KUMARAGURU
Institutions

MONTHLY MAGAZINE
February'24

BY ASSOCIATION OF ECE

DEPARTMENT OF ECE

VISION

To be a centre of repute for learning and research with internationally accredited curriculum, state-of-the-art infrastructure and laboratories to enable the students to succeed in globally competitive environments in academics and industry.

MISSION

The Department is committed to:

- Motivate students to develop professional ethics, self confidence and leadership quality.
- Facilitate the students to acquire knowledge and skills innovatively to meet evolving global challenges and societal needs.
- Achieve excellence in academics, core engineering and research.

PROGRAMME SPECIFIC OUTCOMES (PSOs)

Graduates of the Electronics and Communication Engineering Programme will have the ability to:

PSO1: Analyze and Design, verify and validate VLSI Systems by selecting appropriate hardware and software tools.

PSO2: Design, develop and validate inter disciplinary products/ process by applying the knowledge and skills of Embedded Systems, Signal Processing, Electromagnetics and Communication Engineering.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Programme Educational Objectives of Electronics and Communication Engineering
Undergraduate Programme are:

PEO1: Graduates will be successful as Professionals, Researchers or Entrepreneurs in Electronics, Information and Communication Engineering disciplines.

PEO2: Graduates will continuously be updated with the state-of the art technology through formal and informal education to provide sustainable solutions.

PEO3: Graduates will demonstrate ethical and social responsibilities as an individual and in a team of diverse culture.

PROGRAMME OUTCOMES (POs)

PO1: The graduates would be able to apply the knowledge of mathematics, sciences, engineering fundamentals and skills to solve problems in electronics and communication.

PO2: The graduates would acquire skills to analyse complex problems in the domain of electronics and communication engineering.

PO3: The graduates would be able to design, develop and validate solutions for electronics and communication systems meeting the specifications vis-à-vis the society.

PO4: The graduates will have proficiency to acquire, analyse data and interpret results leading to relevant research.

PO5: The graduates would be able to use appropriate modern engineering/simulation tools including modelling and forecasting for complex technological entities.

PO6: The graduates would have awareness of and the need to uphold professional responsibilities and also be aware of health, safety, social and legal aspects of their work.

PO7: The graduates would have an understanding of the societal and human context in which their engineering contributions will provide sustainable development.

PO8: The graduates would carry out professional responsibilities adhering to ethical and standard norms of engineering practices.

PO9: The graduates would have ability to function effectively as an individual and as a member or leader in diverse teams and in multi-disciplinary environment.

PO10: The graduates would be capable of communicating effectively with the engineering community and society at large.

PO11: The graduates would demonstrate knowledge and understanding of engineering and management principles for technological and socially relevant projects.

PO12: The graduates would recognize the need for and also have ability to engage in continual, life-long learning.

CIRCUIT CRAFT - F 40 SESSION
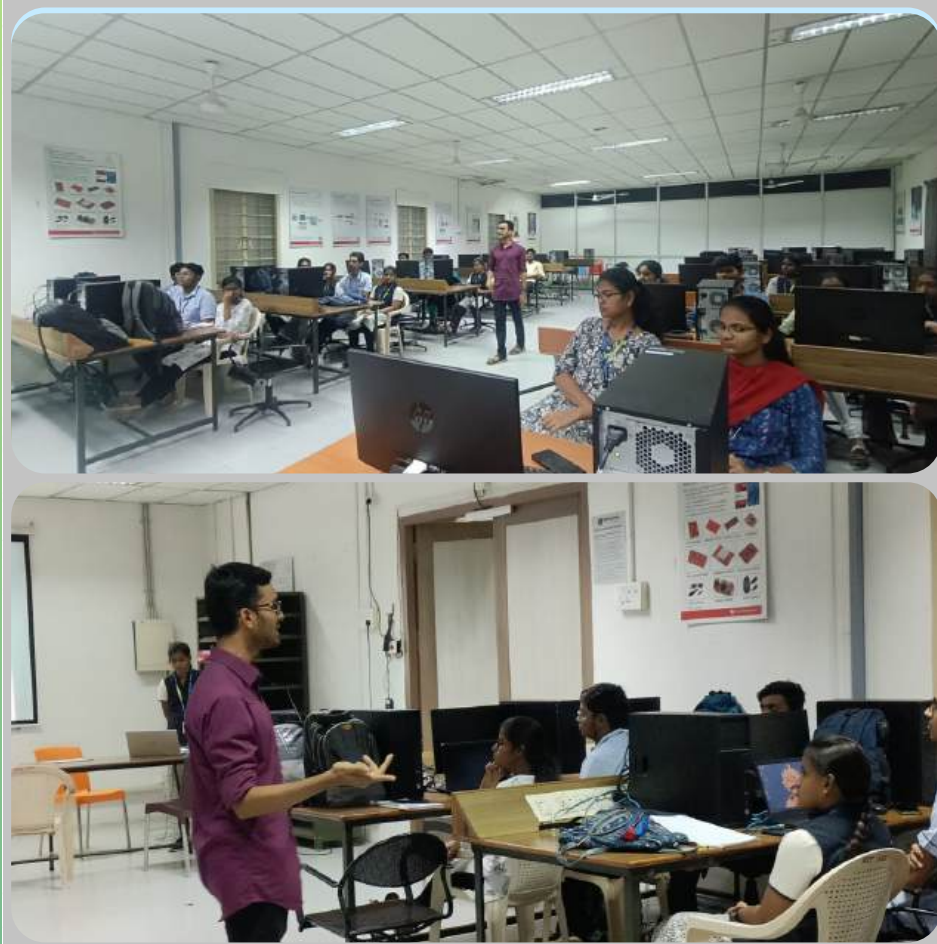
DESCRIPTION:

The session on embedded systems and electronics provides a comprehensive overview and practical insights into these vital technological domains. Participants gain a deep understanding of fundamental concepts, applications, and advancements, including microcontrollers, sensors, actuators, circuit design, and signal processing. The session fosters collaboration, networking, and skill development among attendees, empowering them to tackle real-world challenges and contribute to cutting-edge innovations in embedded systems and electronic devices.

Resource Person:

PAVIN PS

Final year, Electronics and Instrumentation Engineering

ORGANIZED BY :

Hariprasanna A K -20BEC035
Janani J – 21BEC052

EVENT MODE: Offline
DATE : 2nd February 2024
TIME :2.00 P.M to 4.00 P.M
VENUE : C Block, COE lab

ML MASTERS- F40 SESSION

DESCRIPTION:

The session on machine learning offers participants a focused exploration of this dynamic field, aiming to impart a comprehensive understanding of its core principles, methodologies, and practical applications. Attendees gain insight into fundamental concepts such as supervised, unsupervised, and reinforcement learning, alongside exposure to key algorithms and techniques. Through real-world case studies spanning diverse industries, participants are inspired to envision innovative solutions and applications.

ORGANIZED BY :

Hariprasanna A K -20BEC035
Janani J – 21BEC052

EVENT MODE ; Offline
DATE   : 16th February,2024
TIME   : 1.30 P.M to 3.30 P.M
VENUE : C 208, First floor,
         C Block

Resource Person:

Parameswaran - 20BEC098
Final Year - Department of EE

SPARKSPRINTS-F 40 SESSION

DESCRIPTION:

The session on core training and electronics basics offers participants a comprehensive introduction to essential concepts in electronics. Through a combination of interactive lectures, hands-on activities, and practical demonstrations, attendees gain a solid foundational understanding of circuit analysis, component identification, and basic electrical theories.

ORGANIZED BY :

Hariprasanna A K -20BEC035
Janani J – 21BEC052

EVENT MODE: Offline
DATE   : 22nd February 2024
TIME   : 5.00 P.M to 6.00 P.M
VENUE   : C 208,First floor
               C Block

Resource Person:

Premkumar.M
Final Year Electronics and Communication Engineering

CAREER PATH - F 40 SESSION

DESCRIPTION:

The session on Soliton recruitment, led by Sathika, a Project Engineer at Soliton, provided invaluable insights into securing placement within the company. Sathika's firsthand experience offered attendees a unique perspective on the recruitment process, ensuring that participants gained practical knowledge and guidance. Throughout the event, key aspects such as Soliton's hiring criteria, preferred skill sets, and the application process were thoroughly discussed. Attendees were equipped with actionable strategies, including resume enhancement tips, interview preparation techniques, and networking advice tailored specifically for Soliton. Sathika's expertise and engaging delivery fostered an environment conducive to learning and empowerment, inspiring attendees to proactively pursue opportunities within Soliton.

ORGANIZED BY :

Hariprasanna A K -20BEC035
Janani J – 21BEC052

EVENT MODE : Online - MS Teams
DATE : 29th February 2024
TIME : 5.30 PM to 7.00 PM

Resource Person:

SATHIKA J
Project Engineer , Soliton Technologies

SIGVISTA

DESCRIPTION:

The technical event focused on signal processing using MATLAB offers students a comprehensive platform to delve into the intricate world of digital signal analysis and manipulation. Through a series of workshops, demonstrations, and hands-on sessions, participants gain practical experience and theoretical insights into various signal processing techniques. From fundamental concepts like filtering and spectral analysis to advanced algorithms and applications, students are equipped with the skills necessary to tackle real-world challenges in the field.

ORGANIZED BY :

Janani J – 21BEC052

EVENT MODE: Offline
DATE   : 27th February 2024
TIME   : 5.00 P.M to 6.30 P.M
VENUE : C 208, First floor
              C Block

AUTOMATION IN INDUSTRIES

DESCRIPTION:

This session was focused on the automation innovations that has evolved over years and automation being developed in current. The outcome is considered in developing the all possible skills that is required in automation industry for future requirements.

ORGANIZED BY :

Rupan R -22BEC132
Swathika S- 22BEC180

EVENT MODE: Offline
DATE   : 28th February 2024
TIME   : 5.00 P.M to 6.30 P.M
**VENUE** : C 208, First floor
 C Block

Resource Person:

THARUN RAJ G-Vice president of ECE
Final year, ECE

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BIOMEDICAL SIGNAL PROCESSING

INTRODUCTION

Biomedical signal processing involves acquiring and preprocessing physiological signals and extracting meaningful information to identify patterns and trends within the signals. Sources of biomedical signals include neural activity, cardiac rhythm, muscle movement, and other physiological activities.
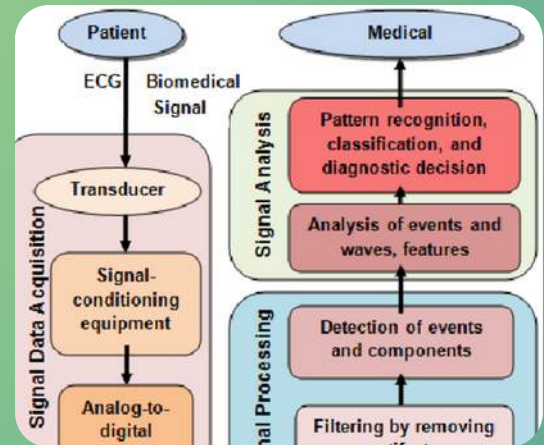
WORKING

A variety of techniques are available for the enhancement of the relevant information in the signal. Noise attenuating and cancelling techniques or signal enhancement methods are required when the signal has been corrupted with additive and multiplicative noise or in cases where the desired information constitutes only a part of the signal such that irrelevant portions are considered as artifact. Examples of the enhancement methods (also known as signal estimation methods) developed to increase the signal

APPLICATIONS

- **Electrocardiography (ECG):** Analyzing electrical activity of the heart to diagnose heart conditions such as arrhythmias, myocardial infarction, and heart failure.
- **Electroencephalography (EEG):** Monitoring brain activity to diagnose neurological disorders such as epilepsy, sleep disorders, and brain tumors.
- **Electromyography (EMG):** Recording and analyzing electrical activity produced by skeletal muscles to diagnose neuromuscular disorders and monitor rehabilitation progress.
- **Medical Imaging:** Processing and analyzing medical images obtained from modalities such as X-ray, MRI, CT scan, and ultrasound to assist in diagnosis and treatment planning for conditions ranging from fractures to tumors.
- **Biomechanics:** Analyzing movement patterns and forces acting on the body to assess gait abnormalities, evaluate prosthetic devices, and optimize sports performance.

Automatic Noise Level Monitor & Warning System

INTRODUCTION

Noise pollution is another major form of pollution that is often neglected. Noise pollution however affects over a million people on an every day basis. The most common health issues occurring because of noise pollution include Hearing loss, high blood pressure, Heart diseases, sleep problems, stress, headaches and more. The problem with controlling noise pollution is first detecting I and then trying to silence the noise source each time.
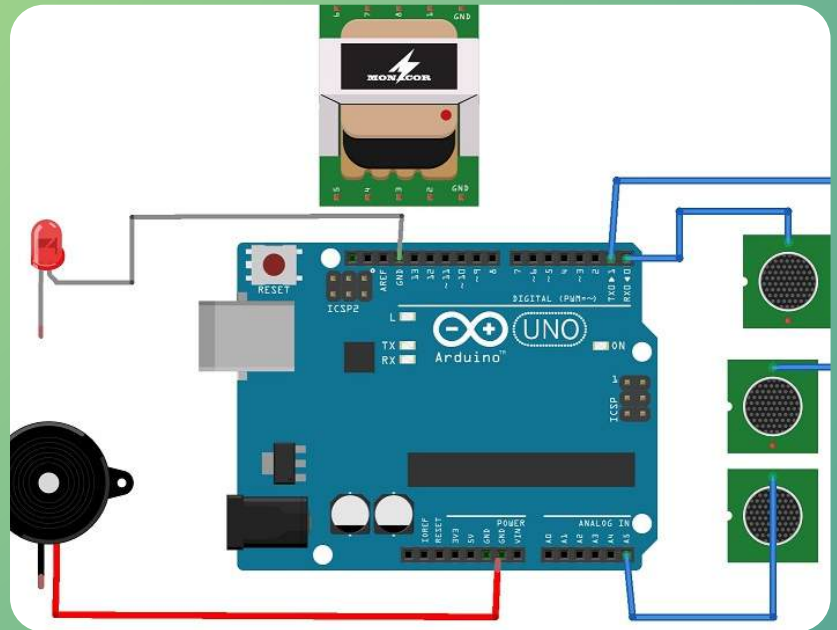
Working of the Project

The system makes use of a set of microphones to accurately measure noise levels in 3 directions. We here use an Arduino based controller to develop this system. The arduino processes noise levels from all microphone sensors constantly.The user may use the display and buttons on the device to set the max allowed noise levels for the area. The system status is green as long as noise levels are below set mark. As soon as noise levels cross the set level the system sounds a buzzer alert and waits for noise level to go down. If noise level dosent go down system again sounds an alert and displays a message indicating the noise level is too high. As soon as the people realize noise is high and maintain silence the system again goes back to green mode. Thus the system allows for a smart automatic noise pollution controller system.

Components Required:

Hardware Specifications
Arduino Uno
Microphone Sensors
LED Indicators
Buzzer
LCD Display
Power Port & DC power Adapter
Resistors Capacitors
Diodes & transistors
Buttons & Switches
PCB Board
Software: Embedded C

COMPLETE THE ABOVE MENTIONED MINI PROJECT AND SUBMIT THE PROOF TO WIN EXCITING PRIZE

QUESTION 1

Mr. Jones sold two pipes at $1.20 each. Based on the cost, his profit one was 20% and his loss on the other was 20%. On the sale of the pipes, he:

(a) broke even
(b) lost 4 cents
(c) gained 4 cents
d) lost 10 cents

ANSWER: D

QUESTION 2

The sum of three numbers is 98. The ratio of the first to the second is 2/3, and the ratio of the second to the third is 5/8. The second number is:

(a) 15
(b) 20
(c) 30
(d) 32
(e) 33

ANSWER: C

QUESTION 3

What is the difference in the place value of 5 in the numeral 754853?

(a) 49500
(b) 49950
(c) 45000
(d) 49940

Answer: B

QUESTION 4

Two ships are sailing in the sea on the two sides of a lighthouse. The angles of elevation of the top of the lighthouse observed from the ships are 30° and 45° respectively. If the lighthouse is 100m high, find the distance between the two ships.

(a) 155.80 m
(b) 157.80 m
(c) 159. 80 m
(d) 161.80 m

Answer: B

QUESTION 5

Average age of a group of 30 boys is 16 years. A boy of age 19 leaves the group and a new boy joins the group. If the new average age of the group is 15.8 years, find the age of the new boy.

(a) 12 years
(b) 13 years
(c) 14 years
(d) 15 years

Answer: B

EDITORS:

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