

Monthly Magazine



JANUARY 2025

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 OBJECTIVE(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.

NEURAL SPARK 1



DESCRIPTION:

The objective of the event 'Neural Spark I' is to enhance logical reasoning and analytical abilities among students by engaging them in challenging questions on blood relations and seating arrangements. The event 'Neural Spark I' has been an knowledge gaining session for students where they learnt the techniques to solve problems related to blood relations and seating arrangements.

ORGANIZED BY:

Janani J - 21BEC052
Pujashri S - 22BEC213

EVENT MODE: Offline

DATE : 07:01:2025

TIME : 05.00pm - 06.30pm

VENUE : C-201(ECE Dept)

RESOURCE PERSON:

Asvika A P - Final Year
Student



NEURAL SPARK II



DESCRIPTION:

Neural spark II : The objective of the session was to give students better understanding on aptitude problems based on boats and streams. This represents “Fantastic - 40”, a power-packed Neural Spark -II focused on Boats and Streams and Calendars. This session equipped students with smart strategies, time-saving tricks, and problem-solving techniques to excel in aptitude tests and placements.

ORGANIZED BY:

Janani J - 21BEC052

Pujashri S - 22BEC213

EVENT MODE: Offline

DATE : 08:01:2025

TIME : 05.00pm - 06.30pm

VENUE : C-201(ECE Dept)

RESOURCE PERSON:

Nishanthan M - Final Year
Student

THINK AND INK CHALLENGE



DESCRIPTION:

The think and ink challenge is a dynamic two round technical event crafted to ignite your curiosity and showcase your brilliance. Dive into this thrilling competition where knowledge meets strategy, and every inked answer takes you closer to triumph.

ORGANIZED BY:

Aruna KR - 22BEC016
Sri Harini J - 22BEC166

EVENT MODE: Offline

DATE : 21:01:2025

TIME : 05.00pm - 06.30pm

VENUE : C-201(ECE Dept)



NEURAL SPARK IV



DESCRIPTION:

Neural Spark IV was an engaging session under the "Fantastic - 40" series, designed to strengthen students' understanding of Boats & Streams and Calendars. This session provided effective problem-solving strategies, time-saving techniques, and quick calculation methods to enhance students' aptitude skills. With a structured approach and practical insights, Neural Spark IV aimed to improve accuracy and speed, equipping students for success in competitive exams and placements.

ORGANIZED BY:

Janani J - 21BEC052

Pujashri S - 22BEC213

EVENT MODE: Offline

DATE : 23:01:2025

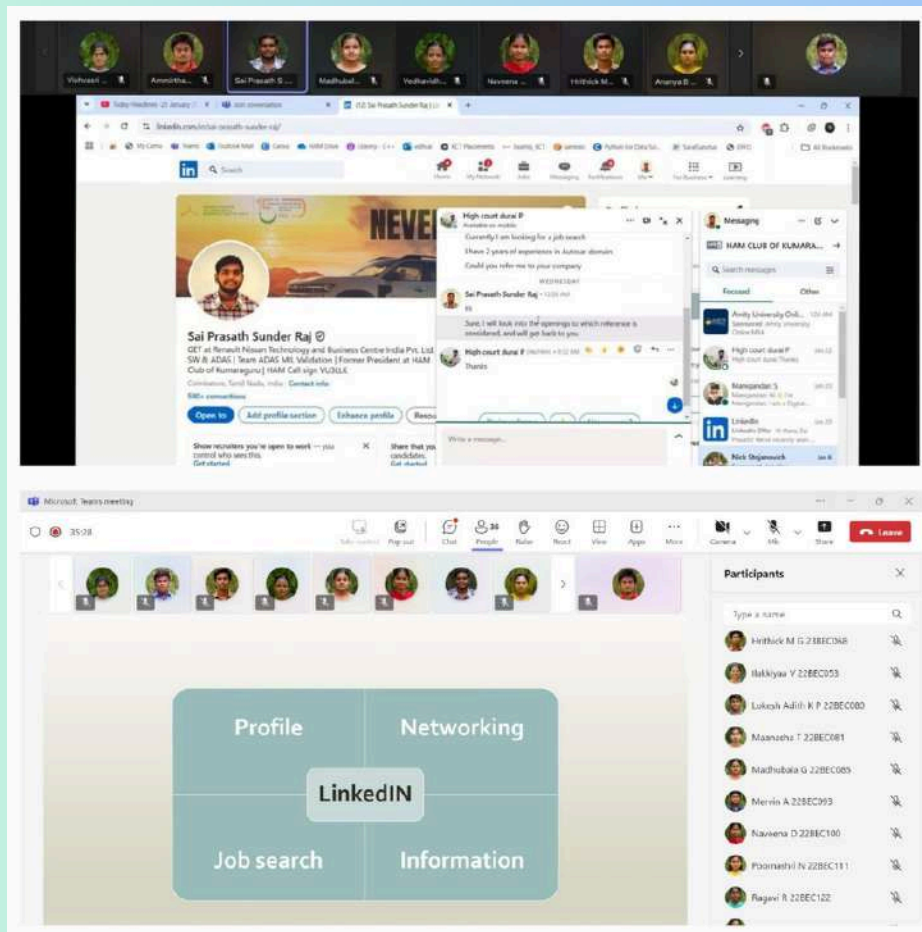
TIME : 05.00pm - 06.30pm

VENUE : C-201(ECE Dept)

RESOURCE PERSON:

Navi Preethi S- Final Year
ECE

LINK SPHERE



DESCRIPTION:

The session aims to help attendees enhance their LinkedIn presence by optimizing their profiles, building meaningful connections, and showcasing their expertise to unlock new career opportunities. It focuses on personal branding and professional growth.

ORGANIZED BY:

Sai Prasath S - Validate
Engineer

EVENT MODE : Online

DATE : 25-01-2025

TIME : 05.00pm - 06.30pm

PLATFORM : Microsoft Teams

NEURAL SPARK VI



DESCRIPTION:

Neural Spark VI was a dynamic and engaging session designed to strengthen students' aptitude skills, focusing on Boats & Streams and Calendars. As part of the "Fantastic - 40" series, this session provided smart strategies, time-saving tricks, and problem-solving techniques to help students tackle aptitude challenges effectively. With a structured approach and practical insights, Neural Spark VI aimed to enhance problem-solving speed and accuracy, preparing students for competitive exams and placements.

ORGANIZED BY:

Janani J - 21BEC052

Pujashri S - 22BEC213

EVENT MODE: Offline

DATE : 28:01:2025

TIME : 05.00pm - 06.30pm

VENUE : C-201(ECE Dept)

RESOURCE PERSON:

Kiruthika V M - Final Year
ECE

NEURAL SPARK VII



DESCRIPTION:

Neural Spark VII was an insightful session under the "Fantastic - 40" series, designed to enhance students' proficiency in Boats & Streams and Calendars. This session focused on smart problem-solving strategies, time-saving techniques, and quick calculation methods to help students tackle aptitude challenges with confidence. With a structured approach and real-time practice, Neural Spark VII aimed to boost accuracy and speed, preparing students for competitive exams and placements.

ORGANIZED BY:

Janani J - 21BEC052

Pujashri S - 22BEC213

EVENT MODE: Offline

DATE : 29:01:2025

TIME : 05.00pm - 06.30pm

VENUE : C-201(ECE Dept)

RESOURCE PERSON:

Nyruthi A K - Final Year
ECE

THE FREEDOM HUNT



DESCRIPTION:

The freedom hunt participants will embark on an exciting adventure filled with riddles and clues, all inspired by India's history, culture, and independence journey. The treasure hunt aims to engage participants in a fun and interactive way to learn about India's legacy while testing their problem-solving skills.

ORGANIZED BY:

Tawfiq Luqman K-
22BEC187

EVENT MODE : Offline

DATE : 30:01:2024

TIME : 05:15pm - 06:30 pm

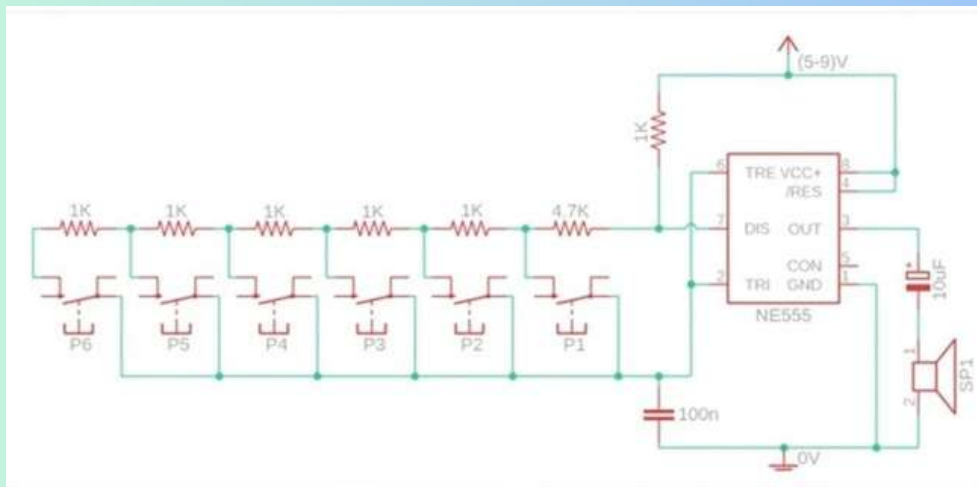
VENUE : Auditorium lawn

ELECTRONIC PIANO

ABSTRACT :

An electric piano circuit using a 555 Timer IC can be designed to produce musical tones by generating different frequencies corresponding to musical notes. The 555 Timer operates in a stable mode to generate continuous square wave signals, which serve as the sound source. Push buttons are used to select different resistors that control the timing of the 555 Timer's oscillations, changing the output frequency, and thereby producing different musical notes when each button is pressed. Capacitors are also part of the timing circuit to stabilize the output. The output from the 555 Timer is then amplified and fed to a small speaker to generate audible sound, simulating the function of a piano keyboard.

Diagram:



COMPONENTS :

- 555 IC
- * 8 Ohm Speaker
- * Momentary Push Button Switches x 6
- * Capacitors: 100nF, 10uF
- * Resistors: 6 x 1K, 4.7K
- * Breadboard
- * Connecting Wires
- * (5-9)V of Power Supply

WORKING:

An electronic piano works by detecting key presses using sensors, which measure velocity to determine sound dynamics. It generates sound using sampled acoustic piano recordings or synthesized tones. The sound is amplified and played through speakers or headphones. Features like touch-sensitive, weighted keys, pedals and MIDI connectivity enhance the playing experience, while it operates on electricity for power.

QUIZ

1) A capacitor is used as a filter in a DC power supply. If the ripple voltage is 1V, load resistance is $1k\Omega$, and the supply frequency is 50Hz, what is the required capacitance?

- a) $10\ \mu\text{F}$
- b) $100\ \mu\text{F}$
- c) $200\ \mu\text{F}$
- d) $500\ \mu\text{F}$

2) A microprocessor with a clock frequency of 2 GHz executes an instruction in 2 clock cycles. What is the instruction execution time?

- a) 0.5 ns
- b) 1 ns
- c) 2 ns
- d) 4 ns

3) In an ideal operational amplifier, what is the input impedance?

- a) Zero
- b) High but finite
- c) Infinite
- d) Equal to the feedback resistance

4) How many memory locations can a microprocessor with 16 address lines access?

- a) 16 KB
- b) 64 KB
- c) 32 KB
- d) 128 KB

5) A sinusoidal signal completes cycles in seconds. What is the frequency of the signal?

- a) 500Hz
- b) 1000 Hz
- c) 2 Hz
- d) 2000 Hz

Editor:

Aishwarya A K - 22BEC007

Poojasri P - 23BEC127

Chitra S - 23BEC039