



Vision of ECE Department

To produce skilled, socially –sensitized and globally competitive professional engineering graduates in the area of Electronics and Communication Engineering.

Mission of ECE Department

1. To provide quality and contemporary education through innovative teaching-learning process and effective resource utilization.
2. To develop responsive and socially sensitive engineer through research oriented practices.
3. To promote industrial collaboration for providing practical exposure leading to industry ready engineering graduates.
4. To open new vistas of learning for students through international collaborations.
5. To provide conducive environment through pre placement training and professional development activities for providing ample opportunities of placements, higher studies and entrepreneurship.

Program Educational Objectives (PEOs)

PEO1: Analyze and solve real life problems using advanced scientific and engineering expertise.

PEO2: Exhibit contemporary and multidisciplinary knowledge as per industrial needs with an ability to work effectively in a team.

PEO3: Acquire sustainable technological development and handle related societal issues.

PEO4: Excel in professional career and engage in lifelong learning to nurture holistic development by imbining ethics and human values.

TWO DAYS FACULTY TRAINING CERTIFICATION PROGRAM ON AI AND ML TOOLKIT IN RESEARCH ON 28TH JULY 2021

Department of Electronics and communication in collaboration with EESPL, IETE & IIC council of Chandigarh engineering college organized a two days FTCP on AI and ML Toolkit in Research Application. Dr. S. C. Jain , Chairman IETE inaugurated the FTP and addressed the gathering via zoom platform. Mr. Gurmeet Sharma, COO (Chief Operating Officer), EESPL, Mohali. He covered the topics like Intelligence Evolution Human Intelligence to Artificial Intelligence, AI and Its Impact in Different Engineering Areas, Machine Learning (Realtime AI Implementation Platforms), Importance of Data, Data Science in Artificial Intelligence, Learning Curve to AI. On the second day of FTCP, Mr. Deepak Kumar, Project Head R&D, EESPL, Mohali delivered the talk. He demonstrated many Tools, Technologies and Skill Set Requirements for AI , Programming Language tools and Various Libraries, NumPy, Pandas, Statistics Tools, Different Visualization Libraries, Data Science Algos and Regression Techniques, Deep Learning Libraries Keras and Py-Torch. Almost 80 attendees from various institutes of repute marked their presence in the FTCP.



ELECTRIC FLASH

VOLUME -6, ISSUE -1, JULY-SEPTEMBER 2021



WEBINAR ON “BIOPRINTING TECHNOLOGY-CURRENT AND FUTURE SCENARIOS” ON 9TH AUG 2021

To explore emerging integrated technologies and its applications in multidisciplinary environment, Electronics and Communication Engineering Department, Chandigarh Engineering College, Landran organized Webinar on “Bioprinting Technology-Current and Future Scenarios” in association with Next Big Innovations Labs. The resource persons for the webinar were-Mr. Piyush Padmanabhan, Co-CEO and Co-Founder of NBIL and Ms. Ankita Gupta, Bioprinting Engineer, NBIL. The participants gathered knowledge about 3D Bioprinting Technology, 3D bioprinting strategies for medical image, 3D bioprinters, its scope in R & D, Integration with Artificial Intelligence and Machine Learning and Indian Academia in Bioprinting Research. A total of 96 participants from 11 states of India- Punjab, Himachal Pradesh, Karnataka, Tamil Nadu, West Bengal, Telangana, Jammu & Kashmir, Andhra Pradesh, Haryana, Madhya Pradesh, Uttar Pradesh registered and attended the webinar. One International Participant from Lilongwe, Malawi, Africa also registered and attended the webinar.





3RD INTERNATIONAL CONFERENCE ON INNOVATIONS IN COMMUNICATION, COMPUTING AND SCIENCES (ICCS-2021) FROM 27TH AUG-28TH AUG 2021



Two days International Conference on Innovations in Communication, Computing and Sciences (ICCS-2021) and International Conference on Contemporary Advances in Mechanical Engineering (ICCAME-2021) organized by Department of ECE and ME marked its beginning with the enlightening inaugural ceremony on 27th August, 2021 in online mode. The inaugural session started with the virtual lamp lightening by Prof.(Dr.) M.P Poonia, (Chief Guest, Vice Chairman, AICTE), Mr. Surinder Singh (Guest of Honour, Distinguished Scientist and Director, Semi- Conductor Laboratory, Department of Space, GoI), Prof.(Dr.) Inderdeep Singh (Guest of Honour, Head of Department of Design and Coordinator, Design Innovation Center, (IIT Roorkee), Prof. S. S. Walia (Guest of Honour, Director IRC UHVE & Finance Officer, IKGPTU, Kapurthala), Prof. (Dr.) Byung-Gyn Kim (Keynote Speaker, Sookmyung Women's University, Seoul, South Korea), Prof. (Dr.) Wahyu Caesarendra , (Keynote Speaker, Faculty of Integrated Technologies, University Brunei Darussalam), Prof.(Dr.) Arun Ashok (Keynote Speaker, Juelich Research Centre, Germany), Prof. (Dr.) P. N. Hrisheekesha (Campus Director, CGC Landran), Prof. (Dr.) Rajdeep Singh (Director Principal, CEC), Prof. (Dr.) Vinay Bhatia (HoD, ECE) and Prof. (Dr.) Rajesh Sharma (HOD, ME). This conference witnessed significant participation from academicians, researchers as well as experts from industry. Chief Guest, Prof. (Dr.) M. P. Poonia emphasized on student empowerment and industry-oriented curriculum to enhance the technical skills of the students. Guest of Honour, Mr. Surinder Singh discussed about recent trends in communication using quantum computing and neuron computing. Guest of Honor, Prof. (Dr.) Inderdeep Singh focused on translation of fundamental research into actual model. Guest of Honor, Prof. (Dr.) S. S. Walia emphasized on multidisciplinary approach for research-based outcomes. The keynote speaker, Prof. (Dr.) Byung-Gyn Kim talked about challenges and opportunities in AI based Emotional Intelligence. Prof. (Dr.) Wahyu Caesarendra, Keynote Speaker, talked about contact-based learning and its significance. The Keynote speaker, Prof. Arun Ashok talked about parameters of communication



system like noise figure, linearity, sensitivity etc. and their impact on advanced communication research. Prof. (Dr.) P.N. Hrisheeksha congratulated the departments for organizing innovative and research-oriented conference and guided to conduct integrated research in future. The second day of ICCS 2021 started with the keynote address by Prof. (Dr.) Manish Kumar Hooda on Indian Space Transportation Systems in present and future scenarios. The second keynote speaker of the day, Dr. S. K. Vishvakarma discussed about research in Edge Artificial Intelligence computing.

Total of 60 Papers were presented by authors from reputed Institutes and Universities like Amity University Noida, YMCA Faridabad, NIT Kurukshetra, GB Pant University, New Delhi, IP University Delhi, DCRUST Murthal, Thapar University, MM University, Chitkara, Jaganath University Delhi, NITTR, MAIT Delhi, and many more. The Track-1 on “Applied Mathematical and Computational Algorithms for Smart Systems” and Track-3 on “Physics of Communication & Signal Processing” chaired by Prof. (Dr.) Vikram Bali, JSSATE, Noida and Prof. (Dr.) S.S. Sengar, Federal TVET Institute, Addis Ababa, Ethiopia were conducted on Day 1.

The two technical sessions on “Advanced and Applied Sciences” and “Engineering for Robotics & IoT” were chaired by Dr. Dushyant Gupta, Kurukshetra University, Haryana and Dr. Paras Chawla, Associate Dean (Engineering), Chandigarh University, Punjab, respectively were conducted on Day 2.

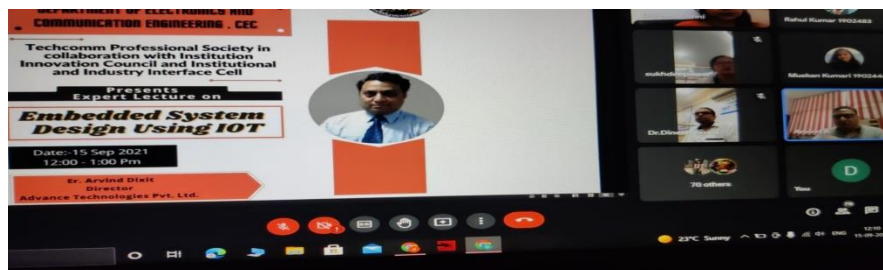
The ECE Department also organized Poster Presentation Competition in which students of different semester participated and highlighted their innovative ideas on Block Chain, Artificial intelligence, Augmented Reality, etc. through poster designs.

The Chief Guest for the valedictory session, Dr. Sudeb Das Gupta, Head ECE, IIT Roorkee, congratulated for organizing two conferences and praised about the quality of the selected papers. The Guest of Honor, Prof. Hafiz Muhammad Ali, King Fahd University of Petroleum and Minerals, Saudi Arabia, also congratulated the organizers of the conference and encouraged for more such events to provide opportunity to the researchers and academicians to present their innovative ideas. Prof. (Dr.) P. N. Hrisheeksha thanked the Chief Guest and Guest of Honor and congratulated the whole team of ECE and ME department for the success of the conference. The participants from various colleges and universities also shared their valuable feedback regarding the conference. The winners of the Best Paper under each track and Poster Presentation event were also announced. Prof. (Dr.) Rajesh Sharma, HoD ME, and Prof. (Dr.) Vinay Bhatia, HoD ECE, expressed vote of thanks to all delegates, management and organizing committee.



Expert Lecture on Embedded System Design using IOT on 17th September 2021

An Expert talk was organized for B.Tech. Students of 3rd semester virtually via Google meet mode on the occasion of Engineers Day. The Guest Lecture was given by Er. Arvind Dixit of Advance Technology, Chandigarh on the topic Embedded system Design Using IOT. The speaker explained how Embedded system design technology is implemented using IOT, and it's worth taking it, as a career. The complete workflow and how to implement various projects on embedded design were explained. Latest development in embedded system & design technology in which the software development board like arduino , Raspberry Pie were discussed along with the microcontroller 8051 and PIC Controller . The use of Wireless projects in combination to Microprocessor & how interfacing was discussed with the students of ECE. The expert focused on the live session with the interfacing techniques which can be possible with the different processors /controllers. He also explained how embedded systems has revalorized the world in the field of electronics, and how along with microprocessor various applications and projects can be made possible and can become smart after combining with IOT Technology. He taught students how to develop real time application based good projects using embedded design & technology.



RECENT TRENDS- WEARABLE TECHNOLOGY

For the past two decades, wearable technology trends have evolved significantly. Smart wearable devices are now equipped with sensors and are often connected to the Internet and the cloud. That wasn't always the case, as the first Bluetooth headset was sold in the year 2000, bringing a lot of excitement. In 2022, device usage is projected to grow to 1.1 billion users. Many of these devices will use 5G as their protocol of choice. According to Allied Market Research, the smart watches segment is predicted to rise at the highest pace, with a CAGR of 19.9%. The health and sports segment led the wearable technology trends with over 39 % market share in 2015, and this is expected to continue during the forecast period (2015-2022). During the projected span, however, the entertainment market is expected to expand at the fastest rate of 35.7%. In addition to health, sports, and entertainment, wearable technology has one even more important function:



saving lives. Tim Cook presented a couple of videos he'd got from Apple Watch users at a recent Apple gathering. These consumers praised the Apple Watch for detecting their health issues and encouraging them to see a doctor, which was crucial to saving their lives. Both Fitbit and Huami make watches with built-in thermometers that can monitor the increase in body temperature that also occurs as people get sick with viruses. In addition to informing someone that they should consider keeping away from other individuals for a few days, the aggregated data gathered from these devices can aid epidemiologists in tracking the spread of a virus across communities and, in the future, may aid in the containment of outbreaks before they become global pandemics.

SCI/SCIE PUBLICATIONS AND BOOK CHAPTERS

Many of our Faculty members have published research papers in SCI and SCIE Journals and published book chapters

- Dr. Sukhdeep Kaur, Dr. Vinay Bhatia and Kuldeep Sharma” Design and Simulation of Capacitive MEMS Switch for Ka Band Application” International journal of Wireless communication and Mobile computing/Hindawi .
- Dr. Simarpreet Kaur, “Security enhancement of 2-D DIM codes using 4×1 NOR logic based on FISO” International Journal of Optical and Quantum Electronics-Springer.
- Dr. Mohit Srivastav and Dr. Simarpreet Kaur, “Hybrid Local-Global Optimum Search using Particle Swarm Gravitation Search Algorithm (HLGOS-PSGSA) for Waveguide Selection”, IEEE Access.
- Dr. Mohit Srivastav -Book Chapter: “Pre and Post Filter Selection for Image Segmentation” in the Book Titled as "Intelligent Circuits and Systems", CRC (Taylor & Francis), (Accepted and In press) 2021, ISBN- 9781003129103.
- Dr. Parveen Singla – published a Book chapter in the Book Titled as “ High-k Materials in Multi-Gate FET Devices” and “Computational Technologies in Materials Science” with CRC Press, Taylor and Francis Group, US publishing agency. (Accepted and In press) 2021, ISBN - 978-0-367-63968-6 and 978-0-367-64057-6.

PATENTS FROM ECE DEPARTMENT

- Automated C-19 Door lock with person Counter.
- Intelligent moving stand for mopping with smart cap for maids.
- Audio Video Smart Security.
- Double Compressor Oxygen Concentrator.



FACULTY ACHIEVEMENTS

- Dr. Vinay Bhatia was awarded with best Head Of Department of CEC and special achievement award.
- Dr. Sukhdeep Kaur ,Dr. Pooja Sahni ,Dr. Simarpreet Kaur, Dr. Ankur Singhal,Dr. Mohit Srivastava ,Dr. Dinesh Arora,Dr. Bhawna and Ms. Ramandeep kaur were awarded with special achievement award.
- Ms. Preeti Bansal was awarded with special achievement award for completion of 10 years in CGC.
- Best Teacher award was bagged by Dr. Tarun Singhal.



STUDENT ACHIEVEMENTS

- Akash kumar(1902307), Aliek Mandal (1902310),Aditya kumar (1902304) and Ajay Kumar (1902306) of Batch (2019-2023) bagged first position in Technical Poster Presentation .
- Aman Akhatar 1902312: Completed Certification from Udemy “Java Programming: Complete Beginner to Advanced”

CHIEF EDITOR MESSAGE

This newsletter is intended to be published quarterly in a year. This inaugural issue is a brief account of the important events held from July to September 2021. It is expected that wide support for this mission will be provided through the reader's valuable suggestions and comments. This is only a small step towards a long journey. This issue of newsletter should inspire all of us for a new beginning enlighten with hope, confidence and faith in each other in the road ahead.

Chief Editor: Jagdeep Kaur
Student Editor :Mahima, Tarishi