Electronics & Communication Engineering Department

INFORMATION BROCHURE



OUR VISION

To build a vibrant multicultural learning environment founded on value based academic principles, wherein all involved shall contribute effectively and responsibly to the nation and global community.















National Institute of Technology Hamirpur (H.P.) India

http://www.nith.ac.in/

Index

1	Introduction & Objectives	1
2	Messages	2
3	Course & Placements	3
4	Faculty	3
5	Laboratories	4
6	Projects & Research	5
7	Conferences, Workshops & Short Term Courses	6
8	Image Gallery	7

Introduction

When looked at from outside the institute library, the view of the mighty Dhauladhar ranges in much obstructed by a mightier administrative block which houses the pride of NIT Hamirpur on its top, the Electronics & Communication Engineering (E&CE) Department. The department shall soon be housed in a new magnificent & majestic E&CED building next to Vivekanand Lecture Hall Complex. Established in the year 1988, the department has since built an international reputation for excellence in teaching, research and service. The department believes in serious academic pursuit and encourages the radical and original thinking with regard to national and internationally relevant ideas. Department is building its reputation step by step with a dedicated goal of adding value to life and professional standards. In an era when electronics engineers are changing the world to a comfortable global home and the advances of Electronics have triggered the information and technology revolution, the E&CE Department of NIT Hamirpur takes pride in its high national ranking and the international recognition its faculty has received from their peers.

Objectives

- **Educational Objectives:** To deliver quality Technical Education in Electronics & Communication Engineering. To start PG Programmes in new areas of E&CE. To impart education based on industry requirements & standards, keeping pace with technology.
- **Research & Development Objectives:** To conduct and promote scholarly research in VLSI design, optical fiber communication and other emerging areas of Electronics & Communication.
- **Societal Objectives:** To participate in technical innovation and transfer of know-how to our students, staff, NIT Hamirpur fraternity, community & the society at large.

Messages



Prof. Rajnish Shrivastava
Hon' Director
NIT Hamirpur HP

Contacts
+91-1972-254200 (O)
+91-1972-222383 (R)
director@nith.ac.in

From Director's Desk

It brings a sense of satisfaction to know that Department of E&CE NIT Hamirpur is bringing out Information Brochure. It provides the glimpses of the efforts put in by the faculty, staff and students of E&CE dept. to enhance the quality of education at NIT Hamirpur. The faculty and staff of E&CED are doing what is right for delivering long term values to all stakeholders of technical education system-students, faculty, parents and the larger community it serves. It is due to complete devotion and dedication that NIT Hamirpur has been rated at 9.4 on a ten point scale by the World Bank TEQIP auditor and 20th rank as per DATA Quest, amongst Technical Institution in India. I appreciate the efforts of faculty, staff and students for being awarded AICTE NBA accreditation to B. Tech as well as M.Tech. Degree programs of E&CED of NIT Hamirpur. I take this opportunity to wish all the best to the faculty, staff and students of E&CE NIT Hamirpur do well in all their future endeavors.

Prof. Rajnish Shrivastava



Dr. Rajeevan Chandel
Head, E&CE Deptt.
NIT Hamirpur HP

Contacts
+91-1972-254600 (O)
+91-1972-254535 (R)
rchandel@nith.ac.in

From Head's Desk

It gives me immense pleasure to introduce the readers to the Electronics & Communication Engineering Department of the National Institute of Technology, Hamirpur. This institute has created a nick in the field of technical education. The department has a highly dedicated, hardworking and dynamic faculty in its rolls and their number is growing day by day. Faculty members are publishing their research work in reputed National & International journals of the world. All of us at the institute have a vision to make this institute at par with IITs and create our own brand. The department has state-of-the art labs & classrooms. A close interface with the industry is maintained. Every year highly reputed organizations visit the institute for the campus interviews and placements. The brochure highlights a wide range of academic research and continuing education activities undertaken by the department.

Dr. (Mrs.) Rajeevan Chandel

Courses

Electronics & Communication Engineering Department, NIT Hamirpur HP offers:

- Bachelor of Technology (B.Tech) in Electronics & Communication Engineering
- Master of Technology (M.Tech) in VLSI Design Automation & Techniques (VDAT)
- Master of Technology (M.Tech) in Communication Systems & Networks (CSN)
- Doctor of Philosophy (Ph.D) in the areas of VLSI Design, Optical Communication etc.

The annual intake for the B.Tech and M.Tech courses are 90 and 18 respectively.

B.Tech in E&CE and M.Tech in VDAT of the E&CE department have been awarded accreditation for five year w.e.f Jan 2008 and three year w.e.f July 2011 respectively.

Placements

Year	No. of E&CED Student Placed			
	B.Tech	% Placement	M.Tech	% Placement
2009	42/56	75	5/16	31.25
2010	48/59	81.35	6/16	33
2011	54/57	94.73	17/35	48.57
2012	70/70	100	28/35	80

Faculty

S.No.	Name of Faculty	Designation	Qualification	Specialization
1	Dr. Vinod Kapoor	Professor	Ph.D.	Optical Fiber Communication
2	Dr. (Mrs.) Rajeevan Chandel	Associate Professor & Head	Ph.D.	Low Power VLSI Design & Nano-electronics
3	Er. Surender Kumar Soni	Associate Professor	M.E. (Pursuing Ph.D.)	Wireless Sensor Networks
4	Er. Ashok Kumar	Associate Professor	M.E (Pursuing Ph.D.)	Wireless Sensor Networks
5	Er. Desh Raj Rana	Assistant Professor	M.E	Communication Systems & Engineering
6	Dr. (Mrs.) Gargi Khanna	Assistant Professor	Ph.D.	Low Power VLSI Design & RF Design
7	Dr. Ashwani Rana	Assistant Professor	Ph.D.	VLSI Design & Nanoelectronics
8	Er. Krishan Kumar	Assistant Professor	M.Tech.	Communication Engineering
9	Er. Manoranjan R. Bharti	Assistant Professor	M.Tech.	Communication & Signal Processing
10	Er. Gagnesh Kumar	Assistant Professor	M.Tech.	VLSI and Nanotechnology
11	Er. Vinod Kumar	Assistant Professor	M.Tech.	Analog Electronics & Mixed Signals
12	Er. Philemon Daniel	Assistant Professor	M.Tech. (Pursuing Ph.D.)	VLSI Testing, Digital Design Microcontroller
13	Er. Rakesh Sharma	Assistant Professor	M.Tech.	Digital Communication & Signal Processing

Laboratories

VLSI DESIGN & SIMULATION LAB

The pride & honor of ECE department, this lab is just set to raise the eminence and elegance of the E&CED, Equipped with the modern EDA softwares like Synopsis, Mentor Graphics, Cadence Design System, Xilinx, Tanner, Matlab & other tools installed on the fastest 4GB RAM PCs for R&D work in VLSI. This lab brings glory to the entire institute.



OPTICAL FIBER, TV & DSP LABS

Optisim software is being used in optical fiber lab and research in optical fiber communication is carried out. Occupying the maximum floor area as compared to other labs, these labs consists of TV trainer kits and CROs. The exciting concept of Digital Signal Processing and filter design and learnt and assimilated by the students in DSP lab.

DIGITAL EMBEDDED SYSTEM LABS

Digital Embedded Systems Lab provides students with hands-on experience with building, programming, testing, and debugging processor, micro-controller and FPGA-based systems. It is an inter-disciplinary facility with collaborative projects across departments such as EE, CSE, Mechanical Engineering. etc.



BASIC ELECTRONICS, DIGITAL & LIC LABS

Semiconductors, Transistors, Circuits, Gates, Flipflop, Counters etc. are the domain of these labs. In LIC lab OP-Amp 741 & 555 Timer rules. Students learn how linear circuits preform various operations & get acquainted with the Chebyshev and Butterworth filter design.

MICROWAVE & COMMUNICATION LABS

Softwares like Microwave Wizard makes student acquainted with the interesting world of Microwaves, LAN, GSM, Digital Communication etc. Analog & digital modulation techniques through trainer kit have been analyzed; also with Commsim Matlab interface.



INDUSTRIAL ELECTRONICS LAB

This lab aim to familiarizing the students with high power devices & components from thyristor to traic to very instrumental SCRs & their applications in modern industrial know how. The most advanced tools geared to implement control algorithms into commercial control devices prototype.

MEMS DESIGN CENTRE

The COMSOL Multiphysics, IntelliSuite, and CoventorWare MEMS+ are the tightly integrated design environment that will link entire MEMS organization together. IntelliSuite unifies various engineering and manufacturing tasks into a single living design environment.



ELECTRONIC INSTRUMENTATION & MEASUREMENT LAB

Measurement lab in E&CE Deptt. Is established to provide students the practical, elementary as well as comprehensive knowledge about instrumentation. A wide variety of sensors and transducers: Strain gauge, Transducer kit, LVDT kit, CRO trainer.

Ongoing Projects

SMDP-II





Major Sponsored Research Projects

★ **SMDP-II Project:** Department of E&CE, jointly with CSED has received a Project on Special Manpower Development Programme for VLSI Design & related software (SMDP-II) for a period of seven (7) years from the Ministry of Communication and Information Technology, Department of Information Technology, Govt. of India, New Delhi. It is an important and prestigious project through which quality manpower in the area of VLSI Design and related software has been created, to cater to the pressing demand of VLSI Engineers and Designers in the country.
Project Coordinator: Dr. (Mrs.) Rajeevan Chandel (till 10 Jan 2013)
Dr. Ashwani Rana (w.e.f. 11 Jan 2013).

★ **Open Source LMS** with ERP Extension for 5 years 2009-2014 from National Mission on Education through ICT.

★ **TEQIP-II** from MHRD/NPIU for 4 years from 2010-2013.

★ **Urban Poverty Alleviation** Project from MUD for 3 years from 2007-2010.

Five Govt. Sponsored Projects have been accomplished earlier in E&CE Department.

Research





Major Consultancy Projects

★ **NPMASS Project:** The E&CE Department has NPMASS Project from IISC Bangalore for EDA & MEMS softwraes. Project Coordinator: Dr. (Mrs.) Rajeevan Chandel.

★ Providing **Core Banking Solution** and other allied goods for Kangra Central Co-operative Bank, Dharamsala under Er. Ashok Kumar, Er. Surinder Soni and others for 5 years from 2009-2014.

★ A work progressing in **Computer Networking and Automation** for Five years from 2009-2014, for Dr. RPG Medical College, Tanda, Kangra.

★ Supply, installation, implementation, commissioning and maintenance of **Core Banking Solution** and other allied goods and services incidental there to Jogindra Central Co-operative Bank, Solan for 5 years (2012-2017). Coordinator: Sh. S. K. Soni, Er. K.S. Panday.

★ Consultancy for recruitment of Junior Engineers in HPSEB for year 2007.

Faculty members and students of the E&CE Department have published many research papers in National & International Conferences as Microelectronics International, Emerald; Journal of Nanoelectronics and Optoelectronics; Microelectronics Journal, Elsevier Science; Journal of Circuits, Systems, and Computers; International Journal for Light and Electron Optics, Elsevier Science; Journal of Low Power Electronics etc. to enhance the research activities going on.

Conferences, Workshops & Short Term Courses









★ A National Seminar on **Intellectual Proprietary Rights (IPR-2012)** for Faculty & Research Scholars of NIT Hamirpur, Technical Institutes & limited participants from other Colleges was successfully organized by Centre for Continuing Education on August 25, 2012.
Chief Coordinator: Dr. (Mrs.) Rajeevan Chandel.

★ Short Term Training Programme on **Microcontroller Based Designing (MBD-12)**: MBD-12 was organized under SMDP-II, SPEC and Continuing Education on 24th & 25th March 2012 for UG and PG students of NIT Hamirpur & limited participants from other technical institutes in E&CE Department, National Institute of Technology (NIT) Hamirpur HP.

★ **Workshop on MATLAB** for Engineering Applications (MAT-12) was organized under SMDP-II and Continuing Education, NIT Hamirpur HP on 22nd March 2012 for UG, PG students and Ph.D. scholars of NIT Hamirpur & limited participants from other technical institutes in Vivekanand Lecture Hall Complex of NITH. To accomplish the major projects, PG dissertations and to carry out research work, knowledge of various softwares and tools is essential. Main experts for the Workshop were Prof. Y.R. Sood, Dr. Ashwani Kumar Chandel, Dr. Bharat Bhushan and Dr. Rajeevan Chandel.

★ Three Days **SPICE Workshop** was organized under SPEC, E&CED NIT Hamirpur. Prof. Vinod Kapoor, Head and faculty of E&CED were present at the inaugural session. The participants developed their soft skills in SPICE, which is versatile EDA software. Electrical and Electronics circuit simulation was taught in detail. Over 100 students benefited from the Expert Lectures and Hands-on-Practice Sessions in OrCAD and TANNER EDA Tools. Project Coordinator: Dr. (Mrs.) Rajeevan Chandel and Er. Rohit Dhiman along with the **SPEC Team** coordinated the workshop from **1st to 3rd Oct 2010.**

★ **NATIONAL CONFERENCE** on "Design Techniques for modern electronic devices, VLSI & Communication Systems DTVC-2007" was a very successful & major event of E&CED, May 2007. The conference was well attended by twelve world renowned academic experts and over hundred delegates from all over the country. Conference was sponsored by TEQIP NIT Hamirpur, SMDP-II, VLSI Society of India (VSI) Bangalore and others.

★ **Society for Promotion of Electronic Culture (SPEC)** of E&CED organized first technical SPEC-Fest from 22-24 March '08 in which students of all branches of NIT Hamirpur participated in various technical events. Since then it is an annual feature of the students of E&CED.

E&CE students actively participate in NIMBUS, Cultural Fests, sports & also visit other institutes to present their research work.

Image Gallery





Upcoming new building of the E&CE Department

For Further details Please Visit:
http://www.nith.ac.in/
National Institute of Technology
Hamirpur- 177005 (Himachal Pradesh), India
Fax: +91-1972-223834, +91-1972-222584
Tel: +91-1972-254600

Compiled & Designed by: *Pankaj Priyadarshi*
11M404, M.Tech