Newsletter_2022

Department of Electronics and Communication Engineering Engineering

Message from HoD’s Desk

The Department of Electronics and Communication Engineering, established in 1981, is one of the most dynamic departments of Guru Nanak Dev Engineering College. It was the first major diversification initiative by the college, 25 years after its establishment. The department is currently running Bachelors and Masters of Technology courses in Electronics and Communication Engineering and has around 10 scholars enrolled for doctorate in areas like Antenna Design, VLSI, Optical communication etc. Ever since its inception, the department has been the hub of academic excellence through some great teachers who have laid a sound foundation as well as the cream of students of the region, who have spread their wings all over the globe. The alumni of the department are not only excelling in India but also in the Silicon Valley and other hubs of Electronics Technology. They are at the forefront of the Telecom revolution of the last 20 years and manning pivotal positions in Telecom operators in India, South East Asia, Pacific region and Africa. In the end, I can say that we incorporate good technical skills and knowledge to each individual associated with us.
Prof. Ameeta Seehra
Head of Department

Department at Glimpse

** The Department’s Entrance **

** The Department Office **

The Departmental Library

Faculty and Students during an Event

** Faculty during an Industrial Visit of First Year Students **

** One Day Workshop on Home Automation- IETE Students' Forum (ISF), GNDEC **

IETE Students' Forum (ISF), Guru Nanak Dev Engineering College, Ludhiana in association with Bharat Innovations. Organised a workshop named 'One Day Workshop on Home Automation – Convert your home into smart home' on November 30, 2021, 3:00 pm onwards. The workshop was organised to give students detailed information about Home Automation in a more practical way. Institution of Electronics and Telecommunication Engineers (IETE Students' Forum), Guru Nanak Dev Engineering College is thriven to deliver useful detailed information on various ongoing electronics innovations. Our PRO Jashanpreet kaur whole heartedly welcomed the speaker of the day, Raman Srivastav, Founder and owner of Bharat Innovations. Event was successfully managed by Convenor of our ISF society Harshit Singh. The event reached its peaks of success due to Dr. Munish Rattan (Coordinator, ISF), Prof. Shivmanmeet Singh (Faculty Incharge, ISF). Then Raman Srivastav Sir practically enhanced the skills of students by performing group tasks in home automation. The speaker was cordially honoured by Dr. Munish Rattan and Prof. Shivmanmeet Singh.

** Dr. Munish Rattan and Shivmanmeet Singh honouring the speaker **

Faculty Achievements

- Dr. Baljeet Kaur, Best paper Award for **Performance Analysis and Power Allocation with Joint Sharing in Hybrid Multicarrier based Cognitive Radio Network**, International conference, PSIT Kanpur, 16-17 December,2021.
- **Harminder Kaur** completed ""Virtual Discussion on National Web Series"" an online course authorized by NEP 2020 on 11 August,2021
- **Harminder Kaur** completed online webinar on **GaN on Silicon Front End Electronics in Advanced Microwave and Millimeter Wave for Space and Defence** on 26 August,2021(NITTTR)
- **Harminder Kaur** participated in one day workshop on **How to write research paper and report writing using LATEX** held on 17 June 2021 at Punjabi University, Patiala in technical collaboration with IEEE Chandigarh
- **Harminder Kaur** participated in an online webinar on **Applications of Texas Instruments Technologies** organised by ECE deptt GNDEC on 7 July 2021
- **Gurjot Kaur Walia** completed **NPTEL online course on "Innovation by Design"** from February-March, 2021
- **Chahat Jain** completed course by NPTEL on **" Innovation by Design"** from Feb-Mar'2021
- **Chahat Jain** got Best paper Award in **" International Conference on Emerging Technologies: AI, IoT and CPS for Science and Technology Applications"** held during Sept 6-7'2021 at NITTTR, Chandigarh
- **Navneet Kaur** completed online Coursera Course on **"Introduction to Machine Learning"**, completed on 28 May, 2021.
- **Navneet Kaur** completed online Coursera Course on **"Getting Started with AWS Machine Learning by Amazon Web Services"**, completed on 4 July, 2021.
- **Dr. Gurpurneet Kaur**, Completed **Ph.D., July, 2021, I.K.G.P.T.U, Jalandhar**
- **Navneet Kaur** completed online Coursera Course on **"Writing and Editing: Word Choice and Word Order"**, completed on 30 Nov,2021
- **Shivmanmeet Singh**, Reviewed two paper for ICCS 2021 named **" Investigations on Applicability of Modulation Formats in Coherent Optical Transmission" and "Impact of Data Augmentation on identifying Water bodies in Satellite Images"**

Publications

- **Narwant Singh Grewal**, A Review on Inter-Satellite Optical Wireless Communication System, 9th International Conference on Advancements in Engineering and Technology, (ICAET-2021)- BGIET, Sangrur, pp. 117-121, June 25-26, 2021 (ISBN: 978-81-924893-6-0).
- **Narwant Singh Grewal**, Design Of Square Shape Metasurface Antenna for 2.4 Ghz, 9th International Conference on Advancements in Engineering and Technology, (ICAET-2021)- BGIET, Sangrur, pp. 160-164, June 25-26, 2021 (ISBN: 978-81-924893-6-0)
- **Dr. Baljeet Kaur** ,Hybrid Sharing and Power Allocation using Waterfilling Algorithm for MIMO-OFDM based Cognitive Radio Network,ICTACT Journal on Communication Technology,UGC Care List,2021
- **Dr. Baljeet Kaur** ,Performance Analysis and Power Allocation with Joint Sharing in Hybrid Multicarrier based Cognitive Radio Network, international conference, PSIT Kanpur, 15-16 December.
- **Dr. Baljeet Kaur**, Machine Learning-based Security Solutions for Healthcare: An Overview, International Conference on Emerging

Technologies for Computing, Communication and Smart Cities (ETCCS-2021) organized by Baba Farid College of Engineering and Technology, Bathinda, Punjab, India on 21st & 22nd August.

- **Dr. Baljeet Kaur**, Security in Industrial control systems using Machine learning algorithm: An overview, 6th international conference on ICT for sustainable development, GOA, 5-6 August, 2021
- **Dr. Baljeet Kaur** ,Performance enhancement of 8 channel SCM-WDM based RoF link using Dispersion Compensation Technique,9th International Conference on Advancements in Engineering and Technology (ICAET-2021) June 25 – 26, 2021
- **Harminder Kaur** ,Localization in wireless sensor networks using improved DV-Hop algorithm, international research journal of engineering and technology. 3 March 2021.
- **Harminder Kaur** , Performance Enhancement of 8 channel SCM-WDM Based RoF link using dipersion compensation techniques. IEEE technically sponsored 9th International Conference June 25-26, 2021 Bhai Gurdas Institute and Technology Sangrur.
- **Gurjot Kaur Walia** presented a paper titled “Comparative Analysis Of Different Noises And Bayer Pattern On Image Demosaicing”, in International Conference on Recent Innovations in Science & Technology(RIST 2021), 19-20 June, 2021.
- **Gurjot Kaur Walia** presented a paper “Performance Analysis of kNN based Image Demosicing for variable window sizes”, in International Conference on Microelectronics and Telecommunication Engineering(ICMETE 2021), 26-27 September, 2021.
- **Gurjot Kaur Walia**, “Internet of Things: Assurance Provocation”, in International Conference on Emerging Technologies:AI, IOT, and CPS for Science and Technology Applications(ICET 2021), 6-7 September, 2021.
- **Gurjot Kaur Walia**, “Image Demosaicing: A Roadmap to Peculiarity Imaging”, in Turkish Journal of Computer and Mathematics Education, May, 2021.
- **“Navneet Kaur**, A Review Paper On Digital Watermarking Techniques, ““International Conference on Emerging Technologies:AI, IoT, and CPS for Science & Technology Applications, September 6- 7, 2021.
- **Navneet Kaur**, Impact of Fin Aspect ratio (Tk /Lg) on FinFET Characteristics using Compound gate Dielectrics, “International Conference on Emerging Technologies:AI, IoT, and CPS for Science & Technology Applications, September 6- 7, 2021.
- **Gurpurneet Kaur, Sandeep Singh Gill, Munish Rattan**, Lanthanum Doped Zirconium Oxide (LaZrO2) High-k Gate Dielectric FinFET SRAM Cell Optimization, Transactions on Electrical and Electronic materials, March, 2021, https://doi.org/10.1007/s42341-021-00296-2
- **Gurpurneet Kaur, Sandeep Singh Gill, Munish Rattan**, Whale Optimization Algorithm Approach for Performance Optimization of Novel Xmas Tree-Shaped FinFET, Silicon, April, 2021,https://doi.org/10.1007/s12633-021-01077-5
- **Gurpurneet Kaur, Dr.Sandeep Singh Gill, Dr. Munish Rattan and Dr. Navneet Kaur**, Impact of Fin Aspect ratio (Tk /Lg) on FinFET Characteristics using Compound gate Dielectrics,International Conference on Emerging Technologies: AI, IoT and CPS for Science & Technology Applications, Department of Electronics & Communication Engineering and Electrical Engineering, National Institute of Technical Teachers Training and Research (NITTTR) Chandigarh (Ministry of Education, Govt. of India),06-07 September, 2021
- **Chahat Jain**, “ Experimental Investigation of a flexible 3D Ring resonator for Bluetooth Applications”, International conference on Emerging Technologies: AI, IoT and CPS for Science & technology Applications”, Sept 6-7, 2021, http://ceur-ws.org/Vol-3058/Paper-081.pdf.
- **Chahat Jain**, ““Development of Rectangular Patch Antenna on Primary Recycled ABS Substrate Using Additive Manufacturing for Wireless Communication Applications””, Reference Module in Materials Science and Materials Engineering,Dec16,2021 https://doi.org/10.1016/B978-0-12-820352-1.00229-7.
- **Chahat Jain**, “ Flexible and Wearable Patch Antennas Using Additive Manufacturing: A Framework”, Reference Module in Materials Science and Materials Engineering,9 June 2021, https://doi.org/10.1016/B978-0-12-820352-1.00093-6
- **Harsimranjit Singh Gill**, et al., “Metaheuristic Algorithms for Big Data Analytics within the Internet of Things”, Wireless Communications and Mobile Computing, Vol. 2021, Article ID 7147940, 2021.
- **Harsimranjit Singh Gill**, et al., ““Localization in Wireless Sensor Networks Using Improved DV-Hop Algorithm””, International Research Journal of Engineering and Technology, Vol. 8, No. 03, Mar., 2021.
- **Harsimranjit Singh Gill**, et al., “Chaos-based joint speech encryption scheme using SHA-1”, Multimedia Tools and Applications, Vol. 80, pp. 10927-10947, Jan., 2021.
- **Shivmanmeet Singh**, A review on inter satellite optical wireless communication system”, “ 9th International Conference on advancement in Engineering and Technology” on 25-26 June 2021
- **Supriya Sharma, Gurpurneet Kaur and Harminder Kaur**, Crow Search BEENISH Routing Protocol to Increase the Lifetime and Stability of Nodes in WSN, International Conference on Emerging Technologies: AI, IoT and CPS for Science & Technology Applications, Department of Electronics & Communication Engineering and Electrical Engineering, National Institute of Technical Teachers Training and Research (NITTTR) Chandigarh (Ministry of Education, Govt. of India), 06-07 September, 2021

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Events Organized (FDPs/Conferences/STCs/SDTs/Workshops/Webinars etc.)

Sr. No.	Name of Event	Faculty Coordinator	Duration	Date(s)	Sponsor(s)

1	One week faculty development programme on " ICT initiatives in Technical Education"	Dr. Narwant Singh Grewal, Prof. Lakhvir Singh Khana	Five days	08-02-2021 to 13-02-2021	TEQIP-III
2	FDP on "ICT Initiatives in Technical Education"	Dr.Navneet Kaur (Co-cordinator)	One week	8th-13th February, 2021	TEQIP-III
3	One Day workshop on "Hands-on-Training for Digital Teaching Aids" under SWAYAM-NPTEL Local Chapter	Dr.Navneet Kaur (Organizing Member)	One day	07-Jan-2021	TEQIP-III
4	Seminar on "Career Guidance"	Dr.Navneet Kaur	One day	25-November-2021	——
5	Webinar on "Applications of Texas Instrument Technologies"	Gurjot Kaur Walia	One day	07-Jul-21	EdGate Technologies, Bangalore
6	Webinar on "VLSI and its Real World Applications"	Gurjot Kaur Walia	One day	13-Aug-21	——
7	Webinar Series to mark Engineer's Day	Gurjot Kaur Walia	Three Days	13 September, 2021 - 15 September, 2021	——
8	Virtual session on Strategic IP and Innovation Management	Er. Simranjit Kaur. Dr. Arvind Dhingra	One Day	03-Apr-21	IPR Cell , STEP, PHDCCI
9	BRAIN STORM 2021	Prof. Shivmanmeet Singh	One Day	18 Feb 2021	IETE
10	TRICKS AND BRICKS 2021	Prof. Shivmanmeet Singh	One Day	15 April 2021	IETE
11	EV DRIVE	Prof. Shivmanmeet Singh	One Day	29 May 2021	IETE
12	WORKSHOP ON HOME AUTOMATION	Prof. Shivmanmeet Singh	One Day	30 November 2021	IETE
13	Skill Development Workshop on Information Security	Dr.Harsimranjit Singh Gill	Two Weeks	February 8 – 20, 2021	TEQIP-III under the NPIU program, "Train-the-Trainer",

Events Attended (FDPs/Conferences/STCs/SDTs/Workshops/Webinars etc.)

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute				
1	Gurjot Kaur Walia	ATAL-FDP on Personal Effectiveness	One week	5 January, 2021 - 9 January, 2021	Birla Institute of Technology, Mesra	2	Gurjot Kaur Walia	NPTEL-AICTE FDP on Innovation by Design	1/2 of one week
3	Gurjot Kaur Walia	FDP on NBA Accreditation and Examination Reforms	One Week	17 May, 2021 - 21 May, 2021	NITTTR, Chandigarh				
4	Gurjot Kaur Walia	ATAL-FDP on Recent Trends in Digital Image Processing	One Week	7 June, 2021 - 11 June, 2021	Poornima institute of Engineering and Technology, Jaipur				
5	Gurjot Kaur Walia	ATAL-FDP on Moral Values, Attitude and Workplace Behavior	One Week	27 July, 2021 - 31 July, 2021	GL Bajaj Institute of Technology and Management, Greater Noida				
6	Dr. Gurpurneet Kaur, Gurjot Kaur Walia, Harminder Kaur	Webinar on GaN on Silicon front-end electronics in advanced microwave and millimeter-wave systems for space and defence	One Day	26-August -21	NITTTR, Chandigarh				
	Gurjot Kaur								

7	Walia, Dr.Gurpurneet Kaur,Chahat Jain, Harminder Kaur Aulakh	QIP-STC on Visual Cognition	One Week	4 October, 2021 - 9 October, 2021	NITTTR, Chandigarh					
8	Gurjot Kaur Walia	Workshop on Funding Opportunities in Electronics Engineering	One Day	26-Nov-21	PEC, Chandigarh and IEEE Chandigarh Subsection					
9	Gurjot Kaur Walia	ATAL-FDP on ROAD: Response Effectiveness, Organizing Self, Attitudinal Shift, Decision Making	One Week	6 December, 2021 - 10 December, 2021	Girijananda Chowdhury Institute of Pharmaceutical Science, Guwahati					
10	Harsimranjit Singh Gill	NBA Accreditation and Examination Reforms	One Week	17 May, 2021 - 21 May, 2021	Curriculum Development Centre, NITTTR, Chandigarh					
11	Harsimranjit Singh Gill	Addressing FEC challenges on your next generation 800G desi	1 day	August 04, 2021	Keysight Technologies					
12	Harminder Kaur Aulakh, Harsimranjit Singh Gill	Recent Developments and Applications in Aerospace	One Week	22 Nov 2021 to 26 Nov 2021	Punajb State Aeronautical Engineering College					
13	Chahat Jain	ATAL FDP on Manufacturing and Characterization of 3D Printed Materials (MC3DPM-2021)	One Week	13 Dec 2021to 17 Dec 2021	NITTTR, Chandigarh					
14	Chahat Jain	Elementary FDP on “ 3D Printing & Design”	One Week	23 Aug 2021-27 Aug 2021	Murugappa Polytechnic College					
15	Chahat Jain	9th international conference on “ Advancements in Engineering & Technology”	2 Days	25 June 2021-26 June 2021	Bhai Gurdas Institute of Engineering & Technology, Sangrur (Punjab)					
16	Chahat Jain	AICTE tecognised FDP on “NBA Accreditation and Examination Reforms”	One week	17 May 2021-21 May 2021	NITTTR, Chandigarh					
17	Chahat Jain	One day seminar on” Quality Ecosystem Through NEP-2020”	One Day	26 October 2021	NITTTR, Chandigarh					
18	Dr.Gurpurneet Kaur	Online ATAL Faculty Development Programme on “Nanotechnology for Electronic and Photonic Devices (NanoDev-2021)”	One Week	July 12-16, 2021	Punjab Engineering College, Chandigarh (Deemed to be University)					
19	Dr Baljeet Kaur, Harminder Kaur, Shivmanmeet Singh	Webinar on VLSI and its real world applications	One Day	13-Aug-21	Guru Nanak Dev Engineering College, Ludhiana					

20	Shivmanmeet Singh	Seminar on Quality ecosystem	One Day	26 October 2021	NITTTR, Chandiagrh					
21	Gurpurneet Kaur, Harminder Kaur Aulakh, Shivmanmeet Singh	TEQIP-III sponsored FDP on “ICT initiatives in technical education”	One Week	8-13 February 2021	Guru Nanak Dev Engineering College, Ludhiana					
22	Harminder Kaur Aulakh	Professional Development Training (PDT)	One Week	March 01 - 06, 2021	Indian Institute of Management Kozhikode (Online)					
23	Harminder Kaur Aulakh	Applications of Texas Instrument Technologies	One Day	07 July 2021	ECE Department in collaboration with EdGate Technologies Pvt.Ltd.,Bangalore					
24	Narwant Singh Grewal	Workshop on Implementation of NEP-2020 for Quality Online and Open Distance Learning (ODL) Education	One Day	April 28, 2021	NITTTR, Chandigarh					
25	Narwant singh Grewal	One week FDP on Data Science and Big Data Analytics	One Week	July 26-31, 2021	IGCE Abhipur, Chandigarh					
26	Dr Baljeet Kaur, Harminder Kaur Aulakh	Next Generation Wireless Technologies: 5 G and beyond	One Week	12 July-17 July 2021	Indo Global College of Engineering, Abhipur New Chandigarh					
27	Narwant singh Grewal	NPTEL Online course on Design for Internet of Things	Eight Weeks	July 26-Sep. 17, 2021	NPTEL					
28	Harminder Kaur Aulakh	Webinar on “How to be industry ready”	One Day	September 13, 2021	ECE department GNDEC Ludhiana					
29	Harminder Kaur Aulakh	Webinar on “Portrayal of data analytics in industry”	One Day	September 14, 2021	ECE department GNDEC Ludhiana					
30	Harminder Kaur Aulakh	Webinar on “Embedded Systems”	One Day	September 15, 2021	ECE department GNDEC Ludhiana					
31	Dr. Gurpurneet Kaur	AICTE - ATAL sponsored FDP on “Future Perspective on Semiconductor Devices	One Week	21st to 25th June, 2021	Kalasalingam Academy of Research and Education					
32	Dr. Gurpurneet Kaur	AICTE-MRSPTU sponsored FDP/STTP on “IoT & its Applications”	One Week	February 15-20, 2021	Giani Zail Singh Campus College of Engineering & Technology-MRSPTU, Bathinda (Punjab)					
33	Dr.Gurpurneet Kaur	Online ATAL Faculty Development Programme on “VLSI -IP DESIGN Approach to SRAM compiler design”	One week	August 16-20, 2021	GM Institute of Technology					

34	Dr.Gurpurneet Kaur	Academy Online Elementary FDP on “Branding of Higher Education Institutes for Enhanced Outcomes”	One Week	September 13-17, 2021	National Institute of Technical Teachers Training & Research, Chandigarh					
35	Dr. Baljeet Kaur	Online Professional Development Training	3 days	1-3 March 2021	IIM Trichy					
36	Dr. Baljeet Kaur	“Emerging Trends in OFC Technology”AICTE Training And Learning (ATAL) Academy	1 week	2-6 August 2021	NITTTR, Chandigarh					

Expert Lecture delivered

- **Dr. Baljeet Kaur**, Radio on Fiber (RoF) &Passive Optical Networks (PONs), 05.08.2021,AICTE Training And Learning (ATAL) Academy Online Elementary FDP on ““Emerging Trends in OFC Technology”” from 02/08/2021 to 06/08/2021 at National Institute of Technical Teachers Training and Research (NITTTR) .
- **Dr. Baljeet Kaur**, Expert talk on short- term course (Online mode) on “Advances in OFC Technology” from 12-16 July 2021. NITTTR Chandigarh
- **Dr. Harsimranjit Singh Gill**, Networks and Standards of Multimedia Communication, 6th to 8th Jan., 2021 , Govind Ballabh Pant Institute of Engineering & Technology, Pauri Garhwal, Uttarakhand.
- **Dr. Harsimranjit Singh Gill**, “Information Security” at Guru Nanak Dev Polytechnic College, Ludhiana, 7 Dec., 2021.
- **Prof. Shivmanmeet Singh**, Lecture on Research papers, at GNDEC Ludhiana on 9th March 2021.

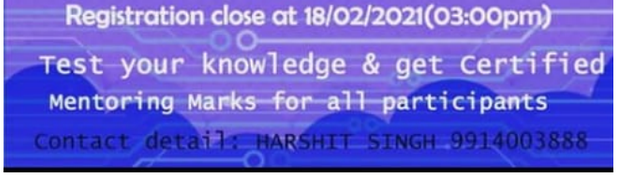
Student’s Corner

- Student’s Achievements

- **Jashanpreet Kaur**, secured 3rd position in the event Speak with Slides held from 6-9 May, 2021 organized during i-GNEz at Guru Nanak Dev Engineering College, Ludhiana.
- **Gurveer Kaur** participated in one week TEQIP-III sponsored student development programme (SDP) on “Students Learning and Skill Enhancement Through Interdisciplinary Interventions “
- **Jashanpreet Kaur**, got 2nd prize in Painting competition in Anand Utsav 2021.

IETE STUDENT FORUM

BRAIN STORM 2021



ISF organized a Machine Learning Quiz named “BRAIN STROM” on 18th of February, 2021. The event was organized under the guidance of:

- Prof. Shivmanmeet Singh (Faculty)ECE dept.
- Arshad Ali (Convenor) D4ECA1
- Co-Convenor: Sanu Kumar, Harshit Singh The organizers of this event were the following students:
- Shubhangi Aryan D4ECE
- Mani Raj Ranjan D2ECE
- Krishna Murari D2EE

TRICKS AND BRICKS APTITUDE

TRICKS AND BRICKS

IETE Students’ Forum (ISF) regularly organizes technical and non-technical events where students are given chance to showcase their talent and knowledge. The prime intent of this ISF is to enhance the students’ technical merit and implant the habit of deeper learning and research. With same vision, ISF organized a Fun-Techno event named “TRICKS AND BRICKS APTITUDE” on 15 th of April, 2021. The event was organized under the guidance of:

- Prof. Shivmanmeet Singh (Faculty) ECE dept.
- Arshad Ali (Convenor)
- Harshit Singh (Co-Convenor)

EV-DRIVE

IETE Students' Forum organized an event named “EV-DRIVE” on 29th MAY, 2021. A total of 240 students and faculty participated in the event. The event was organized under the guidance of:

- FACULTY ADVISOR Prof. SHIVMANMEET SINGH
- CONVENOR Mr. ARSHAD ALI
- EVENT HEAD Mr. REHAN DHIR
- SECRETARY Ms. SHUBHANGI ARYAN
- CO-CONVENOR Mr. HARSHIT SINGH