2021

Bhoj Reddy Engneering College for Women

Department of Electronics & Communication Engineering

TECHZIG

BRECW ECE
Strive Forward for the Research

CONTACT US :

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CONTENTS

VISION :

To empower women by providing thorough quality technical education and transform into meritorious, self-disciplined and competent professionals with a keen sense of social responsibility and enable them to reach goals in the area of Electronics and Communication Engineering.

MISSION :

The Mission of the Department of Electronics and Communication Engineering is:

- To be the epitome of academic rigour, flexible to accommodate every student and faculty for basic, current and future technologies in Electronics and Communication Engineering.
- Strengthening and providing support in sustaining a healthy society by improving the quality of life through the application of technology

ABOUT COLLEGE

Bhoj Reddy Engineering College for Women is run by Sangam Laxmibai Vidyapeet, a registered voluntary social action group working since 1952 for employment of women and girls through education. The Vidyapeet has 70 years of experience in the field of education.

The College was established in 1997.It is managed by an executive committee consisting of persons with long experience in the field of education. Within a short period ,it has emerged as one of the premier engineering colleges in the state .

The College is offering the following undergraduate courses with an intake of:

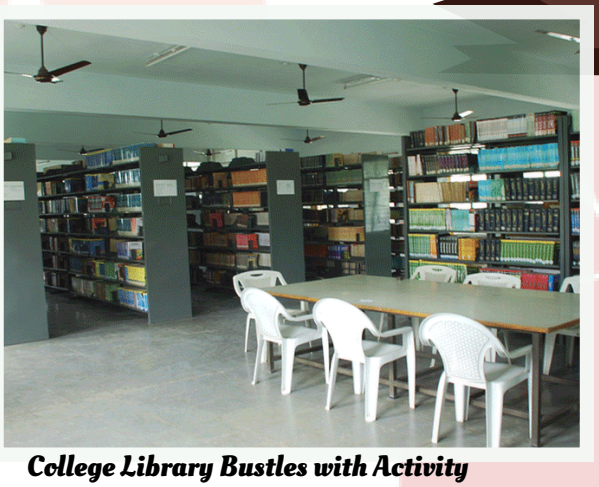
- Computer Science and Engineering (CSE)
- Electronics & Communication Engineering (ECE)
- Information Technology (IT)
- Electrical & Electronics Engineering (EEE)

Students examine notice board attentively

Electronic students

Lifelong learning for lifelong success

HIGHLIGHTS OF BRECW



College Library Bustles with Activity

- **INFRASTRUCTURE**

All Classrooms are equipped with LCD facilities for conducting lectures and presentations effectively. Tutorials are conducted regularly and, for which separate tutorial rooms are provided in every department. An open air theatre which accommodates more than 1200 is also available in the college campus. A full fledged Ramdev Convention Center' with a seating capacity of 300 will be ready for the academic year 2012-13 for conducting curricular, co-curricular and extra-curricular activities.

- **Library**

The college has a spacious well-stocked modern library, available to the students and faculty, with the latest information in all forms, text and competitive and reference books, periodicals and back volumes of periodicals, project reports, CDs and Newspaper facility for the intellectual nourishment. The college library is fully computerised through VTLS-VIRTUA Library Management Software, networked and multimedia digital library with 65 computers.

- **Academic Activities**

The College has been in the forefront in organizing various short-term courses, conferences, symposia, workshops, seminars and special lecturers .

PRINCIPAL' S WORDS

DEAR STUDENTS ,

Dr J Madhavan
M.E, Ph.D., MISTE., Principal

Today the country is in great need of technically sound graduates having a strong aptitude to work with zeal and fervour. Our college focuses on offering the best of the Technical Education for the overall development of the students. When you walk out of the campus, you can be competent enough in carrying out all your personal as well as social responsibilities. Thanks to the Training and placement cell of our college which intends students be aware of the various job opportunities, imparts the necessary training and skills, and conducts campus interviews to recruit themselves in the final year of their graduation. It plays a crucial role in helping students to kick-start their career in their respective fields. I am pleased that the students are well-known about all curricular, co- curricular and extra-curricular activities along with substantial emphasis on sports and cultural activities. My heartfelt Congratulations to all the contributors and faculty members of the Magazine Committee on the successful publication of this magazine!

HOD'S WORDS

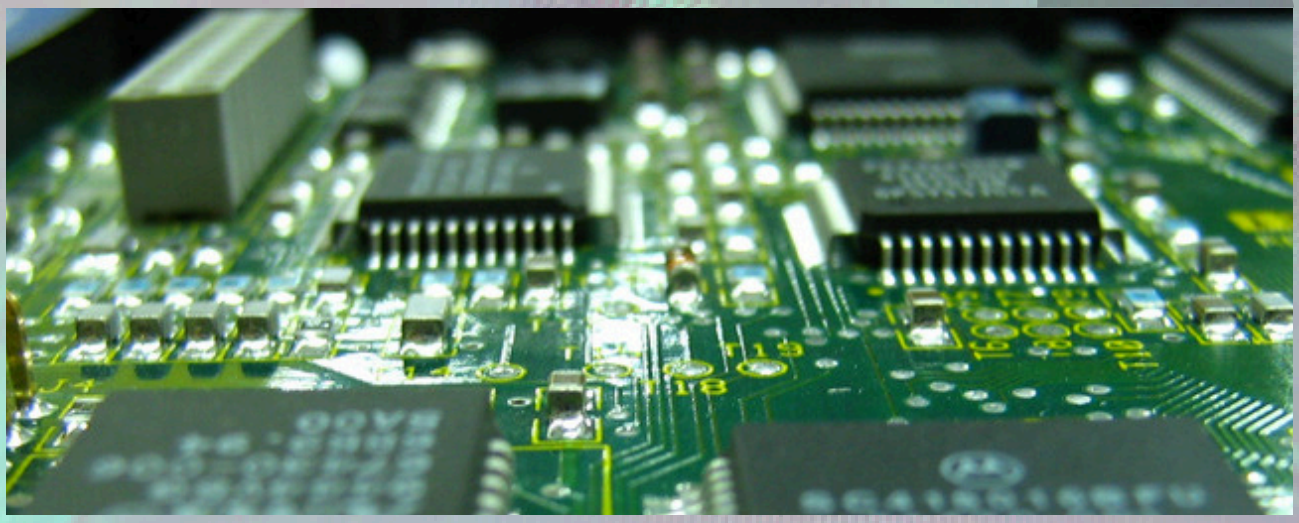
DEAR STUDENTS AND PARENTS,

Mrs. B Jyothsna
HOD,ECE

Thank you for showing your interest in Department of Electronics and Communication Engineering. I welcome you all to the Department of Electronics and Communication Engineering (ECE) at Bhoj Reddy Engineering College for Women. The Department of Electronics and Communication Engineering was established in the year 1997 with B .Tech (ECE) with an intake of 180 girl students. This discipline extends to every aspect of modern society and continues to be the cornerstone of rapid technological advancements that improve the quality of life in this millennium. It also strives to be at the forefront of engineering education to equip our girl students to be engineering leaders in industry, research, and entrepreneurship. I welcome all the aspirants to be a part of ECE family and wish them a bright future! Our department students have been selected by some of the leading software companies of the country. With the available diversity of expertise of the faculty and with the support of the management, we prepare our girl students to work in global multidisciplinary environment .

ABOUT ECE

Electronics and Communication Engineering (ECE) is concerned with design, development, test and supervision of manufacturing of electronic equipment. Electronics has changed the entire world with its power of communication and micro-miniaturilation of devices like transistors, diodes, resistors.



ECE is a swiftly advancing field, with new ideas emerging every other minute. From mobile phones to fiber optics to remote sensing, there are exciting avenues to explore and create even better ideas. With technology becoming all pervasive in everyday life, opportunities for electronics and communications engineers are endless. The Department has well-established labs as per norms of JNTUH.

A resource centre of academic excellence for imparting technical education with high pattern of discipline through dedicated staff which shall set global standards, making National and International students technologically superior and ethically strong, who in turn shall improve the quality of life.

Programme Outcomes (POs) of ECE Department

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **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.
3. **Design-development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Programme Educational Objectives (PEOs) of ECE Department

At the end of the program, the women engineers will be able to.

PEO1: Solve complex problems by using their expertise in analyzing and developing potential models using modern scientific tools.

PEO2: Prioritize their professional development through interpersonal, leadership, and social skills, catering to the needs of society with ethics and integrity.

PEO3: Exhibit sustained learning adapting to changing professional needs

Programme Specific Outcomes (PSOs) of ECE Department

PSO1: Able to design, develop and analyse systems in the field of Electronics, Communications & Networking, Signal & Image processing, VLSI technology and Embedded systems.

PSO2: Demonstrate expertise in the use of software and hardware required in real-life applications.

FACULTY CONTRIBUTIONS

S Manjula-Associate Professor

- STTP on "Problem Solving Through C" - January to April 2021
- FDP on "Data Science" - 21 to 25 February 2021
- FDP on "Data Science" - 6 to 8 October 2021

B Jyothsna-Associate Professor

- FDP on "Introduction to Internet of Things" - January to April 2021
- FDP on "Optical Wireless Communication - An enabling technology for next generation networks" - 1 to 5 Feb 2021
- FDP on "Outcome Based Education"- 21 to 25 June 2021
- FDP on "Inculcating Universal Human Values in Technical Education" - 22 to 26 March 2021
- Induction Programme "Millimeter wave frequencies phase -II"- 16 to 22 March 2021
- Workshop on “Quality in Engineering Education-An Outcome Based Education (OBE) approach”- 26-27 February 2021

G Srilakshmi-Associate Professor

- FDP on "Data Science & its applications" - 10 to 19 Jan 2021
- STTP on "Graphical System Design Approach for Signal and Image Processing Applications" - 2 to 7 Nov 2021
- FDP on "Machine learning for Data Science Using Python" - 01 to 09 September 2021

J Stella Mary-Assistant Professor

- FDP on "Microprocessors and Microcontrollers" - January to April 2021
- FDP on "Outcome Based Education"- 21 to 25 June 2021
- FDP on “Research area in Artificial intelligence & machine learning with case studies”- 14 to 20 June 2021
- FDP on "Inculcating Universal Human Values in Technical Education"- 22 to 26 March 2021

Kazi Nikhat Parvin -Assistant Professor

- FDP on "Recent Trends in Electronics Engineering" - 02 to 06 June 2021
- FDP on "Introduction to Machine Learning" - 18 to 22 April 2021
- FDP on "Communication Systems using Machine Learning Algorithms (CSMLA)"- 14 to 19 March 2021
- FDP on "Digital Design using Intel Edge Centric" - 27 September to 01 October 2021
- FDP on "Future Advancement in the field of Telecommunication and Embedded System" - 24 to 30 August 2021
- FDP on "Digital VLSI Design and Verification" - 23 to 27 August 2021
- FDP on "Full – Custom Design of an IC using Mentor Graphics and Synopsys"- 09 to 21 August 2021
- FDP on "Verilog HDL for FPGA & Embedded Applications" - June to 02 July 2021
- FDP on "Machine Learning Applications in Micro- Nano VLSI Technologies"- 21 to 25 June 2021
- Workshop on "Thesis documentation skills for Researchers using MS word, Excel and LaTex editor"- 17 to 19 June 2021
- FDP on "System Design using Vivado design suite &Zynq-700"- 16 to 20 June 2021
- FDP on “Research area in Artificial intelligence & machine learning with case studies”- 14 to 20 June 2021
- FDP on “Recent Trends and opportunities for Research in Electronics and Computer Science Engineering”- 24 to 28 May 2021
- FDP on “Research area in Artificial intelligence & machine learning with case studies”- 20 to 26 May 2021
- FDP on “Advance VLSI Design using Microwind" - 06 to 12 May 2021
- FDP on “VLSI Design Verification"- 19 to 24 April 2021
- FDP on “RISC-V VLSI Implementation Flow: RTL2GDS" - 27 March to 10 April 2021
- FDP on "Inculcating Universal Human Values in Technical Education"- 22 to 26 March 2021
- FDP on "System on Chip (SOC) design using EDA Tools"- 18 to 20 March 2021
- FDP on "Writing Quality Research Paper & Publishing"- 08 to 13 March 2021

R Vyshnavi-Assistant Professor

- FDP on "Advancements in Wireless Communication Technologies, Networking & Applications" - 21 to 25 March 2021
- FDP on "5G & Emerging Technologies" - 07 to 21 August 2021

Shafia Tasneem-Assistant Professor

- FDP on “Mentoring for Institutional Social Responsibility and Facilitation for Community Engagement” - 07 to 11 March 2021

GG Bremiga-Assistant Professor

- FDP on "Recent Advances in Micro Electromechanical Systems (MEMS) " - 07 to 12 December 2021
- FDP on "Computational Techniques & Applications in Bioinformatics"- 13 to 25 September 2021
- FDP on “Research Methodology & IPR” - 13 to 17 September 2021
- FDP on "An Approach to Enterprise Resource Planning"- 21 to 26 June 2021
- FDP on "Website Development Using WordPress"- 14 to 19 June 2021
- FDP on "Advance Networking Concepts"- 14 to 19 June 2021
- FDP on "Advance Concepts on Networking and Linux"- 31 May to 05 June 2021
- FDP on "Advanced Excel with Data Visualization"- 31 May to 05 June 2021
- FDP on "Competitive Coding"- 24 to 29 May 2021
- FDP on "Introduction to Software Development Life Cycle"- 17 to 22 May 2021
- FDP on "Linux"- 17 to 22 May 2021
- FDP on "Introduction to Six Sigma"- 26 April to 01 May 2021
- FDP on "Data Science"- 19 to 30 April 2021
- FDP on "Python "- 19 to 24 April 2021
- FDP on "Cyber Security "- 19 to 24 April 2021
- Webinar Series on "Emerging Trends in Computer Science and Technology"- 13 to 17 April 2021
- FDP on "Cloud computing"- 12 to 17 April 2021
- FDP on "Machine Learning"- 12 to 17 April 2021
- FDP on "Programming Using C & C++"- 12 to 17 April 2021
- FDP on "Project Management"- 05 to 10 April 2021
- FDP on "Inculcating Universal Human Values in Technical Education"- 22 to 26 March 2021

Saba Sultana-Assistant Professor

- Course on “Human Centered Robotics” - 09 to 14 May 2021
- FDP on "Control System: Sensor Technology" - 11 to 15 January 2021
- FDP on "Natural Language Processing" - 8 to 12 Nov 2021.
- FDP on "Artificial Intelligence for Speech and Bio-Signal Processing" - 20 to 24 September 2021
- FDP on “Research Methodology & IPR”- 13 to 17 September 2021
- FDP on "Robotics: Advances and Applications" - 23 to 27 August 2021
- Online Training Programme on “Participatory Approaches and Technology Interventions for Rural Development through UBA” - 16 to 18 August 2021

N Sony-Assistant Professor

- FDP on "Communication Systems using Machine Learning Algorithms (CSMLA)" - 14 to 19 March 2021

SVMG Phani Kumar C-Assistant Professor

- FDP on "Emerging Wireless Technologies: Connecting the Future "- 19 to 23 March 2021
- FDP on "Recent Trends in Intelligent Systems" - 27 January to 02 February 2021
- FDP on "Machine Learning Applications in Signal Processing and Communication Engineering " - 03 to 08 January 2021

K Srinidhi Reddy-Assistant Professor

- RC on "Systems and Signal Processing"- 01 to 16 March 2021
- Online FDP on “Advanced Microprocessors & Microcontrollers” - 07 to 09 August 2021
- FDP on “VLSI & Embedded Systems”- 25 to 27 June 2021
- FDP on “Analog Communications” - 04 to 08 July 2021
- FDP on “IOT for Everyone & Everything” - 06 to 08 June 2021
- FDP on “Gender Equality, Feminism in Contemporary India”- 28 to 30 July 2021
- FDP on “Digital IC Design with DFT concepts using mentor graphics” - 01 July 2021

B Eleena-Assistant Professor

- RC on "Systems and Signal Processing"- 01 to 16 March 2021

M Swapna-Assistant Professor

- FDP on "Digital Transformations-IIOT(Industry 5.O)"- 04 to 09 October 2021

S Surekha-Assistant Professor

- FDP on "Analog and Digital VLSI Design using Modified open Source EDA and InOhmic Tech Methodologies"- 30 July to 03 August 2021
- FDP on "Simulation and Modeling of Data Communications & Networks"- 27 to 31 July 2021

Md Toufeeq Ahmed-Assistant Professor

- FDP on "System on Chip Design - Basics to Development of Chips"- 01 to 11 November 2021
- STTP on "Advances in Wireless Technologies and Telecommunication"- 31 August to 05 September 2021
- STTP on "Advances in Wireless Technologies and Telecommunication"- 17 to 22 August 2021

G Ranjitha-Assistant Professor

- Online workshop on "Universal Human Values on the theme Inculcating Universal Human Values in Technical Education"- 02 to 06 November 2021

STUDENT'S ACHIEVEMENTS

UBA Activities

Our students have participated in the Azadi Ka Amrut Mahotsav poster and video competition on COVID-19 awareness for the students of Various institutions of UBA & (Telangana). It was sponsored by IIT Delhi of Ministry of Education in which our students won second and third prize for our college. It was Organised by NIRDPR, Hyderabad on 5th August , 2021

As a part of Golden Jubilee celebrations of JNTUH, our students have participated in one of the dance events to represent our state culture Wherein they Performed Bharatanatyam. It was a precious moment for BRECW for winning 1st prize in the event .

"With passion they create, in dance and debate,
students excel, their talents elevate"

STUDENT ARTICLE

Digital Image Processing for pedestrians crossing

This work proposes a novel technique to assist the physically challenged people to cross the roads near the traffic signals or in the pedestrian crossing with the help of automatic video surveillance. Methods/Statistical Analysis: As per the Indian roadway corporation it is decided to minimum 1.8m (width) × 2.2m (height) is allocated for walking zone. 1800mm width is reserved for wheelchair movement in pedestrian. Detection of moving objects in a stable place needs the high security level. Findings: Image processing segmentation algorithm plays an important role to track the moving object in the fixed pedestrian crossing which can assist the physically challenged people or the elderly person. Various morphological filtering operations enhance the quality of segmenting the moving person in the video. This methodology employs histogram of Gaussian detection and object detection is done. The proposed work improves it results by 0.71% accuracy. Applications/Improvements: This work helps the physically challenged to cross the pedestrian in a safe manner and helps autonomous vehicles. The importance of Video surveillance is applied in many fields like missile tracking, security purpose, medical laparoscopy, moving robot design during the building crash, road and forest accident prevention etc. Object monitoring is the principal sequence used for the video surveillance machine.

The significant method applied for object monitoring are frame difference method, optical flow method and historical past subtraction techniques. It is difficult to use optical float method in a real time software.

This advancement can also aid in enhancing urban planning strategies and improving the overall accessibility infrastructure for diverse user needs in public spaces.

Furthermore, integrating machine learning for adaptive object recognition and expanding surveillance coverage could amplify safety measures and support broader urban mobility initiatives.

K Mahalaxmi
III ECE A

Surgical Robotics

Surgical robotics represents a transformative leap in medical technology, blending robotics with surgical procedures to enhance precision and patient outcomes. These systems, operated by skilled surgeons, offer unparalleled dexterity and control, enabling complex surgeries with minimally invasive techniques.

At the heart of surgical robotics are advanced robotic arms equipped with surgical instruments and a high-definition camera. Surgeons manipulate these instruments from a console, translating their hand movements into precise actions within the patient's body. This minimizes incisions, reduces trauma, and accelerates recovery times compared to traditional open surgeries.

The benefits extend beyond the operating room. Patients experience less pain, reduced risk of infection, and shorter hospital stays. Moreover, robotic assistance allows for procedures that were previously challenging or impossible, pushing the boundaries of what's achievable in modern medicine.

As technology evolves, artificial intelligence and machine learning are being integrated, enabling robots to learn from data and assist surgeons with real-time decision-making. This synergy of human expertise and robotic precision promises a future where surgeries are safer, more efficient, and accessible to more patients worldwide.

In conclusion, surgical robotics stands at the forefront of medical innovation, offering hope for improved surgical outcomes and better quality of life for patients. As research continues and technology advances, the potential for robotics to redefine surgery grows, setting a new standard for healthcare excellence.

Despite its promising advancements, surgical robotics faces challenges such as cost barriers, training requirements for surgeons, and the need for robust regulatory frameworks. Addressing these challenges is crucial for wider adoption and integration into healthcare systems globally. Future directions include enhancing robotic autonomy, improving haptic feedback for surgeons, and expanding the range of procedures that can benefit from robotic assistance. As research continues and technologies evolve, surgical robotics is poised to play an increasingly pivotal role in shaping the future of surgery, offering safer, more precise, and more accessible treatments for patients around the world.

B Gouri Sri
II ECE B

VIDYA VINAYAM SHOBATE

BHOJ REDDY ENGINEERING COLLEGE FOR WOMEN
1919 - 2001
Estd 1997

EDITORIAL BOARD