KUMARAGURU Institutions

DEPARTMENT ASSOCIATION

MONTHLY MAGAZINE
NOVEMBER'23

PREPARED BY
ASSOCIATION OF ECE

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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.

THIRAN ARITHAL

DESCRIPTION:

An event to unlock the hidden potential of the students to celebrate their accomplishments as ours and fostering a culture of support and recognition.

EVENT ORGANISER:
HARIPRASANNA A K - 20BEC035

RESOURCE PERSON:
Mr. VIGNESH S R
ABLE Club staff incharge
OSA Executive.

TIME: 2:00 pm
VENUE: Swamy Vivekananda Hall.
DATE: 01th November 2023

BUG BYTE LEAGUE

DESCRIPTION:

Imagine an exhilarating event blending riddles and coding challenges. Participants crack interconnected puzzles by applying their coding prowess—solving anything from algorithmic brain-teasers to debugging tasks. These challenges span a spectrum, testing diverse coding skills.

EVENT ORGANISER:

HARIPRASANNA A K - 20BEC035

TIME: 2:30 - 4:30PM

VENUE: C-block

DATE: 3rd November 2023

THE ART OF ARGUMENT

DESCRIPTION:

This debate consists of two rounds. In the first round , Participants have five minutes to debate on the given topic. The winner will proceed to the next round as a team, and the final winning team will be awarded as the most articulate speaker.




EVENT ORGANISER:

SUJAN S - 22BEC173
TAWFIQ LUQMAN F - 22BEC187

TIME: 5.00 - 6.00 PM
VENUE: C-208 , ECE Block(1st Floor)
DATE: 3rd November 2023

BRAINBLITZ

DESCRIPTION:

Get ready to join our Aptitude Showdown, where razor-sharpen minds clash in a battle of wits, puzzles, and quick thinking to complete, calculate and conquer the tittle of the aptitude Champion.

EVENT ORGANISER:

ROSHAN KARTHIK R M - 22BEC130
NAVEENA D - 22BEC100

TIME: 5.00 - 6.30 PM

VENUE: C-208, 1st Floor, ECE Department

DATE: 8th November 2023

PEER LEARNING SESSION

EVENT NAME: Mind Vs Brain (Synergy in Learning).

DESCRIPTION:

Discover your path to success through confident decision making. Join us on a journey of empowerment, where every choice is a step towards greatness. Your future is shaped by the decisions you make today.

EVENT ORGANISER:

MADHU PRATHIKA S - 22BEC084
PRITHIKA G - 22BEC120

RESOURCE PERSON:

Mr. THARUN RAJ G - 20BEC152
Final Year, MuSigma (Decision Scientist),
Vice President-ECE.

TIME: 5PM
VENUE: C-208, ECE Department.
DATE: 9th November 2023

ENCHANTER'S ENIGMA

DESCRIPTION:

Brace yourself to elevate your excitement and fuel your creativity. Where connecting threads, ideas meet action, discover the dialogue through distraction and business innovation meets endless fun !

EVENT ORGANISER:

TARSAN PATTIS R S - 22BEC184
SUYASH S A - 22BEC179
FELIX MATTHEW J - 22BEC034
GOPIKA A - 22BEC039

TIME: 5.00 pm to 6:30 pm.
VENUE: C BLOCK - Seminar Hall
DATE: 15th November 2023

SEMINAR ON “INDUSTRY 4.0”

DESCRIPTION:

This seminar explores Industry 4.0's cutting-edge advancements, highlighting how digital tech shapes industries. It focuses on integrating IoT, AI, big data, and automation to boost productivity, efficiency, and connectivity in manufacturing—a pivotal facet of the fourth industrial revolution.

EVENT ORGANISER:

SARAVANAN M - 21BEC132
GOWTHAM G - 21BEC039
NISHANTHAN M - 21BEC089

RESOURCE PERSON:

Mr. SYED IBRAHIM
Technical lead, Enthu Technologies

TIME: 2:00 pm to 4:30 pm.
VENUE: C Block – Seminar Hall.
DATE: 23th November 2023

DA SWEARING IN CEREMONY

DESCRIPTION:

The department association's inauguration was vibrant. Faculty, staff, and students gathered for its official launch. Warm welcomes and impactful speeches highlighted goals and collaboration. Symbolic rituals fostered unity, acknowledging key contributors. Attendees left with anticipation for the association's positive impact on departmental growth and unity.

EVENT ORGANISER:

SARAVANAN M - 21BEC132
GOWTHAM G - 21BEC039
NISHANTHAN M - 21BEC089

TIME: 2.00 to 4.30 pm
VENUE: C block seminar hall
DATE: 23th November 2023

RESOURCE PERSON:

Mr. SYED IBRAHIM
Technical lead, Enthu Technologies

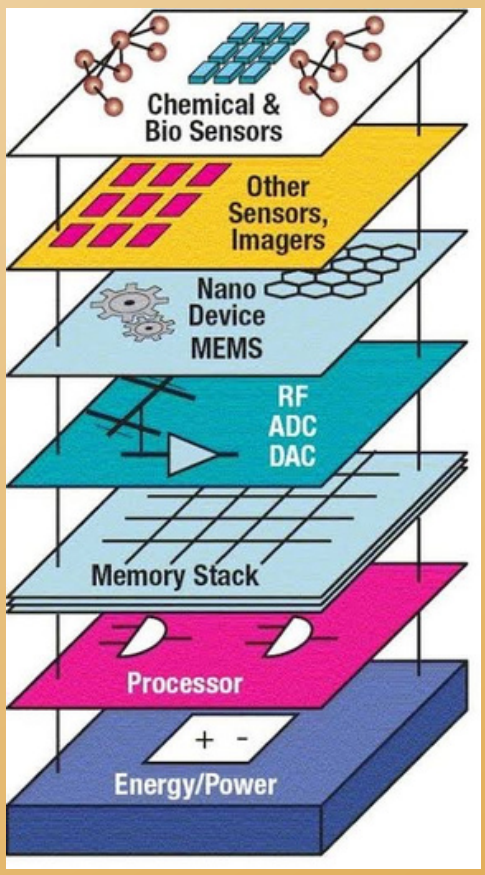
3D-IC Technology

Three-dimensional integrated circuit (3D-IC) is a die-stacking technology used in semiconductor packaging that offers new levels of efficiency, power, performance, and form-factor advantages to the semiconductor industry. 3D-IC is built by wafer-on-wafer or chip-on-wafer stacking on a single package interconnected using through-silicon vias (TSVs).

3D-ICs promise "more than More" integration by packing improved functionality into small form factors while enhancing performance and reducing costs. 3D-IC packages accommodate multiple heterogeneous die such as logic, memory, analog, RF, and micro-electrical mechanical systems (MEMS) at different advanced process nodes for high-speed logic and older nodes for analog.

BENEFITS OF 3D-IC:

- Lower costs are possible because not all functionalities, such as analog and memory, need to move to advanced process nodes.
- It's easier to meet high interconnect speeds and bandwidth requirements, reaching 100Gbps for advanced memory technologies.
- 3D-ICs allow miniaturization, saving board space and end product space. They're ideal for extremely compact mobile devices.
- 3D-ICs can reduce power because significant drivers are no longer needed. A 3D stack can use small I/O drivers with lower power. Further, reduced resistance-inductance-capacitance (RLC) helps minimize power.
- Interconnect between packages is reduced, allowing faster performance and a better power profile.
- Time to market can be faster, thanks to modularity, the potential for "die reuse," and the ability to leave analog/RF at higher process nodes.
- Emerging technologies such as photonics or MEMS can be integrated into 3D stacks.



LETZ EXPLORE

SOLITON TECHNOLOGIES

Regarded as a trusted partner for achieving Test & Measurement excellence through Automation and AI.Collaborated with hi-tech engineering companies, ranging from startups to Fortune 500, across industries such as Semiconductors, Medical Devices, Automotive, and Robotics, aims to assist in the enhancement of competitiveness and the release of Exceptional products through the implementation of Digital Transformation Service

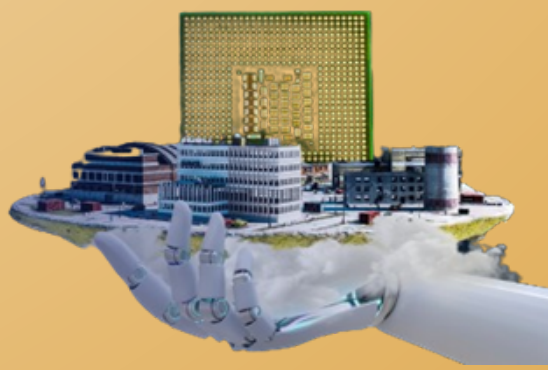
FIELD OF WORK

- Cybersecurity Suite
- Digital Transformation Platforms
- Data Analytics and Business Intelligence Tools
- IoT (Internet of Things) Solutions
- Cloud Services
- Semiconductor Chip Characterization Automation

Soliton
Celebrating 25 years

SKILLS

- Technical Proficiency
- Artificial Intelligence and Machine Learning
- Cybersecurity Knowledge
- Digital Transformation Expertise
- IoT Skills
- Cloud Computing
- Collaboration and Communication
- Adaptability and Learning Agility
- Problem-Solving and Critical Thinking



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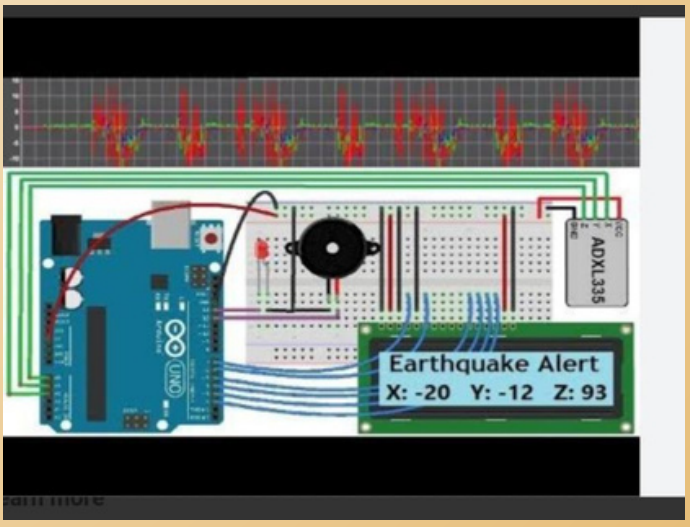
Arduino Earthquake Detector Alarm using Accelerometer

In this project, we will learn how to design Arduino Earthquake Detector Alarm with Seismic Graph. We have used ADXL335 3 axis Accelerometer as a sensor for detecting tilting, trembling, or any shaking movement of an earthquake. We have an interfaced ADXL335 Accelerometer with Arduino and LCD display for designing Arduino Earthquake Detector Alarm with Seismic Graph.

Components Required:

- Arduino UNO
- Accelerometer ADXL335
- 16x2 LCD
- Buzzer
- BC547 transistor
- 1k Resistors
- 10K POT
- LED
- Power Supply 9v/12v
- Berg sticks male/female



Working Explanation:

This Accelerometer module, based on the ADXL335 IC, interprets X, Y, and Z acceleration as analog voltages.
The Arduino Earthquake Detector uses the accelerometer to sense vibrations along any axis. Upon vibration, it translates these into ADC values read by Arduino, displayed on a 16x2 LCD, and graphically represented using Processing. Calibration involves sampling surrounding vibrations during Arduino startup, subtracting them for real readings. If values deviate from predefined thresholds, the Arduino triggers a buzzer, displays an alert on the LCD, and activates an LED. Sensitivity adjustments are possible by modifying predefined values in the Arduino code.

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

Quiz

1.A chessboard contains 64 equal squares and the area of each square is 2.56 cm2.Find the length of the side of the chessboard.

A. 3.5 cm
B. 4 cm
C. 12.8 cm
D. More than one of the above
E. None of the above

2.The radius of a right circular cylinder is 7 cm. Its height is thrice its radius. What is the curved surface area of the cylinder?

A. 924 cm2
B. 666 cm2
C. 724 cm2
D. More than one of the above
E. None of the above

3.Pipes A and B can empty a full tank in 16 hours and 24 hours, respectively. Pipe C alone can fill the empty tank in 4 hours. If A, B and C are opened together, the tank will be 35% full after :

A.3 (1/5) hours
B.3(2/5) hours
C.2 (2/5) hours
D.More than one of the above
E.None of the aboove

4.Murali's present age is half of his father's age. before 10 years, his father's age was thrice his age. Find the present age of Murali and his father.

A.16, 32 years
B.15, 30 years
C.20, 40 years
D.More than one of the above
E.None of the above

5.Two trains starting at the same time from two stations 300 km apart and going in opposite directions cross each other at a distance of 180 km from one of the stations. What is the ratio of their speeds?

A.4 : 3
B.3 : 2
C.3 : 4
D.More than one of the above
E.None of the above

EDITORS:

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