

Newsletter

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 Sehra
Head of Department

Department at Glimpse

- Webinar Lecture Series on “Information Security”

Dr. Harsimranjit Singh Gill(Coordinator)



Under the NPIU program, “Train-the-Trainer”, 4-week job-oriented training programme titled “Webinar Lecture Series on Information Security” sponsored by TEQIP-III was organized for the students of ECE, IT, and CSE from 02-11-2020 to 27-11-2020. The main aim of the training programme was to spread awareness and motivate students to learn, work, and contribute in the field of cyber security. Apart from discussion of theoretical concepts of information security, hands-on-training session were also conducted to comprehend the prominent areas of field.

- Project on “Automatic hand sanitizer dispenser”



Automatic sanitiser dispenser developed

LUDHIANA, AUGUST 1
Final year students of the electronics engineering (ECE) course of Guru Nanak Dev Engineering College (GNDEC) have developed an automatic hand sanitiser dispenser. Montekpal Singh, a final year student of ECE, said the sanitiser dispenser was inspired by ‘Make in India’ initiative with parts manufactured in local markets. The main features of the unit include its capability of

detecting the distance from a person's hand using sensors and microcontroller. It includes features such as easy refillable tank and smart-controlled spray system, which will allow the use of sanitiser without any wastage.

Prof Shivmanmeet Singh, said the sanitiser dispenser was built using sturdy material and its advanced features makes it more reliable as compared to those available in the market. —TNS

Innovation is a blast whenever it is utilized in a correct way. With such a vision in mind, our final year Student, Montekpal Singh, ECE Branch, have developed 'automatic hand sanitizer dispenser' for all of us keeping in mind the Covid-19 pandemic, under the guidance of ECE Faculty members. This project is capable of detecting and cleaning the person's hands with the use of sensors and microcontroller. Furthermore, it has features like easy refillable tank and smartly controlled spray system which permits the use of sanitizer efficiently without any wastage. Moreover, the system was tested vigorously for any problems and reliability issues. The project has successfully placed in college premises to benefit everyone with its service. Features include:

- All the components used in manufacturing of the Dispenser are made in India.
- The intelligent Dispenser is capable of detecting the distance from the person's hands with the help of IR sensors.
- Either in broad daylight or at night, the sensor is able to detect the presence of hands.
- It gives a beeping sound while running and stops after 2 seconds of spraying to save sanitizer use.
- The detachable tank makes refilling and cleaning very easy.
- Every possible problem that is present in the already available dispensers in the market like sanitizer dripping leakage, running because of sunlight glare on its own, all has been addressed in this project.

Faculty Achievements

- **Harleen Kaur** completed ""Python Basics"" an online course authorized by University of Michigan and offered through Coursera on 29 November, 2020.
- **Daljit Singh** qualified Java Level-1 Exam conducted on April 03, 2020, and Java Level-2 Exam conducted on April 13, 2020, by Cambridge Certification Authority (CCA).
- **Daljit Singh** completed Online Courses on Sololearn on April 13, 2020: Java Course, and two courses on Udemy on Aug 10, 2019: Learn to Program in Java Script and on March 31, 2020: Introduction to Python Programming.
- **Daljit Singh** completed Online Course on Coursera on April 20, 2020: Build Your First App (Project-Centered Course).
- **Daljit Singh** build triviamaster.000webhost.com Quiz Website using JavaScript, developed & designed Android App "Know Your Student: KYS" using Google's Android Studio, and completed "MATLAB Onramp" course on Mathworks on 17 Dec.2020.

Publications

- **Preeti Pannu**, "A Compact 2-Port Ultra-Wideband MIMO Antenna With Modified Ground Plane," Fourth International Conference on Inventive Systems and Control (ICISC), included in IEEE explore, pp. 553-557, 2020. DOI: 10.1109/ICISC47916.2020.9171054
- **Preeti Pannu**, "UWB-MIMO Antenna With Stop Band behavior and High Isolation", IEEE International Women in Engineering (WIE) Conference on Electrical and Computer Engineering (WIECON-ECE), 2020.(in print)
- **Shivmanmeet Singh, Narwant Singh Grewal** (2020), "A Review on Visible Light Communication", in Proceeding of 8th International Conference on Advancements in Engineering and Technology, (ICAET-2020)- BGIET, Sangrur, pp.- 88-93
- **Kaur H. , Narwant Singh Grewal** (2020), "Visible Light Communication Indoor Systems - An Overview", in Proceeding of 8th International Conference on Advancements in Engineering and Technology, (ICAET-2020)- BGIET, Sangrur, pp. 121-125
- **Navneet Kaur**, "Temperature Dependence of of Multi-fin FinFET for Bulk and SOI Substrate at 20nm Channel "Length", International Congress on Sustainable Development through Engineering Innovations at GNDEC, Ludhiana from 17-19 September, 2020
- **Navneet Kaur**, "Performance evaluation of various hybrid modulation techniques transmitted by EDFA in radio-over-fibre communication", Journal of Information and Telecommunication, 4:3, 295-313, DOI: 10.1080/24751839.2020.1732766
- **Kuldeepak Singh, Harsimranjit Singh Gill** , "Chaos-based joint speech encryption scheme using SHA-1". Multimedia Tools and Applications. <https://doi.org/10.1007/s11042-020-10223-x>
- **Gurpreet Kaur, Simranjit Kaur, B.S. Dhaliwal, Suman Pattnaik**, "Low-Cost Fractal MIMO Antenna Design for ISM Band Using ANN", Book Chapter- Advances in computational intelligence techniques, Springer, DOI: https://doi.org/10.1007/978-981-15-2620-6_15
- **Gurpurneet Kaur, Sandeep Singh Gill and Munish Rattan** (2020), "Design and Performance Analysis of FinFET Based SRAM Cell Stability", in Proc. Of Sustainable Development through Engineering Innovations (SDEI-2020), Ludhiana,India, Sept., 2020. [a part of book series Lecture note in Civil Engineering, springer)
- **Gurpurneet Kaur, Sandeep Singh Gill and Munish Rattan** (2020), "Whale Optimization Algorithm for Performance Improvement of Silicon-On-Insulator FinFETs", International Journal of Artificial Intelligence, Vol.18, number 1, pp.63-81, March, 2020
- **Gurpurneet Kaur, Sandeep Singh Gill and Munish Rattan** (2020), "Artificial Intelligence Based Nanoscale FINFET Device ", Journal of Seybold Report, Vol. 15, Issue 9, September, 2020

- Gurburneet Kaur, Sandeep Singh Gill and Munish Rattan (2020), "Impact of Lanthanum Doped Zirconium Oxide (LaZrO₂) Gate Dielectric Material On FinFET inverter", International Journal on Smart Sensing and Intelligent Systems, Vol.13, issue 1, pp.1-10, 2020

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

Sr. No.	Name of Event	Faculty Coordinator	Duration	Date(s)	Sponsor(s)
1	Workshop on "E-Learning"	Dr.Navneet Kaur (Organizing Committee member), Dr.Narwant Singh Grewal (Coordinator)	One day	24-Jan-2020	TEQIP-III
2	Modes of Teaching and Learning in Lockdown	Dr.Navneet Kaur (Organizing Committee member)	One day	11-May-2020	TEQIP-III
3	International Congress on Sustainable Development through Engineering Innovations	Dr. Harsimranjit Singh Gill (Organizing Committee member)	Three days	September 17-19, 2020	TEQIP-III
4	Webinar Lecture Series on Information Security	Dr. Harsimranjit Singh Gill (Coordinator)	Four weeks	November 2-27, 2020	TEQIP-III
5	Expert Lecture on "Procedural and substantial aspects of intellectual property Rights and its advantages for science and engineering students"	Simranjit Kaur	One day	30-Jan-2020	TEQIP-III

Sr. No.	Name of Event	Faculty Coordinator	Duration	Date(s)	Sponsor(s)
6	Webinar on "IPR and Patent Filing"	Simranjit Kaur	One day	2-Jul-2020	TEQIP-III
7	HR Summit 2020	Daljit Singh	One day	4-Feb-2020	TEQIP-III
8	Advance training Program by NSIC for final year students: 1. 3D Core concepts-Solid Works-CAD 2. Artificial Intelligence & Machine Learning 3. Siemens PLC Training SIMATIC S7-1200	Daljit Singh	Two weeks	January 6-17, 2020	TEQIP-III

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

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
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Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
1	Gurjot Kaur Walia, Navneet Kaur, Narwant Singh Grewal, Preeti Pannu, Gurinder Singh, Harsimranjit Singh Gill, Shivmanmeet Singh, Harleen Kaur, Simranjit Kaur, Harminder Kaur	Workshop on "E-Learning"	One day	24 January, 2020	Guru Nanak Dev Engineering College, Ludhiana
2	Gurjot Kaur Walia, Preeti Pannu, Shivmanmeet Singh, Harleen Kaur, Simranjit Kaur, Harminder Kaur	FDP on "Latest Wireless and Computing Technologies"	One Week	14 April, 2020 - 18 April, 2020	NITTTR, Chandigarh
3	Gurjot Kaur Walia, Navneet Kaur, Gurpurneet Kaur, Shivmanmeet Singh	FDP on "Low Power VLSI Design"	One Week	20 April, 2020 - 24 April, 2020	NITTTR, Chandigarh

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
4	Gurjot Kaur Walia, Navneet Kaur, Harminder Kaur(10124), Preeti Pannu, Harsimranjit Singh Gill, Shivmanmeet Singh, Harleen Kaur, Simranjit Kaur, Harminder Kaur	FDP on "MOODLE Learning Management System"	One Week	27 April, 2020 - 1 May, 2020	Guru Nanak Dev Engineering College, Ludhiana
5	Gurjot Kaur Walia, Navneet Kaur, Gurpurneet Kaur, Harminder Kaur(10124), Preeti Pannu, Harsimranjit Singh Gill, Shivmanmeet Singh, Harleen Kaur, Simranjit Kaur, Harminder Kaur	Webinar on modes of Teaching and Learning in Lockdown	One Day	11 May, 2020	Guru Nanak Dev Engineering College, Ludhiana

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6	Gurjot Kaur Walia	STC on "Image & Embedded Processing"	One Week	11 May, 2020 - 15 May, 2020	NITTTR, Chandigarh
7	Gurjot Kaur Walia	STC on "8051 and its Applications"	One Week	18 May, 2020 - 22 May, 2020	NITTTR, Chandigarh
8	Gurjot Kaur Walia	Webinar on "Digital Transformation"	One Day	29 May, 2020	Poornima institute of Engineering and Technology, Jaipur
9	Gurjot Kaur Walia	Webinar on "Be Future Leader- Post COVID-19"	One Day	3 June, 2020	Deepshika Group of Colleges, Jaipur
10	Gurjot Kaur Walia	Webinar on "Programmable Logic Controller"	One Day	5 June, 2020	P.A.C. Ramasamy raja Polytechnic College, Rajapalayam
11	Gurjot Kaur Walia, Navneet Kaur	webinar cum workshop on "Performing and Designing experiments on virtual platform"	10 days	8-17 June, 2020	M.J.P. Rohilkhand university in association with IIT Roorkee

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12	Gurjot Kaur Walia, Navneet Kaur, Gurpurneet Kaur, Preeti Pannu, Simranjit Kaur, Diljit Singh, Harminder Kaur, Kuldeepak Singh, Harminder Kaur	Webinar on "IPR and Patent Filing"	One Day	2 July, 2020	Guru Nanak Dev Engineering College, Ludhiana
13	Gurjot Kaur Walia, Navneet Kaur, Simranjit Kaur, Harminder Kaur	Webinar on "Women Safety, Rights and Gender Equality"	One Day	9 July, 2020	Guru Nanak Dev Engineering College, Ludhiana
14	Gurjot Kaur Walia	STTP on "Artificial Intelligence and 5G Communication Technology"	Six days	5 October, 2020 - 10 October, 2020	Poornima institute of Engineering and Technology, Jaipur
15	Gurjot Kaur Walia	Webinar Lecture Series on "Information Security"	Four weeks	2 November, 2020- 27 November, 2020	Guru Nanak Dev Engineering College, Ludhiana

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16	Gurjot Kaur Walia, Narwant Singh Grewal	FDP on "Innovative Pedagogical Methodologies and Tools for Effective Learning in Engineering Education"	Two weeks	7 December, 2020 - 21 December, 2020	Guru Nanak Dev Engineering College, Ludhiana
17	Navneet Kaur	FDP on "Scilab Programming"	One Week	14 April, 2020 - 18 April, 2020	NITTTR, Chandigarh
18	Gurpurneet Kaur, Harsimranjit Singh, Gurinder Singh, Navneet Kaur	FDP on "Research Trends in VLSI Design"	One Week	25 May, 2020 to 29 May, 2020	NITTTR, Chandigarh
19	Navneet Kaur, Gurpurneet Kaur	FDP on "Data Analytics using Python"	One Week	18 May, 2020 to 22 May, 2020	NITTTR, Chandigarh
20	Navneet Kaur	Workshop on "Data Analysis using Python"	One Day	22 June, 2020	GGN Khalsa College, Ludhiana
21	Gurpurneet Kaur	Nanotechnology for Electronic and Photonic devices (NanoDev2020)	One Week	15 June, 2020 to 19 June, 2020	PEC, Chandigarh
22	Gurpurneet Kaur	Essential tools in Optimization	One Week	25 June, 2020 to 29 June, 2020	NIT, Jalandhar

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
23	Gurpurneet Kaur	Intelligent Systems and Networks (ISN-2020)	One Week	31 August, 2020 to 4 September, 2020	NIT, Uttarakhand and SLIET Longowal
24	Harminder Kaur(10124), Preeti Pannu, Harminder	FDP on Academic leadership enhancement in Technical institutions	One Week	4 May 2020 to 8 May 2020	NITTTR, Chandigarh
25	Navneet Kaur	Online Professional Development Training	Three days	21-23 December, 2020	IIM Raipur
26	Preeti Pannu	One day workshop on " 3 Magical Steps to Teaching Excellence"	One day	16 July, 2020	Sponsored by TEQIP-III, Consultancy Cell, G.N.D.E.C
27	Preeti Pannu, Simranjit Kaur	One day workshop on IP commercialization and Technology Transfer	One day	12 Feb, 2020	NIT, Ropar, Punjab state council for science and technology, Gol
28	Preeti Pannu	webinar series on Antenna Design & Simulation using CST Studio	Two days	29-30 June, 2020	Mr. Deepesh Kumar Singh, Application Engineer of Jyoti Electronics, Ahmedabad
29	Preeti Pannu	Energy Efficiency in Wireless Sensor Network	One day	30 June, 2020	Francis Xavier Engineering College

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30	Preeti Pannu	1-day webinar on 3D printed Antennas: Design Methodology & Challenges	One day	3 July, 2020	IMPS college of Engineering & Technology
31	Preeti Pannu	The art and challenges in designing printed antenna arrays	One day	14 July, 2020	IMPS college of Engineering & Technology
32	Preeti Pannu	Webinar on Art of writing Research Paper	One day	31 Oct, 2020	Guru Ghasidas Vishwavidyalaya
33	Harsimranjit Singh Gill	Training of Future Skills Technologies: Cyber Security	Two weeks	24 February, 2020 - 06 March, 2020	Indian Institute of Technology Roorkee
34	Harsimranjit Singh	Gill Energy Conservation and Management	One	04 May, 2020 - 08 May, 2020	Guru Nanak Dev Engineering College, Ludhiana
35	Harsimranjit Singh Gill	Neural Network and CNN	One week	11 May, 2020 - 15 May, 2020	Curriculum Development Centre, NITTTR, Chandigarh
36	Harsimranjit Singh Gill	Modeling and Simulation using MATLAB	One Week	18 May, 2020 - 22 May, 2020	Mechanical Engineering, NITTTR, Chandigarh

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
37	Harsimranjit Singh Gill	Outcome Based Curriculum Design	One Week	01 June, 2020 - 05 June, 2020	Curriculum Development Centre Department, NITTTR, Chandigarh
38	Gurinder Singh	Webinar Lecture Series on Information Security	Four Weeks	2 November, 2020 - 27 November, 2020	Guru Nanak Dev Engineering College, Ludhiana
39	Gurinder Singh	Online STC on "Technological Interventions Using Wireless Communication	One Week	18 May, 2020 - 22 May, 2020	ECE Deptt of NITTTR, Chandigarh
40	Harleen Kaur	IEEE Virtual Talk Series-2020 on SOFT COMPUTING	One Day	6 June, 2020	IEEE AcSIR-CSIO Student Branch, Chandigarh
41	Harleen Kaur	National Level Online FDP on "Machine Learning and Research Opportunities"	One Week	15-June-2020 to 19-June-2020	SAPTHAGIRI COLLEGE OF ENGINEERING BENGALURU-57

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
42	Harleen Kaur	International Webinar on "Future of Technology with Cloud Computing and Industry 4.0"	One Day	18 June, 2020	Department of Computer Science & Engineering, under the aegis of MIC IIC Innovation cell & IQAC cell of Sant Baba Bhag University, Khiala, Jalandhar
43	Harleen Kaur	National webinar on "Microsoft Azure: Cloud Computing Services"	One Day	31 May, 2020	"Shivajirao Kadam Institute of Technology & Management, Indore (M.P.)"
44	Simranjit Kaur	FDP on "Flexible and Wearable Antennas: Recent advancements, fabrication techniques and applications"	One week	12 october 2020-16 october 2020	AICTE training and learning (ATAL) academy & NITTTTR, Chandigarh
45	Simranjit Kaur	Webinar on "Importance of Intellectual Property Rights for Academia and Startups"	One Day	27 November, 2020	IPR Cell, Guru Nanak Dev Engineering College, Ludhiana

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
46	Kuldeepak Singh	TEQIP-3 Sponsored 3 day workshop on "Train The Trainees On Examination Reforms"	Three days	9-11 Jan, 2020	KLE Technological University Huballi, Karnataka
47	Kuldeepak Singh	Funding Schemes for Institution to support startup and incubation activities	Three Days	28-30 Dec, 2020	Opex Accelerator Pvt Ltd.
48	Daljit Singh	India Science Festival, Pune	Two Days	10-11 Jan, 2020	IISER, Pune
49	Daljit Singh	Industry Academia Symposium	One Day	24 January, 2020	PHD House, Sector-31, Chandigarh
50	Daljit Singh	Double Your Profits with The Low Hanging Fruits with Industry 4.0	One Day	18 April, 2020	Zoom Meet
51	Daljit Singh	TCS Online Webniar	One Day	5 June, 2020	Webex Meet
52	Daljit Singh	Intenet of Things (IoT)	One Week	23-27 November, 2020	IIT Bombay
53	Daljit Singh	MAKING MENTORING RELEVANT: NEP 2020 PERSPECTIVE	One day	21 Sept, 2020	NITTTR Bhopal, Chandigarh, Chennai, Kolkata

Sr. No.	Name of Faculty	Name of Event	Duration	Date(s)	Organizing Institute
54	Daljit Singh	Virtual Experiments in Mechanical Engineering	One Week	2-6 Nov, 2020	IIT Guwahati
55	Harminder kaur	Webinar on " How to write a good research project proposal "	One Day	31 May, 2020	Department of ECE, punjabi university . Patiala
56	Harminder kaur	WEBINAR on the topic "SWAYAM Awareness Workshop"	One Day	9 July, 2020	Guru Nanak Dev Engineering College, Ludhiana
57	Harminder kaur	Professional Development Training under Teqip-III	Three days	20-30 Oct, 2020	IIM, Kashipur
58	Harminder kaur	workshop on experimental methods in analytical electrochemistry and advanced chemical engineering	Three days	23-25 November, 2020	Ujjain engineering college, Ujjain

Miscellaneous (Lab Upgradation, Infrastructure augmentation etc.)

- Purchased Vivado System License (25 users) on 16.09.2019 in Computational Laboratory(Lab Incharge: Kuldeepak Singh)

Expert Lecture delivered

- **Gurjot Kaur** delivered a Guest Lecture on “VHDL” on September 11,2020 for students of ECE and EEE of Gulzar Group of Institutes, Khanna.
- **Navneet Kaur** delivered expert lecture on “Futuristic transistor structures in VLSI industry” on 10.06.2020 during one week IEEE Lecture series on Technology for Sustainability organized by Electrical Engineering Department, GNDEC Ludhiana

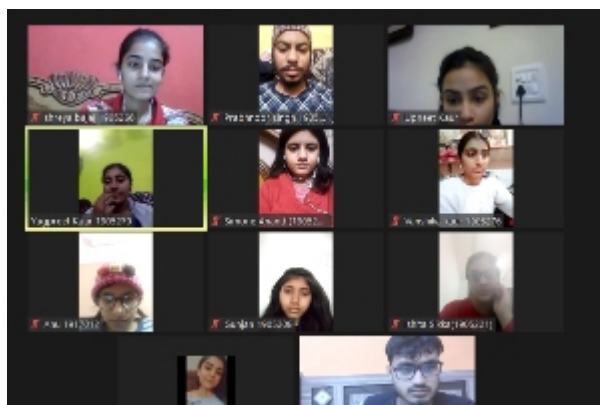
Student’s Corner

- Student’s Achievements



- **Priyanka Sroya**, 2nd year student secured 2nd position in Poster making contest held from 19-21 June, 2020 organized by Civil Department.
- **Harnoor Singh**, 2nd year student got 3rd prize in Western Singing solo competition in Anand Utsav 2020 held on 5-7 March, 2020.
- **Mandip Dhaliwal**, final year student got placed in Samsung Company with a package of 12Lakhs.

IETE STUDENT FORUM



BRAIN BOOMERANG

An online inter-class quiz competition for ECE students on Zoom platform held on 22-sept, 2020 for 2nd year students, 23-sept,2020 for 3rd year students and 24-sept, 2020 for final year students.