



October 2020 – March, 2021

Electronics & Communication Engineering Department has been conferred the status of a QIP centre for Engineering College teachers. As a part of Industry collaborative learning initiative, a new Master of Engineering Course in Electronics & Communication Engineering with specialization in Artificial Intelligence has been launched in 2020-21.

➤ **Training Programme:**

A. Long term Programme:

- ME Regular - Students of Batch 2020 started with their second semester ME programme
- ME Regular - Students of Batch 2019 started their thesis work
- M.E. in Artificial Intelligence (AI), Regular Batch 2020 (1st Semester)
- ME Modular - Students of Batch 2018 (6th Spell), 2019 (4th Spell) & 2020 (1st Spell) completed their spell respectively
- Ph.D. Scholar – Scholars are carrying out their research work in the department

M.E. Pre-thesis Presentation (Dr. AMK)

Pre-thesis presentation was made on-line by 3 Modular ME students:

1. Akhil Arora Roll No. 141602 11/2/2021
2. Parul Sharma Roll No. 171607 11/2/2021
3. Prince Garg Roll No. 141620 12/2/2021

STC Conducted (Contact Mode/ICT/Cluster Prog.)

Sr. No.	O. Plan No.	Course Title	Start Date	End Date	Course Coordinator
1.	ICTO-SP-18	ATAL-FDP on Flexible and Wearable Antennas : Recent Advancements, Fabrication Techniques and Applications (Sub-Thrust Area : Wearable Devices)	12.10.2020	16.10.2020	BSD
2.	ICTO-214	ECE Virtual Lab Practices using Free Simulators	19.10.2020	23.10.2020	BSD
3.	ICTO-208	Mobile Broadband Transformation	19.10.2020	23.10.2020	GS
4.	ICTO-233	Digital Filter Design using MATLAB	16.11.2020	20.11.2020	AK
5.	ICTO-234	PLDs and Embedded Systems	04.01.2021	08.01.2021	KS
6.	ICTO-269	Image Processing using MATLAB	01.02.2021	12.02.2021	AMK
7.	ICTO-245	Teaching and Learning for NBA Accreditation in Technical Education	08.02.2021	12.02.2021	BR/PV
8.	ICTO-270	Free and Open Source Software (FOSS) Tools for Effective Teaching – Learning	15.02.2021	19.02.2021	BS/GS
9.	ICTO-280	4G and 5G Communication	22.03.2021	26.03.2021	GS
10.	ICTO-281	Embedded System Design	22.03.2021	26.03.2021	KS

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Conducted with Electrical Engineering Department

Research Trends in Electrical and Electronics Engineering	26.10.2020	30.10.2020	BR
Recent Advances in Affordable and Clean Energy	23.11.2020	27.11.2020	BR
Role of Leadership in Higher Education	14.12.2020	18.12.2020	BR

STCs under Consultancy

Sr. No.	O. Plan No.	Course Title	Start Date	End Date	Course Coordinator
1.	ICTO-CP-13	Training for Foremen of ITI on Administration, Planning, Monitoring and Training for Uttarakhand State	19.10.2020	23.10.2020	SSG/KGS
2.	CP-135	Residential Training Programme for ITI Instructors of Uttarakhand State on Engineering Drawing and Workshop Calculations.	28.12.2020	07.01.2021	SSG/KGS
3.	CP-135	Residential Training Programme for ITI Instructors of Uttarakhand State on Electronic Mechanic.	28.01.2021	07.01.2021	SSG/KGS
4.	CP-135	Residential Training Programme for ITI Instructors of Uttarakhand State on Electronic Mechanic	21.01.2021	31.01.2021	SSG/KGS
5.	CP-135	Residential Training Programme for ITI Instructors of Uttarakhand State on COAP/Data Entry Operator	21.01.2021	31.01.2021	SSG/KGS
6.	ICTO-CP-19	Training for ITI Instructors on Instructor Pedagogy for Uttarakhand state	27.02.2021	02.02.2021	SSG/KGS

Workshops – Online

Workshop on “IoT and Artificial Intelligence”	01.03.2021	05.03.2021	GS/BS
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➤ Research & Development: (Completed)

- ME Pre-thesis – 02
- ME Final Thesis – 01

LIST OF PUBLICATIONS

Paper Published in Conference:

Papers Published in other Journals:

- 1.
- 2.
- 3.
- 4.

4. R & D / Consultancy Activities

Flexible and Wearable Antennas: Recent	Grant of Rs. 93000 received and FDP	-	AICTE	Completed (UC
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Advancements, Fabrication Techniques and Applications? - Dr. Balwinder Singh	Organized during Oct, 12-16, 2020			Pending)
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Project Titles (Separated by Comma)	Project Achievement/ Progress (Separated by Comma)	Research Project Submitted	Funding Agency (Separated by Comma)	Status
Artificial Intelligence based Digital phenotyping for suicide Intervention Dr. Amod Kumar, Dr. Balwinder Singh Dr. Meenakshi Sood	Project Outlay: Rs. 20.00 Lakhs	Submitted	DST, Orissa	Under Review
Design and Development of Junctionless Nanowire TFET Biosensor – Dr. BR	One SCI published		SERB	Ongoing

III. Research Projects

Sr. No.	Name of the Project	Activity	Coordinator / Team Member
1.	Design and Development of Junctionless Nanowire TFET Biosensor	SERB funded project for 2019 to 2022 (37 Lakhs)	Dr. Balwinder Raj

INSTRUCTIONAL MATERIAL DEVELOPMENT

Sr. No.	Title of the Instructional Material	Faculty
1.	Digital Communication using Python	Dr. GS
2.	Digital System Design using Circuit Verse Simulator	Dr. KS

FDP/TRAINING PROGRAMMES / WEBINARS ATTENDED BY THE INSTITUTE FACULTY/STAFF

Sr. No.	Date(s) / Period	Program	Remarks
1.	25-31 Jan 2021	Dr. Balwinder Raj attended a QIP short term course (online) on Mastering Advanced Techniques of Characterization for High-end Research (MATCH-2021) conducted by the Department of Materials Science & Engineering, IIT Kanpur	

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2.	15 th -20 th Feb 2021	Dr. Balwinder Raj attended the AICTE-MRSPTU sponsored FDP/STTP on "IoT & its Applications" held online	
3.	20-24 Feb 2021	Dr. Balwinder Raj attended the 34 th International Conference on VLSI Design and 20th International Conference on Embedded Systems (VLSID2021)	
4.	04-08 Jan, 2021	Dr. Garima Saini attended TEQIP-III Next generation sequencing: ML and DL Applications.	

RESEARCH PAPERS PUBLISHED / COMMUNICATED / DRAFTED

Sr. No.	Period	Research Paper Details	Team
1.	2 Jan 2021	Design and analysis of double-gate junctionless vertical TFET for gas sensing applications”, Applied Physics A, Springer, Vol.127, No.16, 2 Jan 2021 (SCI)	Sonal Singh; Mamta Khosla, Girish Wadhwa; Balwinder Raj
2.	6 Jan 2021	Design and analysis of Gate overlapped/underlapped NWFET based lable free biosensor”, Journal of Silicon, Springer, 6 Jan 2021,(SCI).	Shamshad Alam; Ashish Raman; Balwinder Raj; Naveen Kumar; Sarabdeep Singh
3.	17 Mar 2021	Comparative Analysis of OFETs Materials and Devices for Sensor Applications, Journal of Silicon, Springer (Communicated)(SCI)	Parminder Kaur, Parveen Kumar, Sandeep Singh Gill and Balwinder Raj
4.	Jan. 2021	Helix Shaped Circularly Polarized Antenna For Wireless Communication Applications, Enhanced Traffic – adaptive allotted MAC for IOT based Smart Monitoring grid” Journal of Super Computing, Impact Factor : 2.469, Tanvi Sood, Kanika Sharma	Shweta Tripathi , Garima Saini
5.	March 2021	Design of a small size axial mode helical antenna for UHF RFID wristbands, A Novelistic GSA and CSA based optimization for Energy - Efficient routing using Multiple Sinks in HWSNS under Critical Scenarios” Wireless Personal Communication; Impact Factor = 1.061	Namita Sharma, Garima Saini
6.	March 2021	Lanthanum doped Zirconium Oxide (LaZrO2) High-k Gate Dielectric FinFET SRAM Cell Optimization”, accepted for publication in Transactions on Electrical and Electronic Materials. (Scopus)	Gurpuneet Kaur S S Gill Munish Rattan
7.	Feb 2021	Compact and Low Profile Planar Antenna with Novel Metastructure for Wearable MBAN Devices, Wireless Personal Communications	Ramanpreet, N., Rattan, M., & Gill, S. S.

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8.	March 2021	A squared bossed diaphragm piezoresistive pressure sensor based on CNTs for low pressure range with enhanced sensitivity. Microsystem Technologies (SCI)	Devi, R., & Gill, S. S.
9	March 2021	Whale Optimization Algorithm Approach for Performance Optimization of Novel Xmas Tree-Shaped FinFET, Silicon	Gurpuneet Kaur S S Gill Munish Rattan
10.	Feb.2021	Enhanced Traffic-adaptive slotted MAC for IOT-based smart monitoring grid, Journal of Super Computing (SCI)	Tanvi Sood, Kanika Sharma
11.	Feb.2021	A Novelistic GSA and CSA Based Optimization for Energy-Efficient Routing using Multiple Sinks in HWSNs under Critical Scenarios, Journal of Wireless personal Communications (SCI)	Tanvi Sood, Kanika Sharma

Any other relevant information.

Extension Services Projects	Achievement (Extension Services Projects)	Remarks (Extension Services Projects)
4 Expert Lectures - Dr. Balwinder Singh	<ul style="list-style-type: none"> - Delivered Expert lecture on “Mendeley: Reference Management Tool and Report Writing” on 31-10-2020 in Refresher Course in Information Technology, Awareness & Applications (Interdisciplinary) from October 21 to November 3, 2020 organized by UGC Human Resource Development Centre of Guru Nanak Dev University, Amritsar - Delivered Expert lecture on “Development of Hybrid Soft Computing Algorithms for Fractal Antenna Design,” on 03-11-2020 in online Short term training program (STTP) "Antenna Design and Analysis using Mathematical Solvers", being held during 29th October to 3rd November, 2020 organized by AITAM, Tekkali, AP - Delivered Expert lecture on “Development of Hybrid soft Computing algorithms for Miniature antennas on 28-11-2020 in STTP on “Design and Simulation of Miniature Antennas for IoT Applications-DSMAIA-2020” from 23rd to 28th November, 2020 organized by MVGR College of Engineering, AP - Delivered Expert lecture on “Overview of Flexible Wearable Antennas” in 30-11-2020 in ATAL-FDP on” Wearable Devices” from 30.11.20 to 4.12.20 organized by Sri Ramakrishna Institute of Technology, Coimbatore 	

EXTENSION SERVICES AND CONSULTANCY

Extension Services Project	Date(s) / Period	Remarks
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Dr. Balwinder Raj , delivered expert talk “Industrial Development of Electronic” in winter school at Guru Nanak Dev University Amritsar	16 Feb, 2021	
Dr. Balwinder Raj , delivered expert talk in AICTE (QIP) Sponsored Short Term Course (Online) organized by ECE Department, SLIET Longowal.	20-25 December 2020	
Submitted AICTE ATAL FDP on Wearable Antennas for IoT & 5G: Design, Fabrication and Experimentation- Dr. GS	Feb. 2021	
Dr. Balwinder Raj , delivered expert talk “Sensors Design for IoT Applications” in STC organized by CDAC Mohali	2 March, 2021	
Acted as Reviewer of International Research Paper- Dr. BSD	6 March, 2021	Completed
Uttarkhand Workforce Development Project – Dr.S.S. Gill	Jan-Feb 2021	Completed
Expert Talk in TEQIP-III sponsored by FDP by Rajasthan Technical University, KOTA – Dr. Garima Saini	Feb, 2021	Completed
Delivered 02 Expert Talks outside NITTTR – Dr. BSD	March, 2021	Completed
Antenna Testing - Dr. BSD, Dr. GS		

Industry Collaborative Programme

- i) Refresher course on Internet of Things (A Project based learning through Virtual IoT Lab), 08.07.2020-19.07.2020 (Revenue 1.50 lacs) – **Dr. SSG**
- ii) Refresher course on Artificial Intelligence and Machine Learning (A Project Based Learning), 22-07-2020 to 05-08-2020 (Revenue 1.50 lacs) – **Dr. SSG**

8. Curriculum Development NIL

No of Curriculum Proposed	Target Group (Curriculum Proposed)	Achievement (Curriculum Proposed)	Completed (Curriculum Proposed)

Coordinator:
Dr. Kanika Sharma
ECE Department