SEMESTER

| Course | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| U18CI304.1 | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 |
| U18CI304.2 | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 |
| U18CI304.3 | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 |
| U18CI304.4 | 2 | 1 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 |
| **Average** | **2** | **1** | **1** | **1** | **-** | **-** | **-** | **-** | **-** | **-** | **-** | **1** | **2** | **1** |

CAM Justification table

PO Targets

# Course Outcome Attainment Level (COAL)

**examination is set by considering number of students scored more than the threshold mark of that**

- **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

| Total Number of Students | 60 | | | |
|---|---|---|---|---|
| Course outcome | CO1 | CO2 | CO3 | CO4 |
| Maximum Marks | 15 | 15 | 15 | 15 |
| Threshold (Th) *(Th=50% of Maximum Marks)* | 7.5 | 7.5 | 7.5 | 7.5 |
| No. of Students Count >= Th | 55 | 45 | 54 | 41 |
| % of Students Count >= Th | 91.6% | 75% | 90% | 68.3% |
| Course Outcome Attainment Level (COAL) | 3 | 2 | 3 | 1 |

## Course Outcome Attainment Level for courses

# Course Outcome (CO) & Cognitive Domain Attainment Level (CDAL)



## MSE OBE report – COAL

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE
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Office of the Controller of Examinations
website: www.kitsw.ac.in | e-mail: coekitsw@gmail.com | ✆ &: +91 870 2564858, Ext. 230 | Fax: +91 870 2564320

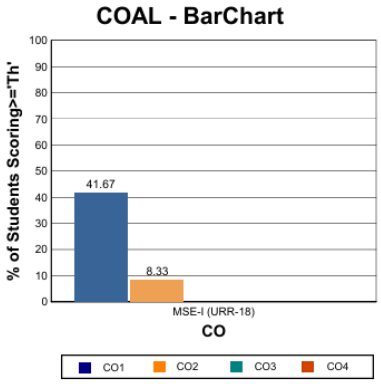
ABSTRACT ON COURSE OUTCOME ATTAINMENT LEVEL

ECI B.TECH. IV SEMESTER 2020 - 2021 U18CI410 MICROPROCESSOR SYSTEMS AND INTERFACING

| Course Name | Faculty Name | Type of Exam | Date of Exam | Academic Year & Sem |
|---|---|---|---|---|
| MPSI | | MSE-I (URR-18) | | 2021 - 2022 IV SEMESTER |

| Total Number Of Students | 48 | | | |
|---|---|---|---|---|
| Course Outcome | CO1 | CO2 | CO3 | CO4 |
| Max Marks | 15.00 | 15.00 | -- | -- |
| Threshold('Th')('Th'=50% of Maximum Marks) | 7.50 | 7.50 | -- | -- |
| No of Students Scoring >= 'Th' | 20 | 4 | | |
| % of Students Scoring >= 'Th' | 41.67 | 8.33 | | |
| Course Outcome Attainment Level(COAL) | 0 | 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' |




## MSE OBE report – CDAL

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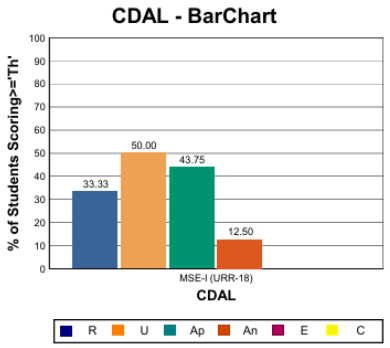
ABSTRACT ON COGNITIVE DOMAIN ATTAINMENT LEVEL

ECI B.TECH. IV SEMESTER 2020 - 2021 U18CI410 MICROPROCESSOR SYSTEMS AND INTERFACING

| Course Name | Faculty Name | Type of Exam | Date of Exam | Academic Year & Sem |
|---|---|---|---|---|
| MPSI | | MSE-I (URR-18) | | 2021 - 2022 IV SEMESTER |

| Total Number Of Students | 48 | | | | | |
|---|---|---|---|---|---|---|
| Cognitive Domain Learning Level (CDLL) | R | U | Ap | An | E | C |
| Max Marks | 4.00 | 2.00 | 12.00 | 12.00 | -- | -- |
| Threshold('Th')('Th'=50% of Maximum Marks) | 2.00 | 1.00 | 6.00 | 6.00 | -- | -- |
| No of Students Scoring >= 'Th' | 16 | 24 | 21 | 6 | | |
| % of Students Scoring >= 'Th' | 33.33 | 50.00 | 43.75 | 12.50 | | |
| Cognitive Domain Attainment Level (CDAL) | 0 | 0 | 0 | 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' |



# CO & PO Attainment Calculation

KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE
(An Autonomous Institute under Kakatiya University, Warangal)
Office of the Controller of Examinations

ABSTRACT ON COURSE OUTCOME ATTAINMENT LEVEL

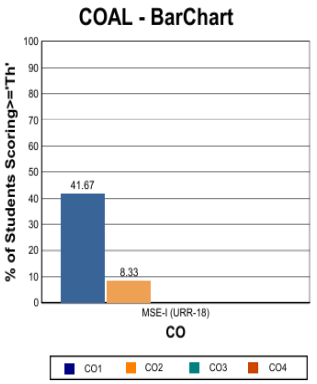
ECI B.TECH. IV SEMESTER 2020 - 2021 U18CI410 MICROPROCESSOR SYSTEMS AND INTERFACING

| Course Articulation Matrix of U18CI410 MICROPROCESSOR SYSTEMS AND INTERFACING | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Course | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO 1 | PSO 2 |
| U18CI410.1 | 1 | 1 | 1 | - | - | - | - | - | - | - | - | 2 | 2 | 2 |
| U18CI410.2 | 1 | 2 | 2 | - | 1 | - | - | - | - | - | - | 2 | 2 | 2 |
| U18CI410.3 | 1 | 2 | 2 | - | - | - | - | - | - | - | - | 2 | 2 | 2 |
| U18CI410.4 | 1 | 2 | 2 | - | 1 | - | - | - | - | - | - | 2 | 2 | 2 |
| Average | 1 | 1.75 | 1.75 | - | 1 | - | - | - | - | - | - | 2 | 2 | 2 |

| Course Name | Faculty Name | Type of Exam | Date of Exam | Academic Year & Sem |
|---|---|---|---|---|
| MPSI | | MSE-I (URR-18) | | 2021 - 2022 IV SEMESTER |

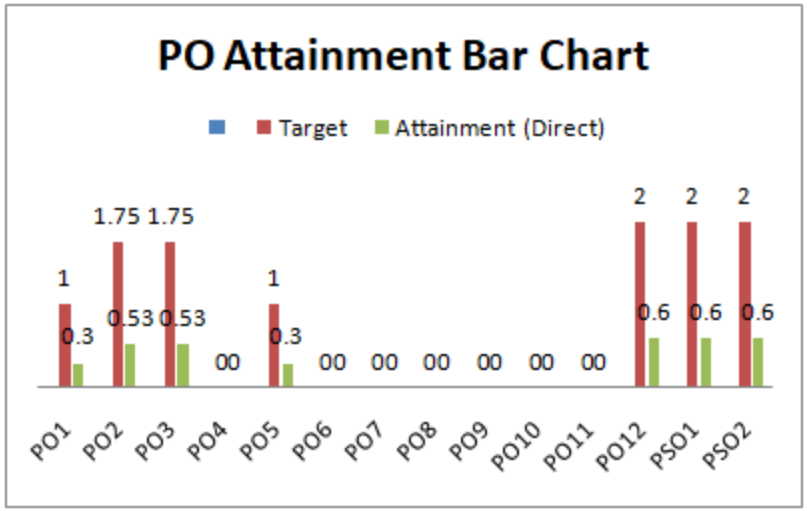
| Total Number Of Students | 48 | | | |
|---|---|---|---|---|
| Course Outcome | CO1 | CO2 | CO3 | CO4 |
| Max Marks | 15.00 | 15.00 | -- | -- |
| Threshold('Th')('Th'=50% of Maximum Marks) | 7.50 | 7.50 | -- | -- |
| No of Students Scoring >= 'Th' | 20 | 4 | | |
| % of Students Scoring >= 'Th' | 41.67 | 8.33 | | |
| Course Outcome Attainment Level(COAL) | 0 | 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' |

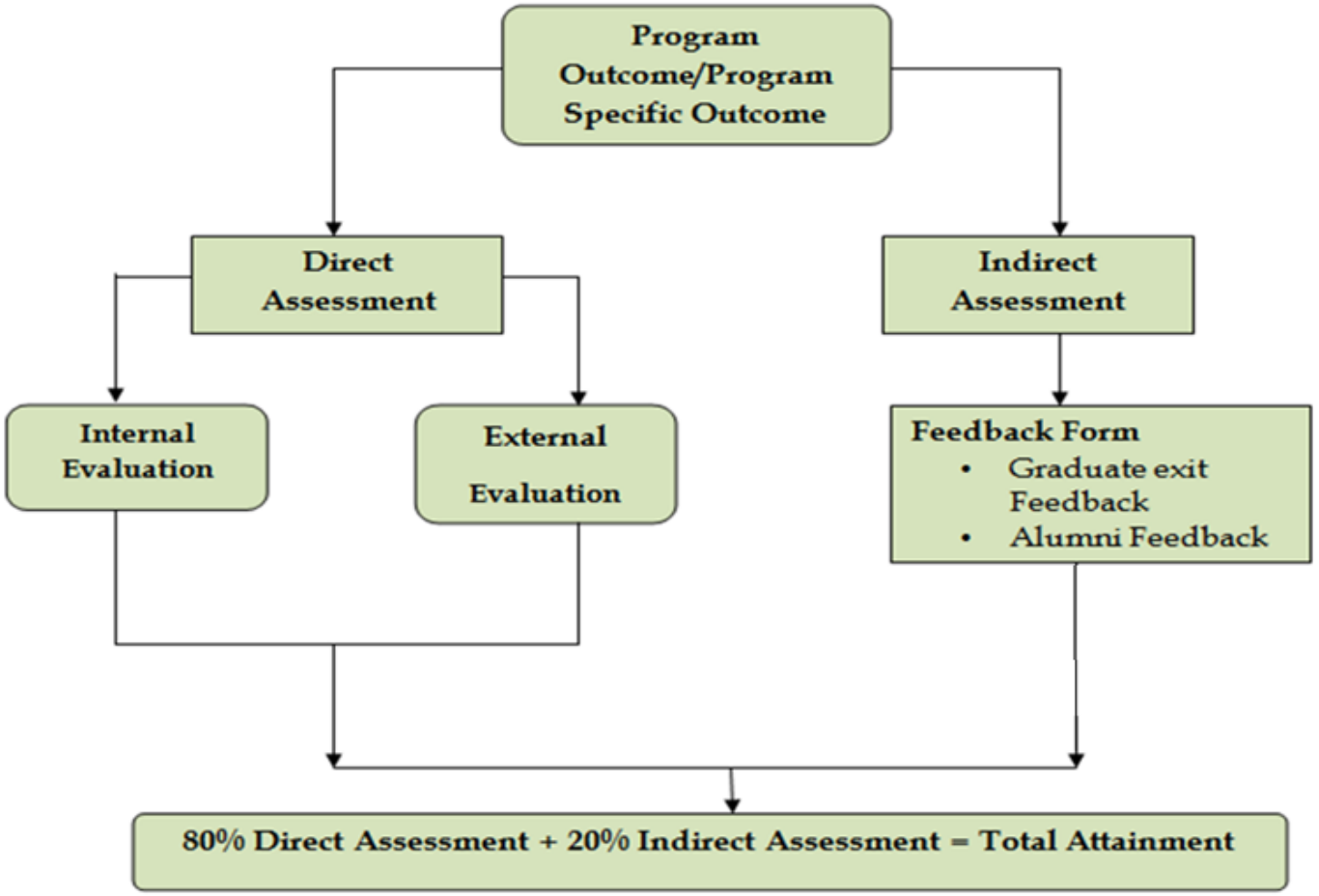



**Overall CO attainment for the course U18CI410 Microprocessor Systems and Interfacing: 0.90**
**PO attainment = (Target PO level) * (CO attainment/3) = 1*(0.9/3) = 0.3**

| PO/PSO | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Target | 1 | 1.75 | 1.75 | | 1 | | | | | | | 2 | 2 | 2 |
| Course attainment | 0.90 | | | | | | | | | | | | | |
| Attainment (Direct) | 0.30 | 0.53 | 0.53 | 0.00 | 0.30 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.60 | 0.60 | 0.60 |



# Assessment of Program Outcomes



# Criteria-4
# Students Performance

## Students Enrollment - Total number of students admitted in to the Program

| Item | 2024-25 (CAY) | 2023-24 (CAYm1) | 2022-23 (CAYm2) | 2021-22 (CAYm3) | 2020-21 (CAYm4) | 2019-20 (CAYm5) |
|---|---|---|---|---|---|---|
| Sanctioned intake of the program(N) | 60 | 60 | 60 | 60 | 60 | 60 |
| Total number of students admitted in first year minus number of students migrated to other programs/ institutions plus No. of students migrated to this program (N1) | 60 | 55 | 34 | 53 | 55 | 53 |
| Number of students admitted in 2nd year in the same batch via lateral entry (N2) | 0 | 07 | 26 | 11 | 10 | 07 |
| Separate division students, If applicable (N3) | 02 | 0 | 0 | 0 | 0 | 0 |
| **Total number of students admitted in the programme (N1 + N2 + N3)** | **62** | **62** | **60** | **64** | **65** | **60** |

# Number of students who have successfully graduated without backlogs

| Year of Entry | *N1 + N2 + N3* *(As defined above)* | Number of students who have successfully graduated without backlogs in any semester/year of study *(Without Backlog means no compartment or failures in any semester/year of study)* | | | |
|---|---|---|---|---|---|
| | | I Year | II Year | III Year | IV Year |
| CAY 2024-25 | 62 | - | | | |
| CAYm1 2023-24 | 62 | 20 | - | | |
| CAYm2 2022-23 | 60 | 17 | 24 | - | |
| CAYm3 2021-22 | 64 | 25 | 22 | 22 | - |
| CAYm4 (LYG) 2020-24 | 65 | 43 | 15 | 15 | 15 |
| CAYm5 (LYGm1) 2019-23 | 60 | 35 | 42 | 37 | 37 |

# Number of students who have successfully graduated with backlogs

| Year of entry | *N*1 + *N*2 + N3 *(As defined above)* | Number of students who have successfully graduated *(Students with & without backlogs in stipulated period of study)* | | | |
|---|---|---|---|---|---|
| | | I Year | II Year | III Year | IV Year |
| CAY 2024-25 | 62 | - | | | |
| CAYm1 2023-24 | 62 | 52 | - | | |
| CAYm2 2022-23 | 60 | 34 | 59 | - | |
| CAYm3 2021-22 | 64 | 53 | 64 | 59 | - |
| CAYm4 (LYG) 2020-24 | 65 | 45 | 54 | 51 | 51 |
| CAYm5 (LYGm1) 2019-23 | 60 | 53 | 60 | 60 | 60 |

## Students' Success Rate without backlogs in stipulated period of study

| Item | Last Year of Graduate, LYG (2020-24) | Last Year of Graduate minus1, LYGm1 (2019-23) | Last Year of Graduate minus 2, LYGm2 |
|---|---|---|---|
| Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable | 65 | 60 | -NA- |
| Number of students who have graduated without backlogs in the stipulated period | 15 | 37 | -NA- |
| **Success Index (SI)** | **0.23** | **0.62** | -NA- |
| | | **Average Success Index (SI)** | **0.425** |

## Students' Success Rate with backlogs

| Item | Last Year of Graduate, LYG (2020-24) | Last Year of Graduate minus1, LYGm1 (2019-23) | Last Year of Graduate minus 2, LYG*m*2 (CAYm6) |
|---|---|---|---|
| Number of students admitted in the corresponding First Year + admitted in 2nd year via lateral entry and separate division, if applicable | 65 | 60 | -NA- |
| Number ofstudents who have graduated with backlogs in the stipulated period | 51 | 60 | -NA- |
| **Success Index (SI)** | **0.78** | **1.00** | -NA- |
| **Average Success Index (SI)** | | **0.89** | |

# Placement, Higher Education and Entrepreneurship

| Item | CAY (2024-25) Batch 2021-25 | CAY*m1* (2023-24) Batch 2020-24 | CAY*m2* (2022-23) Batch 2019-23 |
|---|---|---|---|
| Total No. of Final Year Students (N) | 55 | 51 | 60 |
| No. of students placed in companies (or) Government Sector (x) | 12 | 20 | 32 |
| No. of students got admissions in premier institutions | 0 | 6 | 11 |
| No. of students turned as entrepreneurs | 0 | 0 | 0 |
| **Placement Index** | **0.21** | **0.50** | **0.71** |
| | | **Average Placement** | **0.48** |

**Placements & Higher Education details**

# Criteria 5: Faculty Information and Contributions

**Faculty Details during Assessment years**

| S. No | Name of the Faculty Member | Research Publications | PhD guidance | PhD granted during Assessment year | Currently Associated (Y/N) Date of Leaving (In case Currently Associated is ("No") | Nature of Association (Regular/ Contract) |
|---|---|---|---|---|---|---|
| 1 | Prof. M. Sreelatha | - | - | - | Y | Regular |
| 2 | Prof. K. Sivani | 14 | 7 | 2+1* | Y | Regular |
| 3 | Prof. K. Venu Madhav | 2 | - | - | Y | Regular |
| 4 | Smt. R. Nirmala Devi | - | - | - | Y | Regular |
| 5 | Dr. O. Anjaneyulu | 1 | - | - | Y | Regular |
| 6 | Dr. M. Raghu Ram | 3 | - | - | Y | Regular |
| 7 | Sri B. Shashikanth | 3 | - | - | Y | Regular |
| 8 | Dr. B. Jeevan | 10 | - | - | Y | Regular |
| 9 | Dr. K. Srinivas | 4 | - | - | Y | Regular |
| 10 | Sri B. Venu Maheswar Rao | 1 | - | - | Y | Regular |
| 11 | Smt. B. Smitha | 4 | - | - | Y | Regular |
| 12 | Smt. K. Shailaja | 5 | - | - | Y | Regular |
| 13 | Sri G. Raju | 1 | - | - | Y | Regular |
| 14 | Sri B. Krishna Sandeep | 1 | - | - | N *30.06.2024* | Regular |

# Faculty Administrative/Additional responsibilities

| S. No. | Name | Qualification | Designation | Additional Responsibilities | Experience *(Years)* |
|---|---|---|---|---|---|
| 1 | Prof. M. Sreelatha | Ph.D | *Professor* | Dean SA & Prof. I/c, SP MRG | 34 |
| 2 | Prof. K. Sivani | Ph.D | *Professor* | Head of the Dept. | 34 |
| 3 | Prof. K. Venu Madhav | Ph.D | *Professor* | Dean AA & Prof. I/c, SES MRG | 25 |
| 4 | Smt. R. Nirmala Devi | M.Tech,, (Ph.D) | *Assoc. Professor* | IEEE Interim Branch Counselor | 30 |
| 5 | Dr. O. Anjaneyulu | Ph.D | *Assoc. Professor* | Faculty I/c, AA&ER Cell & Dept. T&P Coordinator | 25 |
| 6 | Dr. M. Raghu Ram | Ph.D | *Assoc. Professor* | UGSEC & UGMINPEC Coordinator | 24 |
| 7 | Sri B. Shashikanth | M.Tech., (Ph.D) | *Asst. Professor* | I3C Coordinator & Dept. Activities Documentation Coordinator | 19 |
| 8 | Dr. B. Jeevan | Ph.D | *Asst. Professor* | Faculty I/c R&D cell & Dept. R&D/ PG Coordinator | 16 |
| 9 | Dr. K. Srinivas | Ph.D | *Asst. Professor* | Dept. Academic Coordinator (DAC) | 16 |
| 10 | Sri B. Venu Maheshwar | M.Tech., (Ph.D) | *Asst. Professor* | Dept. ECIEA/ SAC/ i2RE Coordinator | 13 |
| 11 | Smt. B. Smitha | M.Tech., (Ph.D) | *Asst. Professor* | Dept. TTs/ Exam branch /CMS/ Courseweb Coordinator | 17 |
| 12 | Smt. K. Shailaja | M.Tech., (Ph.D) | *Asst. Professor* | Dept. SEA/SAA Coordinator | 19 |
| 13 | Sri G. Raju | M.Tech., (Ph.D) | *Asst. Professor* | Dept. Alumni/ Website Coordinator<br>Dept. Swayam_MOOCs Coordinator | 17 |
| 14 | Sri B. Krishna Sundeep | M.Tech., (Ph.D) | *Asst. Professor* | --- | 12 |

# Student Faculty Ratio (SFR)

| Year | CAY 2024-25 | CAYm1 2023-24 | CAYm2 2022-23 |
|---|---|---|---|
| u1.1 (II year) | 60+7=67 | 60+26=86 | 60+11=71 |
| u1.2 (III year) | 60+26=86 | 60+11=71 | 60+10=70 |
| u1.3 (IV year) | 60+11=71 | 60+10=70 | 60+7=67 |
| UG1 | 180+44=224 | 180+47=227 | 180+28=208 |
| p1.1 (I year) | 12 | 12 | 12 |
| p1.2 (II year) | 12 | 12 | 12 |
| PG1 | 24 | 24 | 24 |
| Total No. of Students in the Department (S) | 224+24=248 | 227+24=251 | 208+24=232 |
| No. of Faculty in the Department (F) (Excluding I year faculty) | F1=12 | F1=14 | F2=14 |
| **Student Faculty Ratio (SFR)** | (252/13) = 20.66 | (251/14) = 17.92 | (232/14) = 16.57 |
| **Average SFR** | (20.66+17.92+16.57)/3=**18.38** | | |

# Faculty Cadre Proportion

| Year | Professors | | Associate Professors | | Assistant Professors | |
|---|---|---|---|---|---|---|
| | Required RF1 | Available AF1 | Required RF2 | Available AF2 | Required RF3 | Available AF3 |
| CAY (2024-25) | 1 | 3 | 2 | 2 | 8 | 8 |
| CAYm1 (2023-24) | 1 | 2 | 2 | 2 | 8 | 10 |
| CAYm2 (2022-23) | 1 | 2 | 2 | 2 | 7 | 10 |
| **Average Assessment** | **RF1= 1** | **AF1=2.3** | **RF2=2** | **AF2=2** | **RF3=7.6** | **AF3=9.33** |
| | | | | | | **34.1** |

Cadre Ratio Marks =

$$\left(\left[\frac{AF1}{RF1}\right]+\left[\frac{AF2}{RF2}\times 0.6\right]+\left[\frac{AF3}{RF3}\times 0.4\right]\right)\times 10$$

*X is No. of regular faculty with Ph.D*
*Y is No. of regular faculty with M.Tech*
*F is No. of regular faculty required to comply 20:1 faculty student ratio*

# Faculty Qualifications (FQ)

| Year | X | Y | F | FQ = 2.0 x [(10X +4Y)/F)] |
|---|---|---|---|---|
| CAY (2024-25) | 7 | 6 | 12 | 15.67 |
| CAYm1 (2023-24) | 6 | 8 | 12 | 15.33 |
| CAYm2 (2022-23) | 5 | 9 | 11 | 15.64 |
| **Average Assessment (FQ)** | | | | **15.55** |

## FDPs/Work Shops/NPTEL/MOOCs Attended by faculty during 2021-25

| S. No. | Item | CAY: 2024-25 | CAYm1: 2023-24 | CAYm2: 2022-23 | CAYm3: 2021-22 | Total (CAY to CAYm3) |
|---|---|---|---|---|---|---|
| 1 | FDPS/Workshops/ NPTEL/MOOCs Attended | 03 (20- registered for NPTEL Jan - April 2025) | 22 | 22 | 25 | 72 |

## Research Publications by faculty during 2021-25

| S. No. | Item | CAY: 2024-25 | CAYm1: 2023-24 | CAYm2: 2022-23 | CAYm3: 2021-22 | Total (CAY to CAYm3) |
|---|---|---|---|---|---|---|
| 1 | SCI Indexed Journals | 03 | 01 | 08 | 03 | 15 |
| 2 | Scopus Indexed Journals | 05 | 01 | 05 | 01 | 12 |
| 3 | International Conferences | - | 03 | 03 | 06 | 12 |
| 4 | Books/Book Chapters Authored | - | - | - | - | - |

## Faculty Publication details

## PhDs Awarded during 2021-25

| S. No. | AY | Ph.D. awarded | PhD Thesis submitted | Pursuing Ph.D. |
|---|---|---|---|---|
| 1 | CAY: 2024-25 | - | 01 | 06 |
| 2 | CAYm1: 2023-24 | 01 | - | 07 |
| 3 | CAYm2: 2022-23 | 01 | - | 08 |
| 4 | CAYm3: 2021-22 | 01 | - | 09 |

## Faculty Research - PhD guidance by faculty during 2021-25

| S. No. | Name of the PhD scholar | Name of the guide/s | Year of award of Ph.D | University |
|---|---|---|---|---|
| 1. | T. Swapna | Dr. K. Sivani | 2018 | JNTUH, Hyd |
| 2. | M. Raghu Ram | Dr. K. Sivani | 2020 | JNTUH, Hyd |
| 3. | E. Hari Krishna | Dr. K. Sivani | 2021 | JNTUH, Hyd |
| 4. | B. Harish | Dr. K. Sivani | 2021 | JNTUH, Hyd |
| 5. | Ch. Navitha | Dr. K. Sivani | 2021 | JNTUH, Hyd |
| 6. | Sri B. Jeevan | Dr. K. Sivani | 2022 | KU, Wgl |
| 7. | Ms. Shazia Khaliq | Dr. K. Sivani | Pursuing | KU, Wgl |
| 8. | Ch. Pavan Kumar | Dr. K. Sivani | Pursuing | JNTUH, Hyd |

## Dept. Research centre - Ongoing PhDs in the department during 2021-25

| Ongoing Ph.Ds in the Dept. Research centre | | |
|---|---|---|
| **S. No.** | **Name of Research Scholar** | **Research Supervisor** |
| 1 | **Sri B. Venumaheshwar** | **Dr. K. Ashoka Reddy,** *Principal, KITSW* |
| 2 | **Ms. Shazia Khaliq** | **Dr. K. Sivani,** *Professor, Dept. of ECIE* |
| 3 | **Sri Kota Kranthi Kumar** | **Dr. K. Ashoka Reddy,** *Principal, KITSW* |
| 4 | **B. Shashikanth** | **Dr. K. Sivani,** *Professor, Dept. of ECIE* |
| 5 | **B. Srilatha** | **Dr. K. Sivani,** *Professor, Dept. of ECIE* |

## Faculty contribution – Grants received

| Name of the Faculty | Grants recieved | | |
|---|---|---|---|
| Dr. K. Sivani | AICTE-MODROBS (completed) | Rs. 15.0 lakhs | Modernization & Automation of Process Control Laboratory |
| Dr. K. Sivani | AICTE- STTP (completed) | Rs. 3.0 lakhs | One week STTP On "VLSI Design: Bridging Concepts to Practice" |

## Faculty contribution – Course content development

| S. No. | Name of the Faculty | Area of specialization | Course content developed |
|---|---|---|---|
| 1 | Prof. M. Sreelatha | Signal Processing | AEC, DCLD |
| 2 | Dr. K. Sivani | VLSI Design | VLSI, MPSI, LICA, BMI |
| 3 | Dr. K. Venu Madhav | Biomedical Signal Processing | MCES, EDA, ESAP |
| 4 | Smt. R. Nirmala Devi | Signal Processing | DSP, AIML |
| 5 | Dr. O. Anjaneyulu | VLSI Design | EMTL, LVLSI |
| 6 | Dr. M. Raghu Ram | Biomedical Signal Processing | IPC, IOT, BMI, CC, IIA |
| 7 | Sri B. Shashikanth | Biomedical Signal Processing | EMS, SSP, DSP, EMI |
| 8 | Dr. B. Jeevan | VLSI Design | VLSI, LVLSI, MPSI |
| 9 | Dr. K. Srinivas | Biomedical Signal Processing | DCLD, CC |
| 10 | Sri B. Venu Maheswar | Biomedical Signal Processing | AE, AIML |
| 11 | Smt. B. Smitha | Biomedical Signal Processing | EMTL, DSP |
| 12 | Smt. K. Shailaja | Biomedical Signal Processing | AIML |
| 13 | Sri G. Raju | VLSI Design | LICA |
| 14 | Sri B. Krishna Sundeep | Biomedical Signal Processing | AIML |

# Criteria 6: Facilities and Technical Support

## ECIED - Infrastructure details

- Lecture Halls : 03
- Laboratories : 07
- Research Laboratory : 01
- Seminar Hall : 01
- HoD Room : 01
- Faculty Rooms : 07
- Department Library : 01
- Department Office : 01

| S. No. | Computational facility | Number |
|---|---|---|
| 1. | No. of Computers | **133** |
| 2. | No. of Printers | **08** |
| 3. | LCD Projectors | **05** |
| 4. | Scanner | **04** |
| 5. | Internet Bandwidth | **1.5Gbps** |

## Technical and Supporting staff details

| S. No. | Name | Qualification | Designation | Experience *(Years)* |
|---|---|---|---|---|
| **1** | Sri M. Soma Brahma Chary | MCA, PGDCA | *Programmer* | 22 |
| **2** | Smt. R. Sandhya Rani | M.Tech | *Lab Assistant* | 13 |
| **3** | Sri P. Suman | B.Tech | *Lab Assistant* | 08 |
| **4** | Smt. K. Deepa | B.Tech | *Lab Assistant* | 08 |
| **5** | Smt. V. Laxmi Devi | B.A, PGDCA | *Jr. Assistant* | 13 |
| **6** | Sri J. Rajkumar | SSC | *Attender* | 06 |

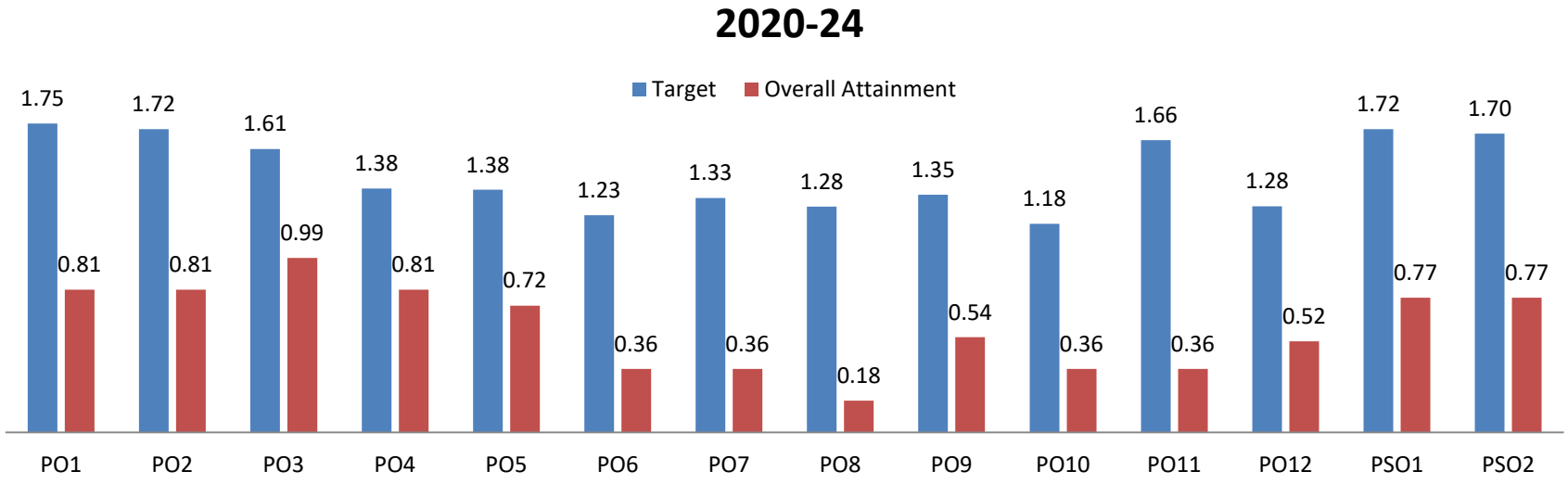
# ECIED - Laboratory Details

| S. No. | Name of Laboratory | Area *(Sq. Mts.)* | Cost *(Rs. Lakhs)* |
|---|---|---|---|
| 1 | Basic Electronics & Integrated Circuits Lab | 101.4 | 8.10 |
| 2 | Microprocessors & Microcontrollers Lab | 79.2 | 31.71 |
| 3 | Measurements & Instrumentation Lab | 150.9 | 12.21 |
| 4 | Industrial Process Control Lab | 79.2 | 29.22 |
| 5 | Electronics CAD Lab | 62.8 | 58.75 |
| 6 | IoT & DA Lab | 98.2 | 13.56 |
| 7 | Research Lab | 42.25 | 9.53 |
| 8 | Project Works Lab | 72.9 | 6.86 |
| | | | **Total Cost: Rs. 169.98Lakhs** |
| **Centre of Excellence (CoE) - "NI LabVIEW Academy"** | | | **Rs. 17.7 Lakhs** |

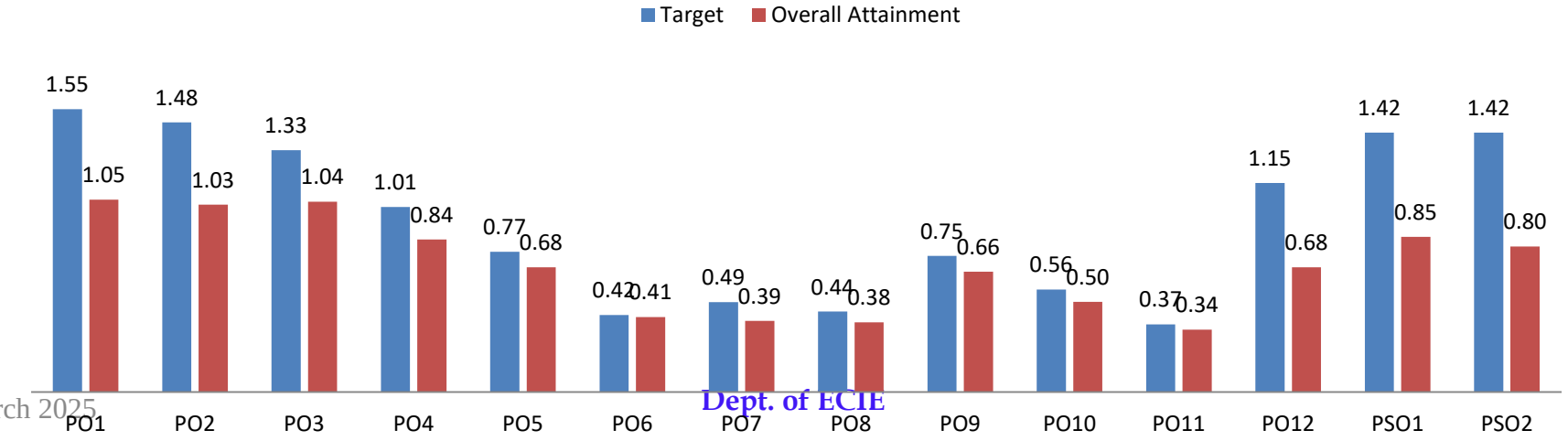
# CRITERIA-7 Continuous Improvement

## PO – PSO TARGET and ATTAINMENT

### 2020 – 24 Batch




### 2019 – 23 Batch



# PO Attainment Levels and Actions for improvement- 2019-23 batch

| POs | Target Level | Attainment Level | Observations |
|---|---|---|---|
| PO1: **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems. | | | |
| **PO1** | **1.55** | **1.05** | Observations<br>Few students felt difficulty in understanding the programming concepts in C language.<br>Students need more practice on problem solving with the help of mathematical logic/knowledge. |
| Action 1: Extra classes to be conducted to give thorough practice in problem solving and special assignments were given<br>Action 2: Additional classes to be arranged and extra programming examples are to be provided to the students for easy understanding of the programming concepts in C language. | | | |
| 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. | | | |
| **PO2** | **1.48** | **1.03** | Observations<br>Few students were not able to solve problems on fundamentals of the course Engineering Mathematics.<br>Students need more analytical capabilities in Signals & System and Electromagnetic theory. |
| Action 1: Tutorial classes need to be arranged along with additional assignment for better problemsolving skills on fundamentals of the course Engineering Mathematics<br>Action 2: Assignments / Tutorials / Remedial Classes are to be arranged for better understanding of the course which was not attained.ie. Signals & Systems and Electromagnetic theory | | | |

# PSO Attainment Levels and Actions for improvement- 2019-23 batch

| | | | |
|---|---|---|---|
| ***PSO1: apply the fundamentals of Electronics, Communication Signal processing, VLSI, Embedded Systems and Instrumentation in development of hardware and software prototypes and systems for complex engineering problems*** | | | |
| **PSO1** | **1.42** | **0.85** | Observations<br>Few students felt difficulty in solving problems in basic subjects of Electronics and Instrumentation Engineering.<br>Few students might felt difficulty in presenting their technical ideas with lack of knowledge in basic operation of electronic devices. |
| Action 1: Arranged visits to Instrumentation industries for better understanding of operation and control of processes<br>Action 2: Makeup/remedial classes are to be arranged to slow learners and Senior faculties to be drafted for wireless communication courses for simple understanding of the basic concepts<br>Action 3: Tutorial classes are to be arranged for better understanding the concepts | | | |
| **PSO2:** ***apply appropriate methodology, contemporary hardware and software tools to solve complex engineering problems related to embedded systems*** | | | |
| **PSO2** | **1.42** | **0.80** | Observations<br>Few students might felt difficulty in applying basics of IoT based concepts for understanding the advancement and emerging technologies<br>Few Students were not able to use the fundamental knowledge of Microcontroller & IoT based projects for real time applications.<br>Few students might feel difficult in adopting the new emerging technologies for innovations. |
| Action 1: Students to be encouraged to design new emerging technologies during their project work<br>Action 2: Makeup classes need to be arranged and NPTEL video/web course must be made available to students for the course Microcontroller & Embedded Systems<br>Action 3: Slow learners must be identified and to arrange makeup classes to improve their basics of wireless communication and antenna subject | | | |

# CRITERIA-7 Continuous Improvement

- **Software's added:**
  - *MATLABR2025a*– **Campus Wide Suite – Rs. 10.91 Lakhs**
  - *MICROWIND* – **Bundle of 36 users – Rs. 7.08 Lakhs**
- **Equipment added in Laboratories: Rs. 16.92 lakhs**
  - Added new Personnel Computers in MPMC lab (36 No.) - **Rs. 16.92 lakhs**
  - **Added new Personnel Computers in ECAD lab (36 No.) - Rs. 10.92 lakhs**
- **Faculty Improvement:**
  - ❖ No. of faculty with Ph.D.: **07**
  - ❖ No. of faculty submitted thesis: **01**
  - ❖ No. of faculty pursuing Ph.D.: **05**

| S. No. | Item | CAY: 2024-25 | CAYm1: 2023-24 | CAYm2: 2022-23 | CAYm3: 2021-22 | Total (CAY to CAYm3) |
|---|---|---|---|---|---|---|
| 1 | FDPS/Workshops/ NPTEL/MOOCs Attended | 03 (20- registered for NPTEL Jan - April 2025) | 22 | 22 | 25 | 72 |

## Faculty Publications/ Book chapters authored:

| S. No. | Item | CAY: 2024-25 | CAYm1: 2023-24 | CAYm2: 2022-23 | CAYm3: 2021-22 | Total (CAY to CAYm3) |
|---|---|---|---|---|---|---|
| 1 | **SCI Indexed Journals** | 03 | 01 | 08 | 03 | **15** |
| 2 | **Scopus Indexed Journals** | 05 | 01 | 05 | 01 | **12** |
| 3 | **International Conferences** | - | 03 | 03 | 06 | **12** |
| 4 | **Books / Book Chapters Authored** | - | - | - | - | **-** |

## Collaborations established:

- **MoUs signed** with Teckybot, Vizag and TechFLUENT Solutions Pvt. Ltd., Hyderabad
- **Centre of Excellence (CoE):** NI LabVIEW Academy in collaboration with NI, Bangalore
- **Indo-American Artificial Heart Project (IAAHP):** Project in collaboration with University of Pittsburg, USA

## Salient features in curriculum

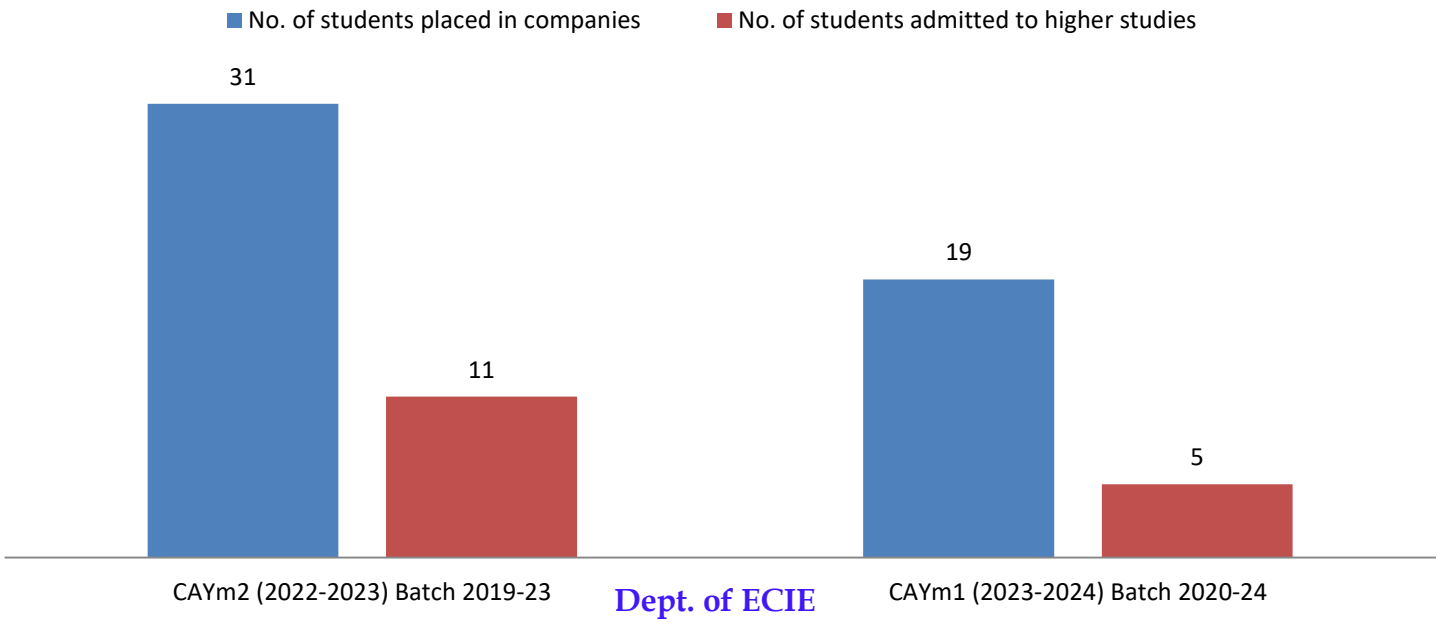
- **Choice base credit system**
- New courses addition and MOOCs courses
- **Introduction of SEA/SAA, ETS and Practicum activities**
- Outcome based education system with COAL & CDLL
- **Promoting $I^2RE$ culture among students**
- Honours/ Minor in Engg. curriculum
- **Induction Program and Mandatory Internships**
- Soft and interpersonal skills labs
- **Industry collaborated open elective courses**

# Improvement in Placement, Higher Studies and Entrepreneurship



| Item | Passout Batch 2021-25 | Passout Batch 2020-24 | Passout Batch 2019-23 |
|---|---|---|---|
| Total No. of Final Year Students (N) | 55 | 51 | 60 |
| No. of students placed in companies (or) Government Sector (x) | **12** | **20** | **32** |
| No. of students got admissions in premier institutions | **NA** | **06** | **11** |
| No. of students turned as entrepreneurs | **NA** | **-** | **-** |

## Placements and Higher Studies



# Improvement in Placement, Higher Studies and Entrepreneurship

CRITERIA-7

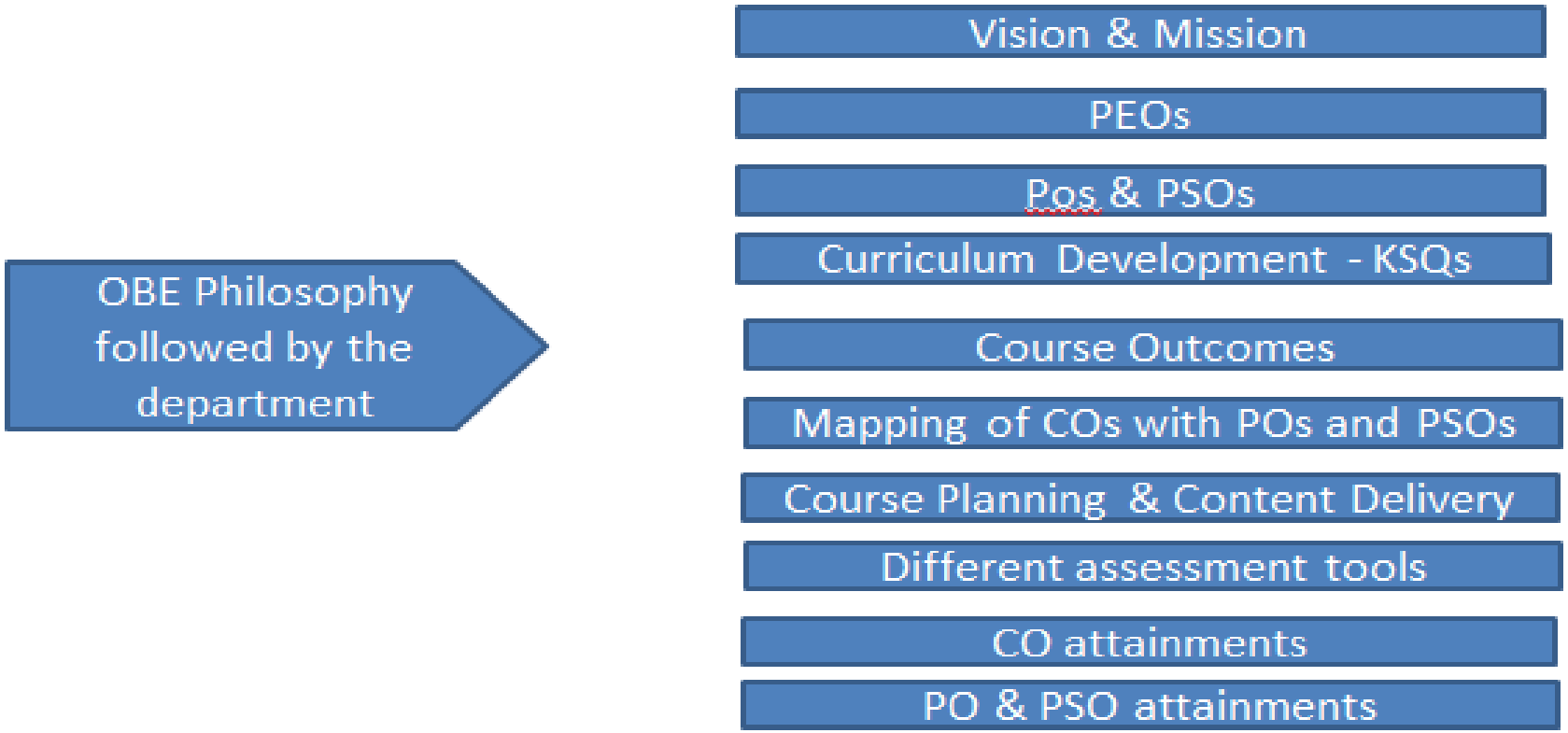
- Average CTC of the companies visiting for Placements is consistent throughout the assessment period
- Standard companies are visiting the institute for placements
- The quality of students placed in companies and government sector has been improved in the current academic year
- Students are perusing their MS in renowned abroad universities admitted through GRE-TOEFL, IELTS
- Students are pursuing their M.Tech./ME in reputed National institutes admitted through GATE examinations
- Students are pursuing their Master's in Business Management in reputed National level Institutes

## Improvement in the quality of students admitted to the program

| Item | | CAY (2024-25) | CAYm1 (2023-24) | CAYm2 (2022-23) |
|---|---|---|---|---|
| **State Level Entrance Examination (TS EAMCET)** | No. of Students admitted | **62** | **55** | **34** |
| | Opening Score/Rank | **49378** | **55661** | **39930** |
| | Closing Score/Rank | **178891** | **154979** | **125135** |
| **Name of the Entrance Examination for Lateral Entry or lateral entry details** | No. of Students admitted | **0** | **7** | **26** |
| | Opening Score/Rank | **-** | **630** | **460** |
| | Closing Score/Rank | **-** | **3950** | **3040** |
| **Average CBSE/Any other Board Result of admitted students (Physics, Chemistry & Mathematics)** | | **-** | **0** | **0** |

# OBE philosophy - Dept. of ECIE

- **Outcome Based Education (OBE) is student centric learning method**
- **The OBE approach is a continuous process of education wherein the curriculum, teaching and learning strategies, and assessment tools are improved continuously**



# OBE philosophy - Dept. of ECIE

## OBE: 4 Levels of Outcomes

- **Program Educational Objectives (PEOs)**
- Program Outcomes (POs)
- Program Specific Outcomes (PSOs)
- Course Outcomes (COs)

## Program Educational Objectives (PEOs)

- These statements describe the career and professional accomplishments of the graduates which can be achieved **in four to five years after completion of their graduation**.
- These are program specific.
- These are 3-4 in number for each program

# OBE philosophy - Dept. of ECIE

## PEOs of B.Tech. (ECI):

*The Undergraduates of Electronics Communication and Instrumentation Engineering will be able to…*

**PEO1: apply the knowledge of core courses of electronics communication and instrumentation engineering for development of effective and innovative solutions to engineering problems**

**PEO2: excel in profession, higher education and entrepreneurship with updated technologies in communication, signal processing, VLSI, embedded systems, and instrumentation domains**

**PEO3: exhibit professional ethics, effective communication, and teamwork in solving engineering problems by adapting contemporary research towards sustainable development of society activities**

# OBE philosophy - Dept. of ECIE

## Program Outcomes (POs):

- **NBA defined 12 POs**
- **POs**: Specifications of the abilities that a fresh engineering graduate must possess
- **POs** relate to **KNOWLEDGE, SKILLS and QUALITIES (KSQs)** that the student is expected to acquire through the programme
- The **first 5 POs are directly related to engineering skills** ( ***i.e., Domain dependent***) and are emphasized in curriculum and teaching-learning process

  PO1: Engineering knowledge

  PO2: Problem analysis

  PO3: Design/development of solutions

  PO4: Conduct investigations of complex problems

  PO5: Modern tool usage

- These **5 POs lay the foundation of engineering education,** and are **vital to engineering profession** and are of utmost importance

# OBE philosophy - Dept. of ECIE

## POs:

- The remaining **7 POs (PO6-PO12)** are primarily **non-engineering skills** *which aim at holistic development of the students*
  - ❖ *deal with the concern, soft skills, life skills, life-long learning and managerial skills*
  - ❖ *Should be addressed trough proper TLP*

PO6: The engineer and society

PO7: Environment and sustainability

PO8: Ethics

PO9: Individual and team work

PO10:Communication

PO11: Project management and finance

PO12: Life-long learning

URR24 Curriculum

- SEA-SAA activities
- Expert Talk Series
- Practicum

# OBE philosophy - Dept. of ECIE

## Program Specific Outcomes (PSOs):

- **Outcomes specific for the program**
- **Two-four** in number

## PSOs of B.Tech. (ECI):

*The Students of Electronics Communication and Instrumentation Engineering will be able to…*

**PSO1:** **apply the fundamentals of Electronics, Communication Signal processing, VLSI, Embedded Systems and Instrumentation** in development of hardware and software prototypes and systems for complex engineering problems

**PSO2:** **apply appropriate methodology, contemporary hardware and software tools** to solve complex engineering problems related to embedded systems

# OBE philosophy - Dept. of ECIE

Part -II

## Course Outcomes (COs):

- These statements indicate the **knowledge, skills and qualities (KSQs)** which the students are **expected to acquire and demonstrate after completion of** the course
- The content of each course is organised into four units
  - ✓ **One CO is defined for each unit**
  - ✓ **4 COs for each course** of the program
- All the COs are
  - ❖ **observable** and **measurable**
  - ❖ higher order cognitive level as per Bloom's Revised Taxonomy

**COs of B.Tech. (ECI) course U18CI704 INDUSTRIAL PROCESS CONTROL:**

| Course Outcome (CO) *After completion of this IPC course, students will be able to…..* | | Knowledge (K) | Skills (S) | Qualities (Q) |
|---|---|---|---|---|
| CO1 | **develop process models** for liquid level, thermal & pressure processes using transient mass/ energy balance equations | K1 | S1, S2, S3, S5 | Q1, Q2, Q3, Q4 |
| CO2 | **apply discontinuous & continuous controller modes of operation** for process control applications and analyze the servo & regulator responses of I order process with application of P/PI/PD/PID controller | K2 | S1, S2, S3, S5 | Q1, Q2, Q3, Q4 |
| CO3 | **estimate the controller tuning parameters** using one-quarter decay ratio, C-C & Z-N techniques and utilize pneumatic/ hydraulic/ electronic PID controller & pneumatic/ electric actuators for process control applications | K3 | S1, S2, S3, S5 | Q1, Q2, Q3, Q4 |
| CO4 | **utilize multiple loop/ advanced/ automated control configurations** (PLC, SCADA & DCS) for different process control applications | K4 | S3, S4, S5 | Q1, Q2, Q3, Q4 |

# OBE philosophy - Dept. of ECIE

## Course Articulation Matrix (CAM) - PO targets:

- Contribution of course in attaining POs
- Each **Course Outcome (CO) is mapped to Program Outcomes (POs) and Program Specific Outcomes (PSOs)** with relevant correlation levels *(3-High, 2-Medium, 1-Low, - for no correlation)*
- The mappings are justified
- The **average of mapping of four COs** with respective PO/PSO **gives the final CO-PO/PSO mapping** of that particular course
- **CAM of sample course**:

| Course Articulation Matrix (CAM): U18CI704 INDUSTRIAL PROCESS CONTROL | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CO | | PO 1 | PO 2 | PO3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO 10 | PO 11 | PO 12 | PSO 1 | PSO 2 |
| CO1 | U18CI704.1 | 2 | 2 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 |
| CO2 | U18CI704.2 | 2 | 2 | 1 | 1 | - | - | - | - | - | - | - | 1 | 2 | 1 |
| CO3 | U18CI704.3 | 1 | 1 | 1 | 1 | 1 | - | - | - | - | - | - | 2 | 2 | 2 |
| CO4 | U18CI704.4 | 1 | 1 | 1 | 1 | 1 | - | - | - | - | - | - | 2 | 2 | 2 |
| **U18CI704** | | **1.5** | **1.5** | **1** | **1** | **1** | **-** | **-** | **-** | **-** | **-** | **-** | **1.5** | **2** | **1.5** |

# Course Articulation Matrix (CAM) justification:

| COURSE ARTICULATION MATRIX (CAM): CO-PO JUSTIFICATION<br>U18CI704: INDUSTRIAL PROCESS CONTROL | | | |
|---|---|---|---|
| **COs** | **POs /PSOs** | **Justification for CO-PO mapping of Industrial Process Control (IPC) course** | **Level** |
| CO1 | **PO1** | Understand the process control system & process characteristics and derive the process transfer function of liquid level, thermal & pressure processes by applying the principles of science and engineering | **2** |
| | **PO2** | Identify the problems associated with liquid level, thermal & pressure processes | **2** |
| | **PO3** | Suggest solutions for complex problems and design system components or processes that meet the specified needs in the area of process control systems ensuring safety for cultural, societal, and environmental considerations | **1** |
| | **PO4** | 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 on transfer function of liquid level, thermal & pressure processes | **1** |
| | **PO12** | Apply the acquired knowledge of advanced area in design of process models to continue learning and stay up with latest technologies to manage projects | **1** |
| | **PSO1** | Ability for immediate professional practice as a process control & instrumentation engineer. | **2** |
| | **PSO2** | The contents of the course and the teaching learning process enables the student to investigate emerging technologies in process control to develops the culture of Innovation, Incubation, Research and Entrepreneurship (I2RE) in the student | **1** |

# OBE philosophy - Dept. of ECIE

## Course Articulation Matrix (CAM) justification:

| COURSE ARTICULATION MATRIX (CAM): CO-PO JUSTIFICATION<br>U18CI704: INDUSTRIAL PROCESS CONTROL | | | |
|---|---|---|---|
| **COs** | **POs /PSOs** | **Justification for CO-PO mapping of Industrial Process Control (IPC) course** | **Level** |
| CO2 | **PO1** | Understand the different types of controllers, their response, develop servo & regulator transfer functions and analyze the effect of continuous controllers on plotted closed loop responses of the process by applying the principles of science and engineering | **2** |
| | **PO2** | Analyse the different types of controllers, their response, develop servo & regulator transfer functions | **2** |
| | **PO3** | Suggest solutions for complex problems and design system components or processes that meet the specified needs in the area of process control systems ensuring safety for cultural, societal, and environmental considerations | **1** |
| | **PO4** | 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 on controllers, their response. | **1** |
| | **PO12** | Apply the acquired knowledge of advanced area in design of process models to continue learning and stay up with latest technologies to manage projects | **1** |
| | **PSO1** | Ability for immediate professional practice as a process control & instrumentation engineer | **2** |
| | **PSO2** | The contents of the course and the teaching learning process enables the student to investigate emerging technologies in process control to develops the culture of Innovation, Incubation, Research and Entrepreneurship (I2RE) in the student | **1** |

# OBE philosophy - Dept. of ECIE

## Course Articulation Matrix (CAM) justification:

| | | | |
|---|---|---|---|
| CO3 | **PO1** | Understand the procedural steps of controller tuning techniques and explain the working principle of different physical controllers & various types of actuators employed in process industry by applying the principles of science and engineering | **1** |
| | **PO2** | Identify the problems associated with controller tuning | **1** |
| | **PO3** | Suggest solutions for complex problems and design system components or processes that meet the specified needs in the area of process control systems ensuring safety for cultural, societal, and environmental considerations | **1** |
| | **PO4** | 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 on transfer function of liquid level, thermal & pressure processes | **1** |
| | **PO5** | Apply the knowledge on tuning of controllers, to the professional engineering practice. | **1** |
| | **PO12** | Apply the acquired knowledge of advanced area to continue learning and stay up with latest technologies to manage projects | **2** |
| | **PSO1** | Ability for immediate professional practice as a process control & instrumentation engineer. | **2** |
| | **PSO2** | The contents of the course and the teaching learning process enables the student to investigate emerging technologies in process control to develops the culture of Innovation, Incubation, Research and Entrepreneurship (I2RE) in the student | **2** |

# OBE philosophy - Dept. of ECIE

## Course Articulation Matrix (CAM) justification:

| | | | |
|---|---|---|---|
| CO4 | **PO1** | Understand the importance & applications of multiple loop & advanced control configurations, CCS, SCADA, PLC & DCS by applying the principles of science and engineering | **1** |
| | **PO2** | Identify the problems associated with *CCS, SCADA, PLC & DCS* | **1** |
| | **PO3** | Suggest solutions for complex problems and design system components or processes that meet the specified needs in the area of multiple and advanced loop control systems ensuring safety for cultural, societal, and environmental considerations | **1** |
| | **PO4** | 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 on multiple loop & advanced control configurations, CCS, SCADA, PLC & DCS | **1** |
| | **PO5** | Apply the knowledge on SCADA, PLC & DCS, to the professional engineering practice | **1** |
| | **PO12** | Apply the acquired knowledge of advanced area in *SCADA, PLC & DCS* to continue learning and stay up with latest technologies to manage projects | **2** |
| | **PSO1** | Ability for immediate professional practice as a process control & instrumentation engineer. | **2** |
| | **PSO2** | The contents of the course and the teaching learning process enables the student to investigate emerging technologies in process control to develops the culture of Innovation, Incubation, Research and Entrepreneurship (I2RE) in the student | **2** |

## Framing and Attainment of Course Outcomes

**Course Content Preparation Committee (CCPC) :** The CCPCs develop the course content for the course

- Collaborate with industry experts and Identify the industry relevant competencies, Knowledge, Skills and Qualities (KSQs) that are to be imparted through course teaching
- **Formulate** course outcomes (COs)
  - ✓ as per the identified KSQs , at appropriate cognitive domain learning levels (CDLLs)
  - ✓ Bloom's Revised Taxonomy
- **Prepare** industry relevant course content
- **Prepare** worksheets **Sample Course worksheet**
- **Develop** teaching-learning strategies targeting COs
- **Formulate** Course Articulation Matrix (CAM) with justification

# OBE implementation - Dept. of ECIE

## Teaching - Learning Process (TLP)

- **CourseWeb Portal**
  - ❖ *Faculty updates the CourseWeb portal with all essential components of TLP*
  - ❖ *Students are given access to CourseWeb portal*
- **Essential components of TLP**
  - ❖ *Course introduction video (CIV)*
  - ❖ *Outcome based lecture schedule(OBLS)*
  - ❖ *Class discussion topics(CDTs)*
  - ❖ *Self learning topics(SLTs)*
  - ❖ *Lecture level practice questions/problems (LLQs/LLPs)* based on class wise teaching
  - ❖ *Tutorial sheets*
  - ❖ *Programming assignments*: Assignments to improve coding skills

## Teaching - Learning Process (TLP)

- **Essential components of TLP** *contd*…
  - ❖ ***Special Assignments***
    - Course Research Papers (CRPs) – summarizing CRPs related to course
    - Course Patents (CPs) - summarizing CPs related to course
  - ❖ ***Course Projects***
  - ❖ **Table of Specifications (ToS)**
    - Question paper Mapping COs and Cognitive domain learning level
    - Assessment templates
    - Assessments - Assignments, Minor exams, Mid semester exams, End semester exams
    - **ToS for sample course**

# OBE implementation - Dept. of ECIE

Part -II

## TLP for imparting generic competencies

| S.No. | Skills | TLP activity | Related PO |
|---|---|---|---|
| 1. | Communication; Life long learning | ✓Summarizing research papers and patents<br>✓Self learning topics<br>✓Classroom discussions | PO10, PO12 |
| 2. | Academic Integrity and honesty | ✓ Plagiarism check for academic projects, seminars and special assignments | PO8 |
| 3. | Ability to work independently | ✓ Self learning topics<br>✓ Plagiarism check of seminar reports, mini projects & major projects<br>✓ special assignments (to be implemented from next sem) | PO9 |

KSQ table for a sample course

# OBE implementation - Dept. of ECIE

Part -II

## Assessment Tools – URR18 - R22

| CO \ Assessment Tool | Continuous Internal Evaluation | | | | End Semester Exam |
|---|---|---|---|---|---|
| | MINOR-I | MINOR-II | MSE-I | MSE-II | ESE |
| **Maximum marks** | 10 | 10 | 30 | 30 | 60 |
| **CO1** | √ | | √ | | √ |
| **CO2** | | | √ | | √ |
| **CO3** | | √ | | √ | √ |
| **CO4** | | | | √ | √ |
| **Grading** | Average of Minor-I, Minor-II, | | 70% of highest marks + 30% of lowest marks | | 100% of ESE |
| **Marks Weightage** | 10 | | 30 | | 60 |
| **Weightage** | 40% | | | | 60% |

# OBE implementation - Dept. of ECIE

## CO Attainment level

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

## PO/PSO Attainment Level

$$Direct\ PO/PSO\ attainment = \frac{\sum(^{CO\ attainment * PO/PSO\ target}/_{3})}{True\ number\ of\ courses\ mapped}$$

$$Indirect\ PO/PSO\ attainment = Average\ (Graduate\ Exit\ survey, Alumni\ survey)$$

Course contribution in PO Attainment

## PEO Attainment Level

$$PEO\ target = True\ average\ of\ PO\ mappings\ of\ that\ particular\ PEO$$

$$PEO\ attainment = \frac{\sum(^{PO\ attainment * PEO\ target}/_{3})}{12}$$

# OBE implementation - Dept. of ECIE

Part -II

## ESE OBE report – COAL & CDAL

Sample: U14EI802 Biomedical Signal Processing

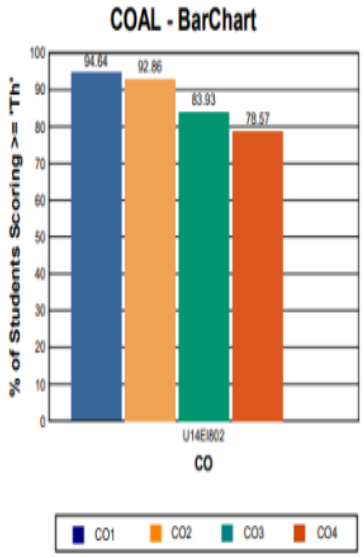
ABSTRACT ON COURSE OUTCOME ATTAINMENT LEVEL

EIE B.TECH. VIII SEMESTER 2017 - 2018 U14EI802 BIO-MEDICAL SIGNAL PROCESSING

| Course Name | Faculty Name | Type Of Exam | Date of Exam | Academic Year & Sem |
|---|---|---|---|---|
| BMSP | | ESE | | 2020 - 2021 VIII SEMESTER |

| Total Number Of Students | 56 | | | |
|---|---|---|---|---|
| Course Outcome | CO1 | CO2 | CO3 | CO4 |
| Max Marks | 15.00 | 15.00 | 15.00 | 15.00 |
| Threshold('Th')('Th'=50% of Maximum Marks) | 7.50 | 7.50 | 7.50 | 7.50 |
| No of Students Scoring >= 'Th' | 53 | 52 | 47 | 44 |
| % of Students Scoring >= 'Th' | 94.64 | 92.86 | 83.93 | 78.57 |
| Course Outcome Attainment Level(COAL) | 3 | 3 | 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' |



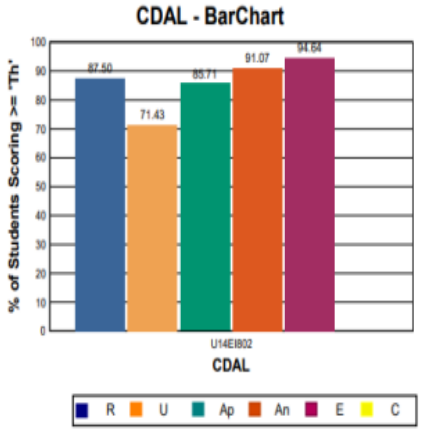

ABSTRACT ON COGNITIVE DOMAIN ATTAINMENT LEVEL

EIE B.TECH. VIII SEMESTER 2017 - 2018 U14EI802 BIO-MEDICAL SIGNAL PROCESSING

| Course Name | Faculty Name | Type of Exam | Date of Exam | Academic Year & Sem |
|---|---|---|---|---|
| BMSP | | ESE | | 2020 - 2021 VIII SEMESTER |

| Total Number Of Students | 56 | | | | | |
|---|---|---|---|---|---|---|
| Cognitive Domain Learning Level (CDLL | R | U | Ap | An | E | C |
| Max Marks | 6.00 | 18.00 | 18.00 | 12.00 | 6.00 | -- |
| Threshold('Th')('Th'=50% of Maximum Marks) | 3.00 | 9.00 | 9.00 | 6.00 | 3.00 | -- |
| No of Students Scoring >= 'Th' | 49 | 40 | 48 | 51 | 53 | |
| % of Students Scoring >= 'Th' | 87.50 | 71.43 | 85.71 | 91.07 | 94.64 | |
| Cognitive Domain Attainment Level (CDLL) | 3 | 2 | 3 | 3 | 3 | -- |

| | |
|---|---|
| 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' |



# OBE implementation - Dept. of ECIE

Part -II

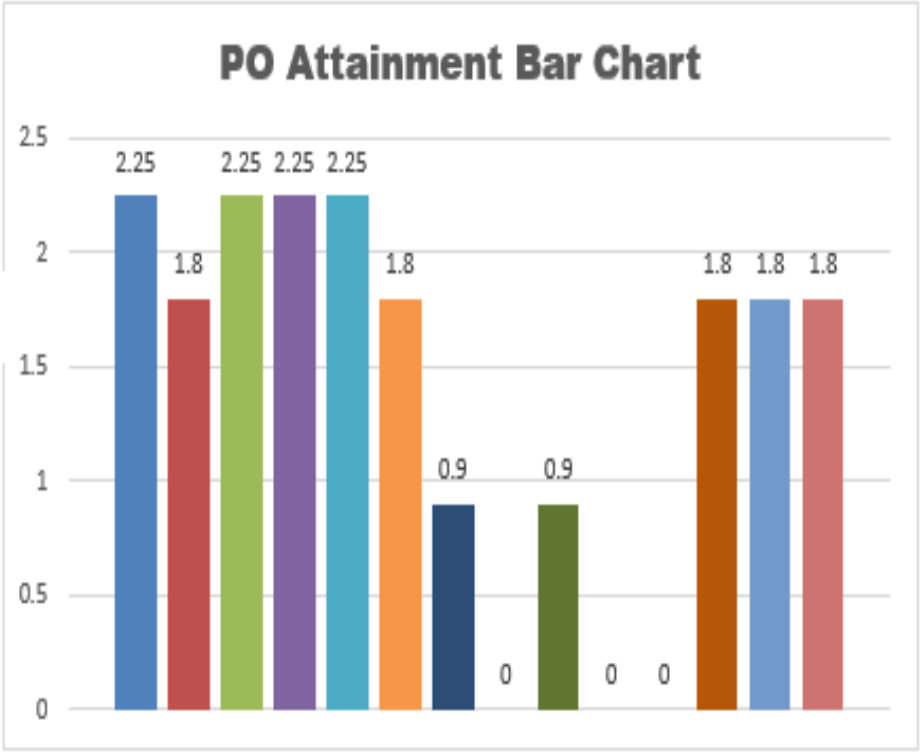
## POAL – Sample: U14EI802 Biomedical Signal Processing

| Po attainment calculation for the course U14EI802 Bio-Medical Signal Processing | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Course articulation matrix for U14EI802 | | | | | | | | | | | | | | |
| CO/PO | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| Co1 | 2 | 2 | 3 | 2 | 3 | 2 | 1 | - | 1 | - | - | 2 | 2 | 2 |
| Co2 | 3 | 2 | 2 | 3 | 2 | 2 | 1 | - | 1 | - | - | 2 | 2 | 2 |
| Co3 | 3 | 2 | 3 | 2 | 3 | 2 | 1 | - | 1 | - | - | 2 | 2 | 2 |
| Co4 | 2 | 2 | 2 | 3 | 2 | 2 | 1 | - | 1 | - | - | 2 | 2 | 2 |
| Avg. | 2.5 | 2 | 2.5 | 2.5 | 2.5 | 2 | 1 | | 1 | | | 2 | 2 | 2 |

| PO Attainment for U14EI403 Signals and Systems Course | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 |
| PO Target | 2.5 | 2 | 2.5 | 2.5 | 2.5 | 2 | 1 | 0 | 1 | 0 | 0 | 2 | 2 | 2 |
| PO Attained (Direct) | 2.25 | 1.80 | 2.25 | 2.25 | 2.25 | 1.80 | 0.90 | 0.00 | 0.90 | 0.00 | 0.00 | 1.80 | 1.80 | 1.80 |

**POAL =(Target PO level)* (CO attainment/3)**

Overall CO attainment for the course U14EI802 Bio-Medical Signal Processing : 2.7
PO Attainment = (Target PO level) * (CO attainment/3) = 3*(1.20) /3=1.2



# Budget - Dept. of ECIE

| S. No. | Financial Year | Budget | Non-Recurring: Laboratory Equipment & Software (in Rupees) | Recurring: Consumables, Maintenance, etc., (in Rupees) | Research & Development | Total (in Rupees) |
|---|---|---|---|---|---|---|
| 1. | 2025-26 | Estimated | 1,14,65,000.00 | 17,26,000.00 | 10,000,00.00 | 1,41,91,000.00 |
| 2. | CFY: 2024-25 | Estimated | 39,91,000.00 | 18,02000.00 | 10,000,00.00 | 67,93,000.00 |
| | | Allocated | 26,65,480.00 | 2,80,00=00 | 3,50,000.00 | 32,95,480.00 |
| | | Actuals | 34,73,600.00 | 2,78,400.00 | 41,000.00 | 37,93,000.00 |
| 3. | CFYm1: 2023-24 | Estimated | 66,03,000.00 | 21,78,500.00 | 10,000,00.00 | 97,81,500.00 |
| | | Allocated | 15,79,700.00 | 2,40,000.00 | 5,00,000.00 | 23,19,700.00 |
| | | Actuals | 5,21,700.00 | 85,500.00 | 84,300.00 | 69,15,000.00 |
| 4. | CFYm2: 2022-23 | Estimated | 74,32,000.00 | 14,18,600.00 | 0 | 88,50,600.00 |
| | | Allocated | 15,55,180.00 | 2,85,750.00 | 2,10,000.00 | 20,50,930.00 |
| | | Actuals | 2,87,100.00 | 3,62,800.00 | 0 | 6,49,900.00 |
| 5. | CFYm3: 2021-22 | Estimated | 8,99,400.00 | 7,77,700.00 | 6,000,00.00 | 22,77,100.00 |
| | | Allocated | 14,00,000.00 | 3,15,750.00 | 2,25,000.00 | 19,40,750.00 |
| | | Actuals | - | 2.33420.00 | 0 | 2,33,420.00 |

# Budget - Dept. of ECIE

| Item | Budget proposals submitted for 2025-26 (Rs.) | Budgeted in CFY 2024-25 (Rs.) | Actual Expenses in CFY 2024-25 till date (Rs.) | Budgeted in CFY*m*1 2023-24 (Rs.) | Actual Expenses in CFY*m*1 2023-24 (Rs.) | Budgeted in CFY*m*2 2022-23 (Rs.) | Actual Expenses in CFY*m*2 2022-23 (Rs.) | Budgeted in CFY*m*2 2021-22 (Rs.) | Actual Expenses in CFY*m*2 2021-22 (Rs.) |
|---|---|---|---|---|---|---|---|---|---|
| Laboratory equipment | 93,45,000.00 | 26,65,480.00 | 26,92,000.00 | 15,79,700.00 | 3,37,200.00 | 15,55,180.00 | 1,89,500.00 | 14,00,000.00 | 0 |
| Software | 1,77,000.00 | | 7,81,600.00 | 90,000.00 | 1,48,500.00 | 90,000.00 | 97,400.00 | | 0 |
| Laboratory consumables | 4,82,000.00 | 2,80,000.00 | 0 | 70,000.00 | 17000.00 | 1,10,000.00 | 1,15,700.00 | 50,000.00 | 62,400.00 |
| Maintenance and spares | 4,94,000.00 | | 1,21,600.00 | 85,000.00 | 50,000.00 | 85,000.00 | 1,22,300.00 | 2,65,750.00 | 1,71,100.00 |
| Miscellaneous expenses * | 2,50,000.00 | | 1,56,860.00 | | 18,500.00 | | 1,24,800.00 | | |
| Training and Travel | 1,00,000.00 | | 0 | | 0 | | 10,000.00 | | |
| R&D | 10,00,000.00 | 3,50,000.00 | 41,000.00 | 5,00,000.00 | 84,300.00 | 2,10,000.00 | 0 | 2,25,000.00 | 0 |
| Total (Rs.) | 1,18,48,000.00 | 32,95,480.00 | 37,93,000.00 | 23,24,700.00 | 6,55,500.00 | 20,50,180.00 | 6,59,700.00 | 19,40,750.00 | 2,33,422.00 |

# ECIED - Best Practices

- Intensive **student counseling** system
- **CourseWeb facility** to inculcate $I^2RE$ culture among students
- Students are encouraged to complete **certification courses** offered by NPTEL/Udemy/Linked In/CoEs-KITSW/any other professional organization
- Regular **industrial visits** are arranged
- Students are encouraged to take up **Major/ Mini projects related to social concern**
- Frequent **alumni interactions and expert lectures** are arranged
- **College Management System (CMS)** to monitor student attendance and performance
- **Anti-plagarism policy** to inculcate ethics among students to write quality reports
- ***Department News Letter and Magazine are published biannually***
- **Additional measures** to improve the performance of weak learners and to support advanced learners

## Short Term Goals

- To **collaborate with premier educational institutes** like IITs, NITs and **industries** for **Academia/ Industry Internships**
- To **increase number** of **core placements**

## Long Term Goals

- To **strengthen research activity** in the areas of faculty expertise
- To **collaborate with IITs, NITs & industries** and **aim at funded research** and **consultancy**

## Strengths

- ✓ **Committed & Experienced Faculty** with Research Orientation
- ✓ Dedicated Technical & Supporting Staff
- ✓ **Well Equipped Laboratories**
- ✓ CoE - NI LabVIEW Academy
- ✓ **Strong Alumni support**
- ✓ Research Centre

## Weaknesses

- ➢ Students with **poor academic background** and with **lack of communication skills**

## Opportunities

- ❖ Students have **opportunities in core sector** related to *Embedded systems, VLSI, Signal processing, Industrial automation etc.,*

## Challenges

- ❑ **Placements & Higher Education** are two major challenges faced by department

# ECIED - Prominent EIE Alumni

| S. No. | Name of the Alumnus | Present Status |
|---|---|---|
| 1. | Sri A. Ashutosh, 1985 | Global Director Solution Sales, Google & Founder, President and CEO, Actifio, USA |
| 2. | Prof. V. Ramgopal Rao, 1986 | Former Director-IIT Delhi & Group Vice-Chancellor, BITS Pilani Campuses |
| 3. | Dr. T. K. Sai, 1986 | Former Addl. G. M, NTPC Limted, Ramagundam |
| 4. | Sri E. Raja Rathnam, 1987 | Founder Director RVJ Techno solutions, Hyderabad |
| 5. | Sri V. Nagabhaskar, 1987 | General Manager at Dept of Atomic Energy |
| 6. | Sri A. Chandrasekhar, 1989 | Operations Manager, Oil, Gas & Chemicals at ABB Global Industries and Service Pvt. Ltd, Bangalore |
| 7. | Sri R. Venu Madhav, 1989 | Program Manager, Emerson Automation Solutions, Texas, USA |
| 8. | Sri G. Srinivas Reddy1990 | Sr. Director, ECI Telecom India Pvt. Ltd, Bangalore |
| 9. | Sri G. Raja Rao, 1991 | General Manager , Vasavadatta Cement, Karnataka |
| 10. | Sri G. Rajashekar, 1991 | Senior Manager, Indian Oil Corporations Ltd, Panipat, Haryana |
| 11. | Sri T. Srinivas, 1992 | CEO, Sumith Electronics, Hyderabad |
| 12. | Sri G. D. Vasu, 1992 | Chief Manager (Instrumentation), GAIL Pvt. Ltd. |
| 13. | Sri B. Dayanand, 1997 | Expert Technologist, Hewlett Packard Enterprise, Bangalore |
| 14. | Dr. Y. Jaganmohan Reddy, 1997 | Principal Engineer, Air Company, USA |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काकतीय प्रैद्योगिकी 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 Communication and Instrumentation Engineering

# Thank you