

BUILDERS ENGINEERING COLLEGE



A NEWSLETTER OF

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

DEPARTMENT - VISION & MISSION

VISION

To be an updated technocrat in the field of Electronics and Communication Engineering.

MISSION

Preparing rural students for successful career through creative thinking and knowledge application

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Vision of the Institution

To be the most preferred knowledge provider.

Mission of the Institution

Builders Engineering College endeavors to prepare rural students for successful career through academic and applied research.

About the Department

Established in 2009, the Department commenced with an initial intake of 60 students. It boasts 10 fully-equipped laboratories, each adhering to university norms and furnished with cutting-edge technology.

The ECE Computer Centre provides students access to special software packages such as MENTOR GRAPHICS, PSPICE, MATLAB, Xilinx ISE, MULTISIM, MODELSIM, and KIEL.

The department stands out with its distinctive offerings, including advanced trainer kits, ARM Processors, Altera development boards, CPLD Trainer kits, and Wireless Sensor Networks trainer kits. These resources empower students to engage in real-time projects and practical learning experiences.

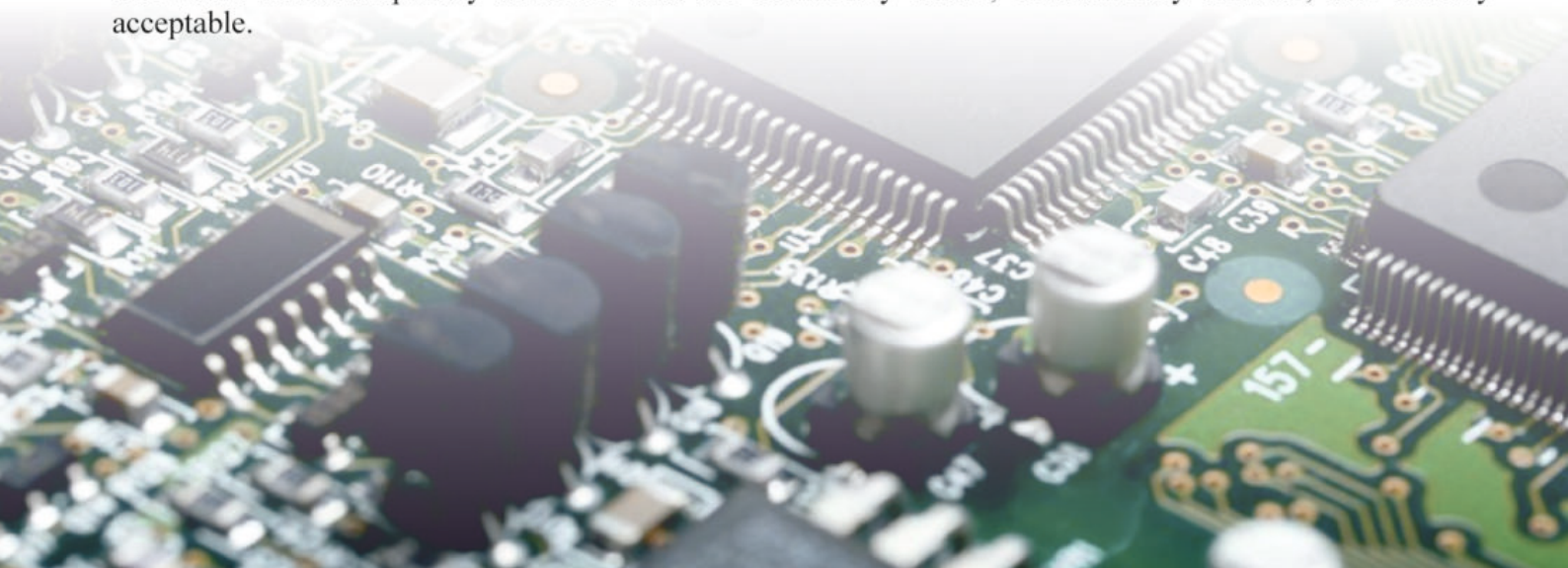
The department actively engages with professional bodies such as IEEE, IETE, and ISTE, providing a valuable platform for both faculty members and students.

Programme Specific Outcomes (PSOs)

- To design and develop complex systems in the research areas of next generation Communication Systems, RF and Power systems.
- To design and develop systems in the domains of IoT based Embedded Systems, Advanced Signal and Image Processing and latest Semiconductor technologies.

Program Educational Objectives (PEOs)

- Shall be successful in their professional careers, academic pursuits and research
- Shall study and build abilities on a continual basis in order to deliver high-impact, energy-efficient and futuristic solutions
- Shall demonstrate strong communication skills, a professional mindset and ethics in order to create and build real-world multidisciplinary solutions that are technically sound, economically feasible, and socially acceptable.





Principal's Message

It is a matter of great pride and satisfaction for Builders Engineering College to bring out the News Letter, Released from the Department of ECE. The College has made tremendous progress in all areas academic, non-academic, capacity building relevant to staff and students. I am confident that this issue of the Department News Letter will send a positive signal to the staff, students, and the person who are interested in Technical education and Technology-based activities.

I congratulate the Editorial Board of this News Letter who have played a wonderful role in accomplishing the task in Record time.

I express my deep sense of gratitude to Mr. S.D. Vijayakumar, HoD/ECE under whose guidance this Technical work has been undertaken and completed within the stipulated time.

Also my heartfelt Congratulations to staff members and Students for their fruitful effort.

Dr. S. Gopalakrishnan

Principal

Words from Head of the Department

Dear Members of ECE community,

I am delighted to express my congratulations on the unveiling of the Electronics and Communication Engineering (ECE) Newsletter. This publication stands as a testament to the remarkable progress achieved in diverse realms, covering both academic and non-academic spheres. It also highlights the ongoing development of capabilities relevant to our esteemed staff and students. I commend the Editorial Board for their praiseworthy role in accomplishing this task with remarkable efficiency and within a record timeframe. I extend my sincere gratitude to Mr. U. Rajasekaran, AP/ECE for providing invaluable guidance.

My warmest congratulations to the dedicated staff members and enthusiastic students who have invested their time and effort into bringing this newsletter to life. Your collective contributions have undeniably played a pivotal role in the success of this publication.

Mr. S.D. Vijayakumar

Head of the Department



Editor's Desk

Dear Esteemed Readers,

Greetings and a warm welcome to the most recent edition of our Electronics and Communication Department Newsletter! As we navigate the ever-changing landscape of technology, we are delighted to present to you the latest advancements, achievements, and compelling projects from our department.

We take great pride in spotlighting the remarkable accomplishments of both our students and faculty, individuals who consistently push the boundaries of knowledge, contributing significantly to the progress of our field.

Our dedication to cultivating a collaborative and forward-thinking community is evident in the diverse array of events and activities showcased in this newsletter. Ranging from enlightening guest lectures by industry experts to hands-on workshops and invigorating hackathons, our goal is to furnish our students with opportunities to confront real-world challenges and elevate their skill sets.

As we embark on another semester brimming with promise and potential, we extend our sincere gratitude to our devoted faculty, spirited students, and the supportive community that surrounds us. Together, we are actively shaping the future of electronics and communication, and we are genuinely thrilled to have you accompany us on this journey.

Thank you for your unwavering interest and support. We trust you will find enjoyment in perusing this edition of our newsletter and encourage you to stay tuned for further updates from the Electronics and Communication Department.

Warm regards,

Mr. U. Rajasekaran, AP/ECE
Managing Editor

Editorial Team

Editor in Chief:

Mr. S.D. Vijayakumar, HoD/ECE

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Mr. U. Rajasekaran, AP/ECE

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Ms. V. Manimala, AP/ECE

Student-Chief Editor:

Ms. S. Dhivya Sri, IV Year

Associate Editors:

Mr. A. Sridhar, IV Year

Ms. A. Ayisha Banu, III Year

EVENTS ORGANIZED



BUILDERS ENGINEERING COLLEGE
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
ISO 9001:2015 Certified Institution & Accredited by NAAC with B++ Grade
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Association of ECE
The Management, Principal, HoD, Faculty, Staff and Students cordially invites you....

**Guest lecture on
BOOK ENGINEERING TO PRODUCT
ENGINEERING**

28.01.2021 | VENUE: DC HALL

Mr. S. SUNDARAMOORTHY
CEO, Sunshiv Electronic Solutions, Coimbatore
has kindly consented to be the Chief Guest and deliver the Guest Lecture

Book Engineering to Product Engineering

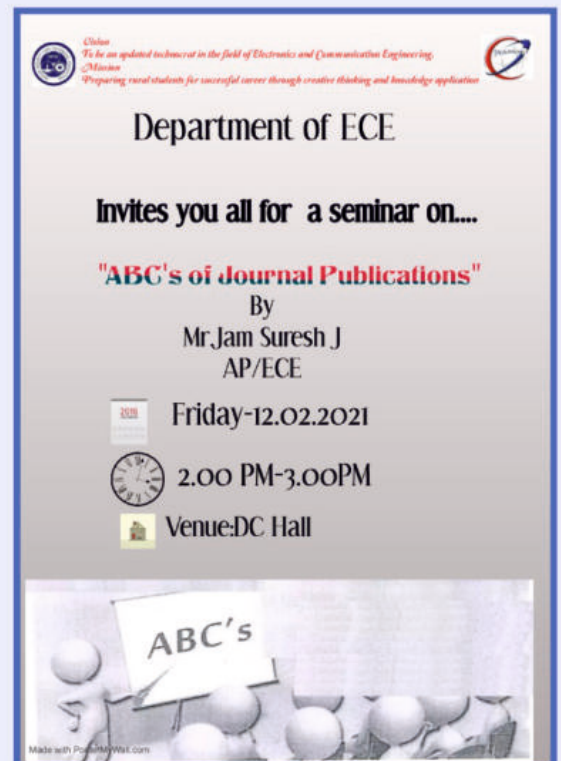
January 28, 2021

In the academic year 2020-21, on January 28, 2021, the Student Association "GNAANA" and ISTE jointly organized a guest lecture on 'Book Engineering to Product Engineering.' The session featured Mr. S. Sundaramoorthy, CEO of Sunshiv Electronic Solutions in Coimbatore, as the distinguished speaker. The guest lecture focused on various Program Outcomes, including Program Outcomes 3 (Design/Development of Solutions), 6 (The Engineer and Society), 7 (Environment and Sustainability), and 8 (Ethics). Mr. Sundaramoorthy shared valuable insights into the transition from theoretical engineering concepts to practical product engineering, emphasizing the societal, environmental, and ethical considerations associated with the engineering profession. The event provided students with a holistic perspective on the journey from theoretical knowledge to real-world applications in the field of engineering and product development.

ABC's of Journal Publications

February 12, 2021

On February 12, 2021, the collaborative efforts of the Student Association "GNAANA" and ISTE culminated in an enlightening session named "ABC's of Journal Publications." Mr. J. Sam Suresh, an esteemed Assistant Professor within the Electronics and Communication Engineering Department at Builders Engineering College in Kangayam, led the session. Its primary aim was to target Program Outcomes 8 (Ethics) and 10 (Communication) by imparting invaluable insights into the intricacies of academic journal publishing. Mr. Sam Suresh, drawing from his extensive expertise, elucidated ethical considerations inherent in academic writing and elucidated effective communication strategies crucial for successful research dissemination. This event served as a platform for participants to garner a comprehensive understanding of the core elements pivotal for achieving success in journal publications. Moreover, it played a pivotal role in refining their ethical discernment and communicative prowess, both essential facets in navigating the realms of academia and the professional sphere. By emphasizing these critical aspects, attendees were better equipped to contribute meaningfully to their respective disciplines while upholding the highest standards of integrity and clarity in their scholarly endeavors.



Department of ECE
Invites you all for a seminar on....
"ABC's of Journal Publications"
By
Mr. J. Sam Suresh J
AP/ECE
Friday-12.02.2021
2.00 PM-3.00PM
Venue: DC Hall

ABC's



Motivational Speech for Young Students

February 26, 2021

During the academic year 2020-21, precisely on February 26, 2021, the Student Association "GNAANA" partnered with ISTE to orchestrate a compelling session entitled "Motivational Speech for Young Students." This event showcased Mr. Prasanth, the DevOps Lead at Exterro R and D in Coimbatore, as the esteemed guest speaker. The overarching goal of the session was to cater to Program Outcomes 10 (Communication) and 12 (Life-long Learning) by delivering an uplifting discourse tailored for young learners. Mr. Prasanth adeptly shared insights, words of encouragement, and invaluable life lessons, intending to instill effective communication skills and foster a mindset of perpetual growth among the attendees. By offering a wellspring of motivation and direction, the event served as a beacon for participants embarking on their academic and professional odysseys, equipping them with the resilience and inspiration needed to surmount challenges and embrace a journey of continual self-improvement.



Job Opportunities in PCB Design

March 5, 2021

On March 5, 2021, the collaborative efforts of the Student Association "GNAANA" and ISTE resulted in the organization of an insightful session entitled "Job Opportunities in PCB Design." The session, spearheaded by Mrs. G. Vijayakumari and Mr. T. Velmurugan, Assistant Professors in the Electronics and Communication Engineering Department at Builders Engineering College in Kangayam, aimed to address Program Outcomes 10 (Communication) and 12 (Life-long Learning) by offering guidance on augmenting circuit design skills.

Mrs. Vijayakumari and Mr. Velmurugan shared a wealth of practical insights, tips, and strategies aimed at enhancing participants' proficiency in circuit design. The overarching objective of the event was to inspire students to communicate their design concepts effectively while fostering a dedication to continuous learning within the ever-evolving realm of electronics. By providing a platform for skill enhancement and knowledge dissemination, the session empowered participants to navigate the intricacies of PCB design with confidence and adaptability, thus better preparing them for future opportunities in the field.

Intellectual Property Rights

March 23, 2021

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
In Association with
INSTITUTION OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING (IETE)

Organizes Workshop on
INTELLECTUAL PROPERTY RIGHTS
(IPR)



Guest Speaker
Dr. P. PONMURUGAN
Associate Professor/EEE &
Head -Research & Development,
Sengunthar Engineering College, Tiruchengode.

Vision: To be an updated technocrat in the field of
Electronics and Communication Engineering.
Mission: Preparing rural students for successful career
through creative thinking and knowledge application.

Date : 23.03.2021
Time : 2.00 pm - 4.00 pm
Venue : DC Hall

All are Invited

BUILDERS ENGINEERING COLLEGE
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
(An ISO 9001:2008 Certified Institution | Accredited with B++ Grade by NAAC)
Nuthakudiyur, Kanyakumari, Tirupur - 630 108, Tamilnadu.

During the academic year 2020-21, on March 23, 2021, the collaborative efforts of the Student Association "GNAANA" and IETE culminated in a workshop centered on Intellectual Property Rights (IPR). Dr. P. Ponmurugan, an Associate Professor in the Department of Electrical and Electronics Engineering, and the head of Research and Development at Sengunthar Engineering College in Tiruchengode, spearheaded the workshop. The primary focus of the event was to address Program Outcome 8, elucidating the ethical principles and obligations surrounding intellectual property rights within the engineering domain. Through Dr. Ponmurugan's expertise, participants delved into the critical aspects of protecting and managing intellectual property, gaining a profound understanding of its significance in both academic and professional contexts. The workshop served as a platform for attendees to navigate the complexities of IPR, equipping them with the knowledge and ethical considerations necessary to navigate the landscape of innovation responsibly. By fostering awareness and comprehension, the event played a pivotal role in shaping participants' perspectives on intellectual property and its implications in the realm of engineering.

JOURNALS

Name of the Author	Title of the Article	ISSN No.	Name of the Journal
Mr. M. Prakash Ms. R. Nandhini Ms. M. Nivedha Mr. M. Deepan	Low Power Mantissa Multiplier Design in Posit Multiplier	ISSN 2455-9288	Advanced Science and Engineering Research (IJASER)
Prof. M. Shanmugham Miss. G. Abitha Miss. V. Bharathi Mr. R. Gnanaprakash	Automatic Monitoring System for Dementia Patient Using LoRA Module	ISSN (Online) 2456 - 5717	Advanced Research in Basic Engineering Sciences and Technology (IJARBEST)
Mr. S. Mahendran Ms. A. Haripriya Mr. S. Rohith Ms. J. Sahaya Caroline	Observation of Solar System Direction and Appliances in Home Through IoT	ISSN 2455 - 9288	Advanced Science and Engineering Research (IJASER)

CONFERENCES ATTENDED

Mr. S. D. Vijayakumar “Micro-controller based home automation for disabled person using gesture and voice recognition” National Web Conference on Challenges and Innovation in Engineering & Technology 2021 (NWCCIET 21).

Mrs. G. Vijayakumari “Smart Defense Rover for Military Applications” National Web Conference on Challenges and Innovation in Engineering & Technology 2021 (NWCCIET 21).

Mr. T. Velmurugan “An Autonomous Helmet-Bike with Alcoholic Drive Curtailment” National Web Conference on Challenges and Innovation in Engineering & Technology 2021 (NWCCIET 21).

Mr. M. Shanmugham “Track and Rescue System of Dementia Patient Using LoRa Module” National Web Conference on Challenges and Innovation in Engineering & Technology 2021 (NWCCIET 21).

Mr. M. Prakash “Low Power Mantissa Multiplier Design in Posit Multiplier” 10 International Conference on Advanced Science and Engineering Research – 2021 (ASER – 2021).




Mr. M. Shanmugham “Automatic Fall Detection and Monitoring System for Dementia Patient Using LoRaModule” National Web Conference on Advances in Science, Engineering and Technology 2k21 (NCASET2k21).

Mr. M. Prakash “Low Power Mantissa Multiplier Design in Posit Multiplier” Virtual National Conference on Recent Advances in Communicative Electronics (NCRACE 2021).

Mr. M. Shanmugham “Automatic Monitoring System for Dementia Patient Using LoRa Module” International E-Conference on Recent Developments in Engineering & Technology (ICRDET'21).

Mrs. G. Vijayakumari “Microcontroller Based Home Automation for Disabled Persons Using Gesture and Voice Recognition” 7 National Conference on Emerging Trends in Engineering and Technology.

NPTEL ACHIEVEMENT

Name of the Faculty	Title of the Paper	Certificate
Ms. G. Vijayakumari	Electromagnetic Waves in Guided and Wireless Media	
Mr. M. Prakash	Microprocessors & Microcontrollers	
Ms. V. Manimala	Electromagnetic Waves in Guided and Wireless Media	

STUDENTS WORKSHOP ATTENDED

Date	Faculty Name	Title of the programme	Institution
16.04.2021	Ms. G. Harini	Programming Essentials in Python	Cisco Network Academy
18.04.2021	Ms. T. Divya	Advanced Excel	JS Academy
25.04.2021	Ms. J. Saranya	Advanced Excel	JS Academy
03.05.2021 to 07.05.2021	Ms. G. Harini	Master Class on Electric Vehicle Design using MATLAB	Pantech Pro Labs India Pvt. Ltd.
03.05.2021 to 07.05.2021	Mr. P. Ashokkumar	Master Class on Electric Vehicle Design using MATLAB	Pantech Pro Labs India Pvt. Ltd.
03.05.2021 to 07.05.2021	Mr. K.B. Kaviyarasu	Master Class on Electric Vehicle Design using MATLAB	Pantech Pro Labs India Pvt. Ltd.
03.05.2021 to 07.05.2021	Mr. S. Prasanth	Master Class on Electric Vehicle Design using MATLAB	Pantech Pro Labs India Pvt. Ltd.
18.05.2021	Mr. V. Anandhan	Python	App in technology lab
26.05.2021	Ms. T. Divya	Chatbot Design	Pantech Pro Labs India Pvt Ltd
26.05.2021 to 28.05.2021	Mr. P. Ashokkumar	Chatbot Design	Pantech Pro Labs India Pvt Ltd
26.05.2021 to 28.05.2021	Mr. K.B. Kaviyarasu	Chatbot Design	Pantech Pro Labs India Pvt Ltd
26.05.2021 to 28.05.2021	Mr. S. Prasanth	Chatbot Design	Pantech Pro Labs India Pvt Ltd
03.05.2021 to 07.05.2021	Ms. J. Saranya	Master Class on Machine Learning	Pantech Pro Labs India Pvt Ltd

SEMINAR ATTENDED

Date	Faculty Name	Title of the programme	Institution
16.04.2021	Ms. A. Indhumalini	Python in ML	Jai Shriram Engineering College
16.04.2021	Ms. T. Indhumathi	Python in ML	Jai Shriram Engineering College
16.04.2021	Mr. K. Gokulakannan	Python in ML	Jai Shriram Engineering College
16.04.2021	Ms. G. Harini	Python in ML	Jai Shriram Engineering College

EVENTS ATTENDED

Date	Faculty Name	Title of the programme	Institution
10.02.2021	Mr. S. Naveenkumar	Quiz	Annamalai University
10.02.2021	Ms. M. Sindhiya Ms. V. Sountharya	National Quiz	Kongu Engineering College
06.05.2021	Ms. M. Sindhiya	Quiz Contest	Shri Venkateshwara Arts & Science College
10.05.2021	Ms. C. Shanmuga Priya	Intercollege Quiz	B.S.A. Crescent Institute of Science and Technology

FACULTY PARTICIPATION

Date	Faculty Name	Title of the programme	Organized by
22.03.2021	Mr. V. Kumar	Reuse and Recycling of Water Management	Velalar College of Engineering and Technology, Erode
22.03.2021		Value of Water	Sengunthar Engineering College (Autonomous), Tiruchengode
27.05.2021		Cyber Security - Need of the hour	Sengunthar Engineering College (Autonomous), Tiruchengode
29.05.2021		IoT Sensors with Cloud Logging	Hindusthan Institute of Technology, Coimbatore
20.05.2021		Research Opportunities in Biomedical Engineering	Hindusthan Institute of Technology, Coimbatore
21.05.2021		Emerging Research Areas of Heterogeneous Network in Wireless Communication	Hindusthan Institute of Technology, Coimbatore
27.05.2021		IQAC the Linchpin of Higher Educational Institution	Arjun College of Technology, Coimbatore
31.05.2021		Ad hoc and Wireless Sensor Networks	PSNA College of Engineering & Technology, Dindigul

Date	Faculty Name	Title of the programme	Organized by
15.02.2021	Mr. V. Kumar	Recent Trends on Metamaterial Antennas for Wireless Applications and Deep Learning Techniques	National Institute of Technology, Tiruchirappalli
05.04.2021	Mr. T. Velmurugan	Reserach opportunites and recent trends in Iot and WSN	Bangalore Institute of Technology
15.02.2021		Recent Trends on Metamaterial Antennas for Wireless Applications and Deep Learning Techniques	National Institute of Technology, Trichy
24.05.2021	Mr. U. Rajasekaran	EC 8351 - Electronic Circuits I	Madras Institute of Technology
20.01.2021	Mr. M. Prakash	Two Days Workshop On System Verilog Design & Verification For Beginners Using EDA Tools	Vel Tech Rangarajan Dr. Sagunthala R & D Institute of Science & Technology, Chennai
25.01.2021		FDP on Real Time Iot Applications Using Node Mcu & Raspberry Pi Controllers	Vel Tech Rangarajan Dr. Sagunthala R & D Institute of Science & Technology, Chennai
06.02.2021		Intelletual Property Rights & IP Management For Start Up	SRM Institute of Science & Technology, Ramapuram Campus
06.02.2021		FDP on Artificial Intelligence & Cyber Security	Karpaga Vinayaga College of Engineering & Technology, Palladam
15.02.2021		SPARC Sponsored Two Week Online Workshop on Recent Trends on Metamaterial Antennas For Wireless Applications And Deep Learning Techniques	National Institute of Technology, Trichy
06.02.2021		One Day National Level Workshop On Research Methodology	Dept. of English, Muktanand College, Gangapur
01.03.2021		One Day National Level Workshop On Research Methodology	Dept. of English, Muktanand College, Gangapur
15.03.2021		TEQIP-III sponsored One Week Short Term Course on Modern Wireless Communication Systems & Antenna Engineering with experimental Learning	Dept. of ECE, NIT, Sikkim
15.03.2021		Indo-us Vajra Course On Fundamentals Of Electromagnetics Emf-2021	National Institute of Technology Silchar (India), Jawaharlal Nehru University Delhi (India) & California State University Northridge (USA)
22.03.2021		Technical Lecture on Reuse & Recycling of Water Management in the View of World Water Day	IEI-ELC In Association with Dept. Civil Engineering, Velalar College Of Engineering & Technology
25.03..2021		Online Seminar on How to Publish a Research Paper	K. Ramakrishnan College of Technology, Trichy
25.03..2021		Low Power Mantissa Multiplier Design in Posit Multiplier	NCRACE 2021, SRM TRP Engineering College, Trichy
29.03.2021		Low Power Mantissa Multiplier Design in Posit Multiplier	10th ICASER – 2021 (ASER – 2021)
05.04.2021		International Webinar Series on Recent Opportunities & Recent Trends In IOT & Wsn	Dept. ETE in Association with Internet Society & Eaktech Pvt. Ltd.
24.05.2021		EC 8351 – Electronic Circuits - I	Madras Institute of Technology, Anna University, Chennai

Date	Faculty Name	Title of the programme	Organized by
15.02.2021	Ms. G. Vijayakumari	Recent Trends on Metamaterial Antennas for Wireless Applications and Deep Learning Techniques	National Institute of Technology, Tiruchirappalli
15.02.2021	Mr. R. Praveenkumar	Two Week Online Workshop on Recent Trends on Metamaterial Antennas for Wireless Applications and Deep Learning Techniques	Online Medium
22.03.2021		Value of Water in view of World Water Day	Sengunthar Engineering College (Autonomous), Tiruchengode
20.05.2021		Research Opportunities in Biomedical Engineering	Hindusthan Institute of Technology, Coimbatore
27.05.2021		Cyber Security - Need of the hour	Sengunthar Engineering College (Autonomous), Tiruchengode
15.02.2021	Ms. V. Manimala	Recent Trends on Metamaterial Antennas for Wireless Applications and Deep Learning Techniques	NIT, Trichy
30.04.2021		Terahertz Communications at 300 Ghz: Devices, Packages, & System	IEEEAP Section

STUDENTS CORNER

Extended Reality (XR): Unveiling the Immersive Tapestry of Our Digital World

by **Mr. S. Naveenkumar, Dept. of ECE**

In the ever-evolving landscape of technology, a fascinating realm known as Extended Reality (XR) has emerged, redefining how we interact with and perceive the digital and physical worlds. XR is an umbrella term encompassing Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR). Each facet of XR adds a layer of immersive experience, blurring the lines between what is real and what is virtual. This article delves into the multifaceted dimensions of Extended Reality, exploring its applications, challenges, and the profound impact it has on industries and daily life.



Extended Reality (XR) encompasses Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR), offering diverse experiences across industries. VR immerses users in digital environments, while AR overlays digital information onto the real world, enhancing retail, navigation, and education. MR merges virtual and real-world content, enabling interactive experiences like design and training.

In gaming, VR provides immersion, AR enhances mobile gaming, and MR enables interactive storytelling. In education, XR facilitates immersive learning and training simulations. In healthcare, VR aids therapy, AR assists surgeons, and MR enhances medical education.

Challenges include technical hurdles, user comfort concerns, content creation standards, and ethical considerations.

In conclusion, XR offers immersive experiences, blurring physical and digital boundaries, revolutionizing industries and societal interactions. As technology evolves, XR's impact grows, promising a future where reality and virtuality harmonize. Despite challenges, the journey through VR, AR, and MR landscapes continues, creating a harmonious blend of the physical and digital realms.