

## Department of Electronics and Communication Engineering

The Department offers **Undergraduate, Postgraduate and Doctoral Program** in Electronics and Communication Engineering. The Department has dedicated PhD qualified Faculty having vast experience of conducting and guiding research in various sub-domains of Electronics and Communication for **M. Tech.** and **PhD** degrees. The Department enthusiastically facilitates the students and Research scholars in the latest research know-how and exposure in this field and allied subjects. Department has many publications in the reputed International & National Journals/Conferences and filed as well as granted Patents.

### Programme Offered

Programme	Intake	Duration
B. Tech. Electronics & Communication Engineering	60	4 Years
M. Tech. ECE (Wireless Communication)	25	2 Years

### Research Areas

- **Soft Computing, Applied Soft Computing**
- **Wireless Communication, Optical Communication**
- **Microwave Communication, VLSI**

### Infrastructure

To facilitate the students, various undergraduate and postgraduate laboratories as per curriculum have been established. Another state-of-the-art Wireless Technologies Research Laboratory is also in development process for the exposure of the recent advancement in the field.

### Projects Undertaken by Faculty

Project Title	Funding Agency	Principal Investigator
Analysis and design of low cost portable free space optical link (Submitted)	DST	Dr Amit Gupta

### Faculty Members

Name	Designation	Specialization	Experience
Dr. Avtar Singh Buttar (HOD)	Associate Professor	Wireless Communication, Soft Computing	26 years
Dr.Satvir Singh	Associate Professor	Applied Soft Computing & VLSI	18 years
Dr.Dalveer Kaur	Assistant Professor	VLSI, Microwave and Wireless Communication	9 years
Dr. Rakesh Goyal	Assistant Professor	Optical and Wireless Communication	9 years
Dr. Amit Gupta	Assistant Professor	Optical and Wireless Communication	16 years

### Research Scholars

Name	Title of Thesis	Funding Agency	Ph.D Supervisor
Shampal Singh	Efficient non Orthogonal Multiple Access Technique for Wireless Communication System	UGC	Dr. Avtar Singh Buttar Dr. Dalveer Kaur
Meenakshi Sansoy	Life time Enhancement in wireless sensor network	UGC	Dr. Avtar Singh Buttar Dr. Rakesh Goyal

### Events Organised:

In house quiz and technical events celebration: **Technoquiz( September06-07, 2017).**

A Cultural talent hunt event: **Welkom Fiesta 2K18 (March 20, 2018).**

A Techno Cultural event: **AAGAZ (April 18, 2017)**

A multi-regional event during Diwali: **Sanskriti2017 – (October 17, 2017)**

### Faculty Participation / Paper Presentation in Conferences:

- Singh, Satvir (2016), “**Computational Intelligence based Metaheuristic for Energy-Efficient Routing in WSNs**” presented at *IEEE World Congress on Computational Intelligence*, Vancouver, Canada (Co-author- P S Mann, Anil Kumar Rose).
- Buttar, Avtar Singh (2014), “**Evolving Novel Algorithm Based on Intellectual Behaviour of Wild Dog Group as Optimizer**” presented at *IEEE Symposium Series on Computational Intelligence* at Orlando, Florida, USA.

### Faculty Publications:

- Kaur, Parwinder, **Kaur, Dalveer** (2017), “**Simulation based Comparative Study of Routing Protocols under Wormhole Attack,**” *Wireless Personal Communication*, Volume 96, Issue 1, 47-63.
- Singh, Amandeep, **Gupta, Amit**, Shaina, Surbhi (2018), “**Digital Signal Processing of 400 Gbps CO-QPSK-WDM System Over Optical Wireless Channel for Carrier Phase Estimation**”, *Wireless Personal Communications*, Volume 99, Issue 1, 111-120.
- Kumar, Chakresh, **Goyal, Rakesh** (2017), “**Analysis of Proposed Hybrid Amplifier Model for Single to Multi-Channel WDM Optical System at 10 Gbps with 100 GHz of Channel Spacing**”, *International Journal of Information Technology, Springer*, Volume 9, Issue 3, 267-271

### Workshop/ FDP/ Summer School/ Winter School/ Refresher Course attended:

- Dr Amit Gupta participated in a “**Workshop on Access to technology for innovation & establishing TISC network**” organized by *Punjab State Council for Science & Technology*, Chandigarh (December 4-5, 2017)
- Dr Dalveer Kaur participated in a “**FDP on Control Systems & Application in Space Science Technology**”, organized by *Indian Institute of Space Science Technology, Thiruvananthapuram, Kerela*, (May 23-27, 2016)

## Patents Granted

Title of Invention	Patent Number/ Application No.	Inventor
A Device and Method to Control Headlights of Vehicles as per behavior of Eye Vision	Patent Number: 217743 829/DEL/2003	Dr. Avtar Singh Buttar
A Solution Made Photodiode	1750/DEL/2004	Dr. Avtar Singh Buttar
A Solution Made Phototransistor	1857/DEL/2004	Dr. Avtar Singh Buttar
Wild Intelligence: A Novel Intelligence as Dog Group Wild Chase & Hunt Drive(DGWCHD)	1965/DEL/2008	Dr. Avtar Singh Buttar Dr. Ashok Kumar Goel Dr. Shakti Kumar

## Academic Achievements and Awards:

- Dr.Dalveer Kaur received the **Best Teacher Award** for the year 2013 by Indian Society for Technical Education (ISTE), New Delhi.
- Dr.Amit Gupta received the **Best Teacher Award** for the year 2016 by Indian Society for Technical Education (ISTE), New Delhi.
- Dr Rakesh Goyal received **Academic Excellence Award** for the year 2014 by Rayat-Bahra Group of Institutions, Patiala

## Prominent Achievements of the Students :

- Ms Ridhima, Gold Medallist, B.Tech. ECE, *Himachal Pardesh Technical University*, 2017.
- Mr. Saurav Asija, Third Prize, National level Inno-Tech 2018, *Pushpa Gujral Science City, Kapurthala in collaboration with National Council of Science Museum*, (March 18-19, 2018).
- Ms Rashmeet, Gold Medallist, B. Tech. ECE, *Beant College of Engg. & Technology, Punjab* (2017)
- Mr. Harinder Pal Singh, Gold Medallist, Vaar Singing, *Guru Nanak Dev Engg. College, Ludhiana* (2013)
- Mr. Sourav, Mr. Tarun, Third Prize, B-Plan Competition, E-Week, *I K Gujral Punjab Technical University, Kapurthala* (April 2-6, 2018)







