



# Annual Report

2019-2020

## National Institute of Technical Teachers Training And Research

Sector – 26, Chandigarh –160 019 (India)  
( An ISO 9001 : 2015 Certified Institute )



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[www.nitttrchd.ac.in](http://www.nitttrchd.ac.in)



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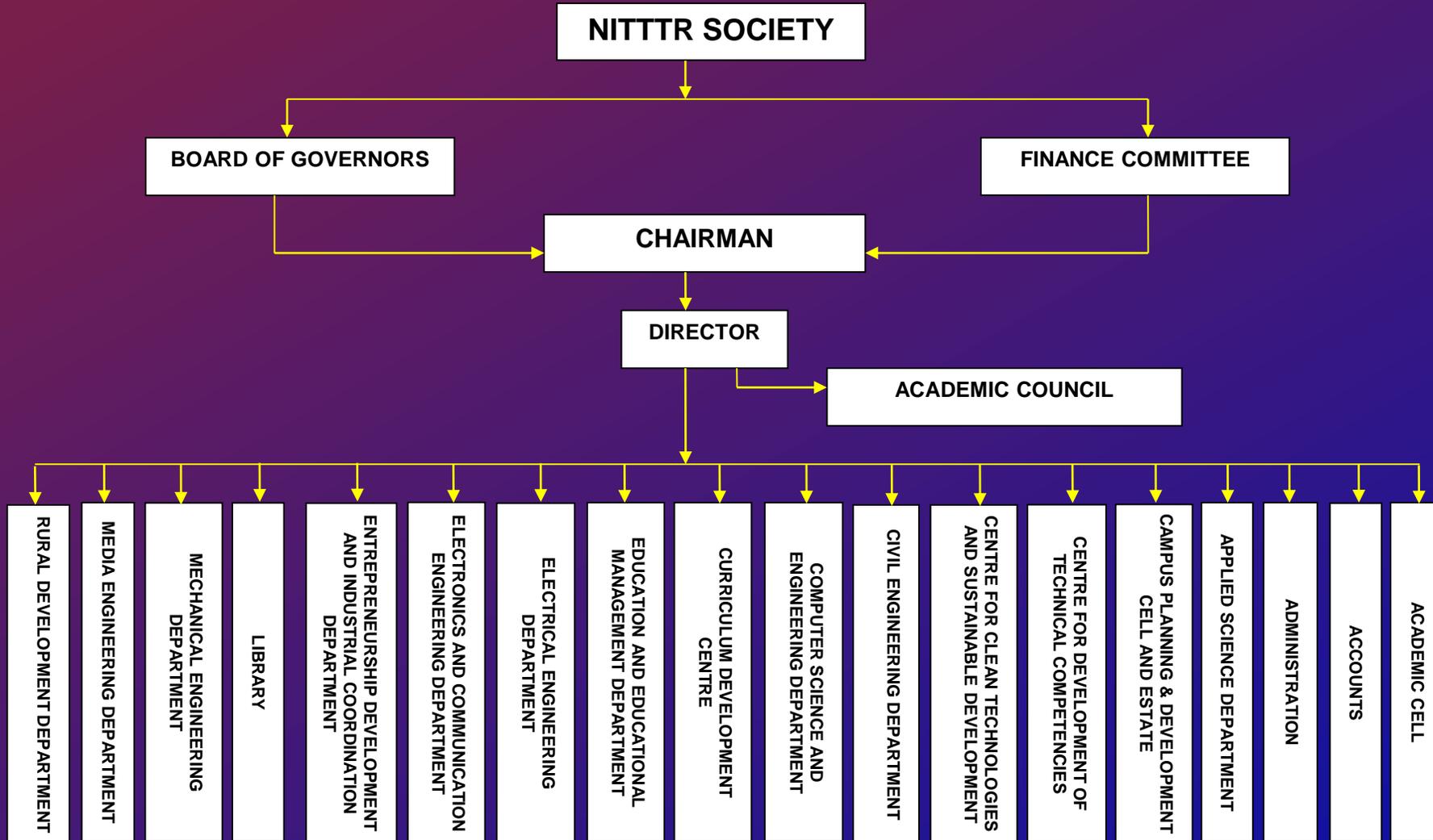
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Teaming Together

# ORGANISATIONAL STRUCTURE OF NITTTR CHANDIGARH



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Audited Accounts

**LIST OF MEMBERS OF THE NITTTR CHANDIGARH SOCIETY AS ON  
31.03.2020**

<b>Sr. No.</b>	<b>Name and Designation with full address</b>	<b>Status</b>
1.	<b>Sh.Jagdish Rai Singal</b> Board of Governors, NITTTR, Chandigarh. Eastman Cast & Forge Limited G.T.Road, Near Airport Ludhiana – 141 120 (India)	<b>Hon'ble Chairman</b>
2.	<b>Mrs. Darshana M. Dabral</b> Joint Secretary and Financial Adviser (IFD) Department of Higher Education, Ministry of Human Resource Development, Govt. of India, Shastri Bhawan, NEW DELHI – 110 115	<b>Member</b>
3.	<b>Shri Madhu Ranjan Kumar</b> Joint Secretary (DL,BP & A) Department of Higher Education, Ministry of Human Resource Development, Govt. of India, Shastri Bhawan, NEW DELHI – 110 115	<b>Member</b>
4.	<b>Prof. Raj Kumar</b> Hon'ble Vice Chancellor Panjab University Chandigarh 160 014	<b>Member</b>
5.	<b>Director</b> Director of Technical Education Government of Telengana 2nd Floor, Vidya Bhavan Opp. to Latha Talkies, Nampally Hyderabad 500 001	<b>Member</b>

**LIST OF MEMBERS OF THE NITTTR CHANDIGARH SOCIETY AS ON  
31.03.2020 (contd..)**

<b>Sr. No.</b>	<b>Name and Designation with full address</b>	<b>Status</b>
6.	<b>Director</b> Directorate of Technical Education Bay No. 07-12, Sector - 4 PANCHKULA 134 109 (Haryana)	<b>Member</b>
7.	<b>Director</b> Directorate of Technical Education Government of Uttarakhand NCCBlock Campus, (SRINAGAR) Pauri Garhwal Pin Code 246 174	<b>Member</b>
8.	<b>Director</b> Director of Technical Education Government of Maharashtra 3 Mahapalika Marg Elphinstone Technical Institute Campus Mumbai 400 001	<b>Member</b>
9.	<b>Director</b> Directorate of Technical Education J & K Government of J & K Government Polytechnic Premises Bikram Chowk Jammu – 180 004 (J&K)	<b>Member</b>
10.	<b>Prof. (Dr.) L.N. Mittal</b> House No. 845-P, Sector-4 Panchkula – 134 112	<b>Member</b>
11.	<b>Prof. (Dr.) S.S. Pattnaik</b> Member-Secretary National Institute of Technical Teachers' Training and Research Sector – 26 CHANDIGARH – 160 019.	<b>Member-Secretary</b>

**LIST OF MEMBERS OF THE BOARD OF GOVERNORS OF NITTTR,  
CHANDIGARH AS ON 31.03.2020**

Sr.No.	Name and Designation with full Address	Status
1.	<p><b>Sh. Jagdish Rai Singal</b> Board of Governors, NITTTR, Chandigarh. Eastman Cast &amp; Forge Limited G.T.Road, Near Airport Ludhiana – 141 120 (India)</p>	<p style="text-align: center;"><b>Hon'ble Chairman</b></p>
2.	<p><b>Mrs. Darshana M. Dabral,</b> Joint Secretary and Financial Adviser (IFD) Department of Higher Education, Ministry of Human Resource Development, Govt. of India, Shastri Bhawan, NEW DELHI – 110 115</p>	<p style="text-align: center;"><b>Member</b></p>
3.	<p><b>Shri Madhu Ranjan Kumar,</b> Joint Secretary (DL,BP &amp; A) Department of Higher Education, Ministry of Human Resource Development, Govt. of India, Shastri Bhawan, NEW DELHI – 110 115</p>	<p style="text-align: center;"><b>Member</b></p>
4.	<p><b>Prof. Raj Kumar</b> Hon'ble Vice Chancellor Panjab University Chandigarh 160 014</p>	<p style="text-align: center;"><b>Member</b></p>
5.	<p><b>Director</b> Director of Technical Education Government of Telengana 2nd Floor, Vidya Bhavan Opp. to Latha Talkies, Nampally Hyderabad 500 001</p>	<p style="text-align: center;"><b>Member</b></p>

**LIST OF MEMBERS OF THE BOARD OF GOVERNORS OF NITTTR,  
CHANDIGARH AS ON 31.03.2020 (contd..)**

<b>Sr.No.</b>	<b>Name and Designation with full Address</b>	<b>Status</b>
6.	<b>Sh. Subhash Chander Ralhan</b> Managing Director Sri Tools Industries, E- 183,184, &185, Phase IV Focal Point Ludhiana – 141 010	<b>Member</b>
7.	<b>Professor. Sachin Maheshwari</b> Division of Manufacturing Processes and Automation Engineering Netaji Subhas Institute of Technology (NSIT) Azad Hind Fauj Marg Sector – 3 Dwarka Delhi – 110 078.	<b>Member</b>
8.	<b>Director</b> Directorate of Technical Education Bay No. 07-12, Sector - 4 PANCHKULA 134 109 (Haryana)	<b>Member</b>
9.	<b>Director</b> Directorate of Technical Education Government of Uttarakhand NCC Block Campus, (SRINAGAR) Pauri Garhwal - 246174	<b>Member</b>
10.	<b>Prof. (Dr) L.N.Mittal</b> House No. 845-P, Sector – 4 Panchkula – 134 112	<b>Member</b>

**LIST OF MEMBERS OF THE BOARD OF GOVERNORS OF NITTTR,  
CHANDIGARH AS ON 31.03.2020 (contd..)**

<b>Sr.No.</b>	<b>Name and Designation with full Address</b>	<b>Status</b>
11.	<p><b>Director</b>                      Directorate of Technical Education J &amp; K                      Government of J &amp; K                      Government Polytechnic Premises                      Bikram Chowk                      Jammu – 180 004 (J&amp;K)</p>	<b>Member</b>
12.	<p><b>Director</b>                      Director of Technical Education                      Government of Maharashtra                      3 Mahapalika Marg                      Elphinstone Technical Institute Campus                      Mumbai 400 001</p>	<b>Member</b>
13.	<p><b>Prof. (Dr.) SS Dhami</b>                      Professor &amp; Head                      Mechanical Engineering Department                      National Institute of Technical Teachers Training &amp;                      Research, Chandigarh - 160019</p>	<b>Member</b>
14.	<p><b>Prof. (Dr.) S.S. Pattnaik</b>                      National Institute of Technical Teachers' Training and                      Research                      Sector – 26                      CHANDIGARH – 160 019.</p>	<b>Member- Secretary</b>

**LIST OF MEMBERS OF THE FINANCE COMMITTEE OF NITTTR,  
CHANDIGARH AS ON 31.03.2020**

Sr.No.	Name and Designation with full Address	Status
1.	<p><b>Sh. Jagdish Rai Singal</b> Board of Governors, NITTTR, Chandigarh. Eastman Cast &amp; Forge Limited G.T.Road, Near Airport Ludhiana – 141 120 (India)</p>	<b>Hon'ble Chairman</b>
2.	<p><b>Mrs. Darshana M. Dabral</b> Joint Secretary and Financial Adviser (IFD) Department of Higher Education, Ministry of Human Resource Development, Govt. of India, Shastri Bhawan, NEW DELHI – 110 115</p>	<b>Member</b>
3.	<p><b>Shri Madhu Ranjan Kumar</b> Joint Secretary (DL,BP &amp; A) Department of Higher Education, Ministry of Human Resource Development, Govt. of India, Shastri Bhawan, NEW DELHI – 110 115</p>	<b>Member</b>
4.	<p><b>Sh. K.K. Kataria</b> Director, Technical Education Government of Haryana Bays No. 7-12, Sector 4 Panchkula 134 112</p>	<b>Member</b>
5.	<p><b>Prof. (Dr.) S.S. Pattnaik</b> Director National Institute of Technical Teachers Training &amp; Research, Chandigarh - 160019</p>	<b>Member-Secretary</b>

## LIST OF MEMBERS OF THE ACADEMIC COUNCIL AS ON 31.03.2020

Sr.No.	Name and Designation with full address	Status
1.	<b>Prof. (Dr.) S.S. Pattnaik</b> Director Academic Council, National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Chairman</b>
2.	<b>Prof. D P Agrawal</b> Former Chairman UPSC New Delhi	<b>Member</b>
3.	<b>Mr. Tarikdeep Singh</b> Principal Group Head of IoT Solutions Tech Mahindra	<b>Member</b>
4.	<b>Mr. Vikrant Jain</b> Programme Manager Tech Mahindra	<b>Member</b>
5.	<b>Prof. Sandeep Sancheti</b> Vice Chancellor SRM Institute of Science and Technology SRM Nagar Kattankulathru, Tamil Nadu	<b>Member</b>
6.	<b>Prof. Jagat Bhushan Nadda</b> Director Consortium for Educational Communication IUAC Campus New Delhi	<b>Member</b>
7.	<b>Prof. Rajive Kumar</b> Member Secretary AICTE New Delhi	<b>Member</b>

**LIST OF MEMBERS OF THE ACADEMIC COUNCIL AS ON 31.03.2020  
(contd..)**

<b>Sr.No.</b>	<b>Name and Designation with full address</b>	<b>Status</b>
8.	<b>Prof. (Dr.) P K Tulsi</b> Professor Education and Educational Management Department National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>
9.	<b>Prof. (Dr.) B S Pabla</b> Professor Mechanical Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
10.	<b>Prof. (Dr.) S K Dhameja</b> Professor and Head, EDIC, Dean Academics and Int'l Affairs National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
11.	<b>Prof. (Dr.) A B Gupta</b> Professor & Head, CDC National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
12.	<b>Prof. (Dr.) Sanjay Kumar Sharma</b> Professor and Head, Civil Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
13.	<b>Prof. (Dr.) Hemant Sood</b> Professor Civil Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>

**LIST OF MEMBERS OF THE ACADEMIC COUNCIL AS ON 31.03.2020  
(contd..)**

<b>Sr.No.</b>	<b>Name and Designation with full address</b>	<b>Status</b>
14.	<b>Prof. (Dr.) Sunil Dutt</b> Professor & Head EMGT Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
15.	<b>Prof. (Dr.) B C Choudhary</b> Professor & Head Applied Science Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
16.	<b>Prof. (Dr.) Rakesh Wats</b> Professor & Head, Media Centre National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
17.	<b>Prof. (Dr.) Maitreyee Dutta</b> Professor and Head Computer Science & Engineering & ETV Department National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>
18.	<b>Prof. (Dr.) S S Dhani</b> Professor & Head Mechanical Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
19.	<b>Prof. (Dr.) C Rama Krishna</b> Professor Computer Science & Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>

**LIST OF MEMBERS OF THE ACADEMIC COUNCIL AS ON 31.03.2020  
(contd..)**

<b>Sr.No.</b>	<b>Name and Designation with full address</b>	<b>Status</b>
20.	<b>Prof. (Dr.) U N Roy</b> Professor and Head Rural Development Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
21.	<b>Prof. (Dr.) Lini Mathew</b> Professor and Head Electrical Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>
22.	<b>Prof. (Dr.) Poonam Syal</b> Professor and Head Rural Development Department National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>
23.	<b>Prof. (Dr.) Rajesh Mehra</b> Professor and Head, Electronics & Communication Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
24.	<b>Prof. (Dr.) Amod Kumar</b> Professor Electronics & Communication Engineering Deptt National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>
25.	<b>Prof. (Dr.) Srinivasa K G</b> Professor ICSE Dept., and I/c Library National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>

**LIST OF MEMBERS OF THE ACADEMIC COUNCIL AS ON 31.03.2020  
(contd..)**

<b>Sr.No.</b>	<b>Name and Designation with full address</b>	<b>Status</b>
26.	<b>Prof. (Dr.) Sandeep S Gill</b> Professor and Head ECE Department National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>
27.	<b>Prof. (Dr.) Pankaj Sharma</b> Professor and Head Applied Science Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
28.	<b>Prof. (Dr.) Piush Verma</b> Professor Electrical Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
29.	<b>Prof. (Dr.) Rupinder Singh</b> Professor Mechanical Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member</b>
30.	<b>Er. Sunil D Jassal</b> Associate Professor Mechanical Engineering Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
31.	<b>Dr. Meenakshi Sood</b> Associate Professor CDC Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>

**LIST OF MEMBERS OF THE ACADEMIC COUNCIL AS ON 31.03.2020  
(contd..)**

<b>Sr.No.</b>	<b>Name and Designation with full address</b>	<b>Status</b>
32.	<b>Dr. Hemant Kumar Vinayak</b> Associate Professor EDIC Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
33.	<b>Ms. Shano Solanki</b> Assistant Professor ICSE Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
34.	<b>Ms. Garima Saini</b> Assistant Professor ECE Department National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
35.	<b>Er. P K Singla</b> FIA National Institute of Technical Teachers Training & Research, Chandigarh - 160019	<b>Member</b>
36.	<b>Prof. (Dr.) SS Banwait</b> Dean, Academics and R&D National Institute of Technical Teachers Training & Research, Chandigarh – 160019	<b>Member Secretary</b>



# The Institute

National Institute of Technical Teachers Training and Research, Chandigarh, is one of the four such National Institutes in the country with focus on development of technical education in the country.

However, being situated in the northern region, major focus is towards the states of Haryana, Himachal Pradesh, Jammu and Kashmir, Punjab, Rajasthan, Uttar Pradesh, Uttarakhand, Delhi and Union Territory of Chandigarh. Presently, the outreach of the programs and activities of the Institute cover the entire gamut of technical education. It is now reckoned as a resource Institute for the technical education system providing services to its clientele covering faculty/staff of technical institutions (Engineering Colleges & Polytechnics), officials of directorates/boards of technical education, central and state government departments, industry, students from technical institutes and community. NITTTR, Chandigarh is an ISO 9001- 2015 certified organisation.

NITTTR is an autonomous organisation registered under the Societies Registration Act 1860 with Director as the Executive Head. It is managed by a Board of Governors. The Institute is situated in a well-developed campus in Sector 26, Chandigarh covering an area of over 15.98 acre housing the academic buildings, hostels, guest house and residential accommodation for faculty and staff. It also has residential campus in sectors 29 and 42 of Chandigarh with land areas of 0.75 acre and 1.25 acre respectively. The Institute is about 10 kms from Inter State Bus Terminus (ISBT) in Sector 43 and 05 kms each from Chandigarh Railway Station and ISBT, Sector 17. It is 21 km from Chandigarh Airport. The clean campus with innovative digital approach makes NITTTR unique not only in city but also in the country. The lush green campus is secured with CCTV cameras and has integrated digital developments to its routine activities. Innovation in digital pedagogy, integrating social media and providing low cost solution in teaching learning using open source tools are many such focal points of the Institute as it is now advocating for its proposed socio-digital pedagogy. In the recent past, the Institute has developed a strong tie up with industries to become a solution provider to strengthen the Atam Nirbhar Bharat and Unnat Bharat mission.

# VISION

*To be a lead resource Institute for promoting excellence in technical education system*

*“To succeed in your mission, you must have single-minded devotion to your goal.”*

*- Dr. A. P. J. Abdul Kalam*

# MISSION

- *To offer continuing education and training programs for the faculty and staff of the technical education system.*
- *To develop need-based curricula for technical education program.*
- *To develop instructional material to enhance effectiveness of teaching-learning process.*
- *To undertake research and development in engineering & technology and technical education.*
- *To provide extension and consultancy services to technical education system.*

# BROAD OBJECTIVES OF THE INSTITUTE

*To provide professional education and training for teachers of engineering and technology disciplines in technical institutions for advancement of learning towards promoting excellence in technical education and industry.*

*To strive for continuous improvement in instruction and research in engineering and technology disciplines and research in management of technical education.*

*To actively support the growth and quality improvement of technical education in the country through involvement in activities at national and state levels.*

## Operational Objectives

- *To act as a centre for offering quality training programs for teachers as per need of the system, covering the entire gamut of technical education including polytechnics, engineering colleges, vocational and management education at national level*
- *To arrange for practical training of technical teachers in industries*
- *To undertake systematic research to provide research inputs for development of technical education, training systems and its management*

- *To undertake action research for development of innovative methods, processes and practices for improvement of teaching learning environment in technical and vocational education institutions*

# Operational Objectives (contd..)

- *To design new instructional system and strategies for production of online learning materials*
- *To develop and disseminate learning resources like Text books, Laboratory Manuals, Video Programs, Computer Assisted Instructional Multimedia Packages to technical and vocational institutions and other organisations*
- *To offer programs for technical teachers through SWAYAM and NCTEL web portal*
- *To offer courses/programs for technical and vocational teachers to suit overseas demand especially for SAARC and ASEAN countries*
- *To collaborate with community and industry in organising Continuing and Nonformal vocational education programs*
- *To undertake consultancy and extension work for industry, technical institutions/organizations*
- *To provide support services to Government of India schemes related to technical and vocational education system and as entrusted by MHRD, Government of India, from time to time*
- *To cooperate with educational or other institutions in any part of the world having objectives wholly or partly similar to those of the institute by exchange of teachers and scholars and generally in such manner as may be conducive to their common objectives*

***The Institute is continually striving to achieve its stated objectives and remain in the forefront in all its functional areas.***



***Institute is committed to provide high quality and customized education, training, research and development and extension services to technical and vocational education system, industry and community. The Institute shall develop leadership in technical teachers' training and provide educational products and services to enable the technical education system to achieve excellence internationally.***

# **QUALITY POLICY (ISO 9001-2015)**

# Leadership Approach

**“Take risks in your life If you win, you can lead! If you lose, you can guide!”**

**-Swami Vivekananda**

**“ Partnering builds *Strength*  
Networking creates *Wealth*  
Empowering leads *Progress* ”**

**Beliefs**

**Approach**

**“ United we *Perform*  
Together we *Achieve*  
Team we *Win* ”**

**Education & Training Programs**

**Curriculum Development**

**Instructional Material Development**  
*(mainly focusing on digital resources or MOOCs for Swayam and NCTEL)*

**Research and Development**

**Extension Services**

**Consultancy in Technical Education and Allied Areas**

**To achieve its stated objectives, the Institute undertakes the following spectrum of activities**

## **PROGRAMS & ACTIVITIES**

**Keeping in view the emerging needs of the country, the Institute is presently actively involved in the following areas as well:**

- *Development of various instructional resources with emphasis on digital content including educational video films and e content generation providing easy access to the users across the nation. This also includes development and offering programs through MOOCs.*
- *Continuing Education for Working Engineers/ Technicians/ Managers*

***In addition to the above programs and activities, the Institute offers consultancy services to international, national and state level organisations in the above stated areas.***



# MANAGEMENT

The Institute is managed by a Board of Governors, which is responsible for its general direction and control, as laid down in the Memorandum of Association and Rules and Regulations of the National Institute of Technical Teachers Training and Research, Chandigarh Society. The Director is the Principal Academic and Executive Officer and also an ex-officio member secretary of the Society/Board/Finance Committee. Under provisions of the Memorandum of Association (MoA), the Board of Governors is assisted by the following committees:

- *Finance Committee*
- *Academic Council*



**Director of the Institute is the  
Chairman of the Academic Council**

# Achievement Highlights

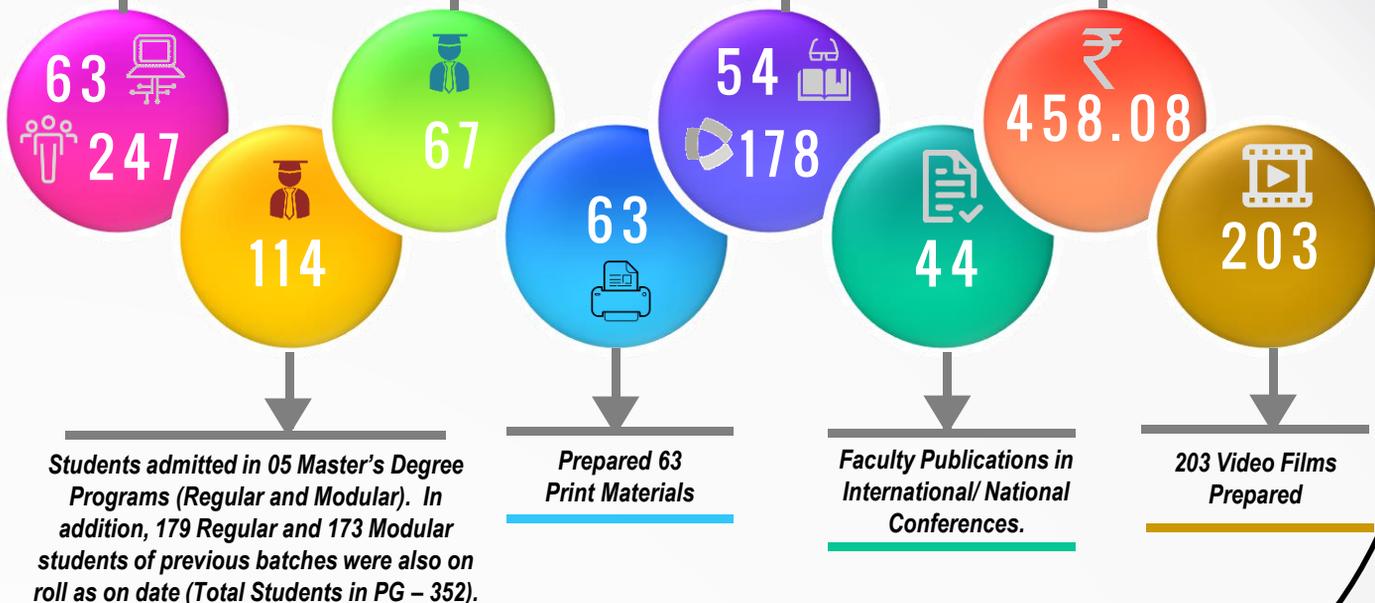
*Achievements of the Institute are reported under 05 major areas viz; Staff Development & Education, through Training & Education; Curriculum Development & Revision; Instructional Material Development & Implementation; Research and Development and Extension Services and Consultancy. Distinctive programs and activities undertaken during the year are as under:*

Conducted 63 courses through ICT & 247 short term courses through contact mode. Total 12713 participants are trained in 2019-20.

Students on roll for Ph.D. Programs in different disciplines

Faculty publications in 54 SCI journals and 178 in other international and national journals

Net Consultancy earned worth 458.08 Lakhs



**Total participants trained: 43897**

Launched ARPIT course through SWAYAM on Big Data Analytics in Smart Grid. The rating of the course was 4.8 out of 5 with a total participation of 8233.

Launched 3 AICTE-NITTT Modules on Creative problem solving, Innovation, and Meaningful R & D, Communication Skills, Modes and Knowledge Dissemination and Institutional Management and Administrative Procedure. Total number of Participants are 16022.

Institute Re-Launched 3 SWAYAM MOOC Courses on Research in Technical Education, Self learning Material Development and Graphics and Animation Development . Total number of Participants are 4589.

4 MOUs signed with Technical Institutions and Industries i.e., uLektz Learning Solutions Pvt. Ltd. , Hardware in Loop (HIL) Centre of Excellence with Typhoon HIL, Switzerland and Quarbz Infotech Pvt. Ltd, Kanpur, MC Chandigarh and Eastman Cast and Forge Ltd., Ludhiana for Digital Marketing

# Achievement Highlights

29

Participants attended the National Seminar on New Frontiers in Cloud and Edge/Fog Computing for Big Data & IoT on 23.04.2019.



Conference on Need of Entrepreneurship Development at Schools for School Principals on 17<sup>th</sup> Dec, 2019.



99

Participants attended the Seminar on Writing Scientific Papers for Quality Journals held on 05.07.2019.



37

Participants attended the International Conference on IoT inclusive life 2019 (AICTE Sponsored) held on 19-20 Dec, 2019.

National Seminar on “Unnat Bharat Abhiyan: Prospects and Challenges” from 28-29 Nov, 2019.



Conducted TechSpardha 2019, a prototype competition for Post Graduate Students from 5<sup>th</sup> – 7<sup>th</sup> September, 2019.



More than 250



Innovative Rural Development Conclave (ERDC) – 2019 held on 18<sup>th</sup> Dec, 2019.



Participants attended the 3<sup>rd</sup> International Conference on Clean Technologies for Sustainable Development held on 20-21 Feb, 2019.

National Conference on Biomedical Engineering held from January 22 – 24, 2020.



Sansad Adarsh Gram Yojna (SAGY) Conference for Vice Chancellors/Directors of Colleges/Universities.



# Strengthening Expertise *(filling the Vacant Positions)*

Prof. (Dr.) Rupinder  
Singh



Prof. (Dr.) Pankaj  
Sharma

Prof. (Dr.) Piush Verma  
*(Against Lien Vacancy)*



Dr. Ashok Kumar

Dr. Balwinder Raj



Dr. Balwinder Singh

Dr. Harsh Wardhan  
Samalia



Dr. Hemant Kumar  
Vinayak

Dr. Meenakshi Sood



Dr. Ritula Thakur

**10 Professors (9+1 on lien vacancy) and 7 Associate Professors**  
**under Direct Recruitment**

*(This year 3 Professors and 7 Associate Professors joined in different  
departments)*

**CAS Promotion**

**1 Professor and 3 Assistant Professors (Stage 1 to Stage II)**

# GLIMPSES OF EVENTS

## THE THREE-DAY ENTREPRENEURSHIP AND RURAL DEVELOPMENT CONCLAVE (ERDC – 2019)



The valediction of the conference was chaired by Shri Bandaru Dattatreya, His Excellency Governor of Himachal Pradesh. Shri Virender Kanwar, Hon'ble Minister, Rural Development of Himachal Pradesh and Dr. Gulshan Sharma, DG of ICSI Delhi were the guests of honour. Prof. S S Pattnaik, Director of NITTTR Chandigarh welcomed the guests.

## SCIENTIFIC COMMUNICATION AT NISCAIR AND ART OF PAPER WRITING

DR. SANJAY SEN GUPTA  
PRINCIPAL SCIENTIST  
JOURNAL OF SCIENTIFIC & INDUSTRIAL RESEARCH  
PERIODICAL DIVISION  
NISCAIR, DR K. S. KRISHNAN MARG  
NEW DELHI-110012  
E-mail: ssg@niscair.res.in

## SEMINAR ON WRITING SCIENTIFIC PAPERS FOR QUALITY JOURNALS

The Institute organized the seminar on "Writing Scientific Papers for Quality Journals" in Institute auditorium on July 5, 2019 at 10:30 am. Dr. Sanjay Sengupta, Principal Scientist, CSIR-National Institute of Science Communication & Information Resources, New Delhi was the key resource person. All the faculty, research scholars and the ME students attended the seminar. Dr. Sanjay Sengupta explained the various aspects that the prospective authors should consider to get their manuscript published in quality journals.

## NATIONAL CONFERENCE ON BIOMEDICAL ENGINEERING



A three day National Conference on Biomedical Engineering was organised by Electronics and Communication Engineering Department, NITTTR, Chandigarh from January 22 – 24, 2020.

# GLIMPSES OF EVENTS

## INTERNATIONAL CONFERENCE ON IOT INCLUSIVE LIFE (ICIIL-2019)



*The two-day from 19<sup>th</sup> to 20<sup>th</sup> December, 2019 conference was inaugurated by the Chief Guest Sh. Shwait Malik ji MP Raja Sabha Punjab. In his inaugural address, though brief but inspiring, he introduced the initiatives taken by our prime minister. He considered this conference as a platform where researchers throughout the country can collaborate with NITTTR and can contribute for progressive and digital India. The Guests of Honour, Sh. Ram Gopal Ji, Prof. Gurdeep Singh and Prof. Mamum also highlighted the use of such conferences. In this conference total 104 papers were received out of which 37 were presented.*



## National Seminar on New Frontier in Cloud & Edge/Fog Computing for Big Data & IoT

# GLIMPSES OF EVENTS

The third International Conference on Innovative Technologies for Clean and Sustainable Development was organized at NITTTR, Chandigarh from February 19- 21, 2020. The conference was a collective effort of NITTTR and Maharaja Agrasen University, Baddi. The event, sponsored/supported by RILEM, ACI, JCI, Springer, Materials Today: Proceedings, ICI and ICACI, was attended by more than 250 Participants from different countries to present their recent works in the area of clean technology and sustainable development.



One Day Workshop on “Design of Flexible Pavements as per IRC:37-2018” was held at NITTTR, Chandigarh on 10<sup>th</sup> July 2019. Guidelines for the design of Flexible pavements have been recently revised by the Indian Roads Congress in Nov. 2018 . To upgrade the knowledge of professionals of Northern India in line with these guidelines, General Highways And Infracon Pvt. Ltd. (GHA IPL) in association with National Institute of Technical Teachers Training and Research (NITTTR), Chandigarh organized a One Day Workshop on “Design of Flexible Pavements as per IRC:37-2018”. Shri Hussan Lal, Secretary PWD B&R, Punjab presided over the workshop. Dr. Sunil Bose, Deputy Director and Head, Flexible Pavements Division of CRR; Er. Bidur Kant Jha, General Manager (Pavement & Materials) of LEA Associates South Asia Pvt. Ltd.; Dr. Tanuj Chopra of Thapar Institute of Engineering & Technology were the keynote speakers. More than 200 delegates participated in the event.



A regional workshop on Review and Orientation on Unnat Bharat Abhiyaan for the participating Institutes of Punjab and Chandigarh was held on 19<sup>th</sup> July 2019 at NITTTR Campus. Around 30 participants from Punjab and Chandigarh attend the event. This event was jointly sponsored by MHRD and IIT Delhi.



# GLIMPSSES OF EVENTS



Department of Electrical Engineering has entered an MoU with Typhoon HIL, Switzerland for setting up of Industry supported HIL laboratory



Signing of MoU with Municipal Corporation, Chandigarh



Visit of His Excellency Aminu Bello Masari, The Executive Governor of Katsina, Nigeria on 25<sup>th</sup> July, 2019



Awarded the Certificate of Appreciation for Best Autonomous Body in Implementation of National Pension System



Certificate Course on "SUSTAIN AND ENHANCE TECHNICAL KNOWLEDGE IN SOLAR ENERGY SYSTEMS" from 4<sup>th</sup> February, 2020 to 15<sup>th</sup> March, 2020. 19 participants attended



Green Skill Development Programme (GSDP) sponsored by Ministry of Environment Forest & Climate Change, Govt. of India, organized by ENVIS HUB, Department of Environment, Chandigarh Administration and NITTTR, Chandigarh.

# GLIMPSES OF EVENTS



Won Overall Trophy during 12<sup>th</sup> Inter-NITTTTR Sports Meet held at NITTTTR, Bhopal from 19-22 November, 2019



TechSpardha2K19 from 5<sup>th</sup> to 7<sup>th</sup> September, 2019.

## 52<sup>nd</sup> Annual Day Celebrations

**Guests:**

**Sh. L.N. Gupta, IAS**

**Dr. Ashwani Johar**

**Sh. Jagdish Rai Singhal**

The Institute celebrated its 52<sup>nd</sup> Annual day on 7<sup>th</sup> September, 2019.



On this occasion, Outstanding Technical Institution Awards were given to the institutions.

Meritorious students of Master's Degree Programmes were also awarded on the occasion as per detail given below:

Name of student	Branch of ME Programme	CGPA
Satheesan MP	ME Mechanical Engineering (Manufacturing Technology)	7.73
Maninder Singh	ME Construction Technology & Mgt.	8.14
Amrita Saini	ME Computer Science and Engg.	8.52 with Honours
Manish Kumar Soni	ME Electronics and Communication Engg.	8.86 with Honours
Rahul Arora	ME Mechanical Engineering (Manufacturing Technology)	8.40
Charul Sharma	ME Construction Technology & Mgt.	8.38
Raksha Kiran Karda	ME Computer Science and Engg.	8.71 with Honours
Rangoli Singh	ME Electrical Engg. (Instrumentation and Control)	9.14 with Honours
Jagruti	ME Electronics and Communication Engg.	8.82 with Honours
Manish Kumar Soni	ME Electronics and Communication Engg.	8.86 with Honours
Rangoli Singh	ME Electrical Engg. (Instrumentation and Control) (Regular)	9.14 with Honours



NITTTR continued to grow in terms of academic activities, both qualitatively and quantitatively. The qualitative dimensions covered related to continued improvements by way of increased emphasis on applications, case studies and industrial exposure in training programs besides more efficient and effective use of multi-media in teaching-learning process. During 2019-20, the details of the long term and short term training programs conducted by the Institute for faculty/staff of engineering colleges and polytechnics are given below:

## 2.1.1 Long Term Programmes

### 2.1.1 (a) Ph.D. Programs

Institute is an approved Research Centre of Panjab University, Chandigarh, I.K. Gujral Punjab Technical University, Kapurthala and H.P. University, Shimla for Ph.D. Program. As on March 2020, Sixty Seven (67) students are pursuing Ph.D. programs in different disciplines. The Institute is also the coordinator of Ph.D. QIP (Poly) Scheme of AICTE.

### 2.1.1 (b) M.Tech. / M.E. Programs

The Institute offers full-time industry-oriented and practice-based Master's Degree Programs of 02 years' duration affiliated to Panjab University, Chandigarh and approved by AICTE in the following disciplines:

Mechanical Engineering (Manufacturing Technology)
Civil Engineering (Construction Technology and Management)
Computer Science and Engineering
Electrical Engineering (Instrumentation and Control)
Electronics and Communication Engineering

*NITTTR is also offering these Master's Degree Programs on modular basis. The modular program is of 3½ years duration. Modular programs are also duly approved by AICTE and affiliated to Panjab University and mainly for the working personnel who undergo the course work during Summer and Winter break but are evaluated along with the regular students on the same question paper as they appear in the examination with regular students. This unique model of the Institute is a platform for the service personnel to upgrade quality knowledge through a flexi mode degree awarding programme with ensured quality. This programme was launched in the year 2005. Since then majority of the polytechnic faculty members could enhance their qualification from all parts of the country. The Institute got approval from AICTE to start ME in IoT, Robotics and AI but due to rigid affiliation process of PU, Chandigarh these courses could not be launched.*

Admissions made to these programs during 2019-20 are given below:

## MASTER'S DEGREE (REGULAR MODE)

Sr. No.	Name of the Program	No. of Participants				Total	State-wise Break-up
		Polys	Engg. Colleges	Industry	General		
1.	Mechanical Engineering	02	--	--	04	06	HR-3 HP-1 PB-1 J&K-1
2.	Civil Engineering (Construction Tech. & Management)	04	--	07	15	26	PB-4 UP-3 HP-10 J&K-5 OD-1 HR-1 RJ-1 CH-1
3.	Computer Science and Engineering	03	--	--	04	07	HP-2 PB-2 MH-1 CH-1 J&K-1
4.	Electrical Engineering (Instrumentation and Control)	02	--	04	04	10	UP-2 ND-1 J&K-1 PB-1 HP-1 CH-2 MP-1 HR-1
5.	Electronics and Communication Engineering	01	--	01	07	09	PB-3 CH-1 GJ-1 HP-4
	<b>Total:</b>	<b>12</b>	<b>00</b>	<b>12</b>	<b>34</b>	<b>58</b>	

## MASTER'S DEGREE (MODULAR MODE)

Sr. No.	Name of the Program	No. of Participants				Total	State-wise Break-up
		Polys	Engg. Colleges	Industry	General		
1.	Mechanical Engineering	09	--	01	--	10	ND-1 TS-1 RJ-6 J&K-1 CH-1
2.	Civil Engineering (Construction Tech. & Management)	12	--	13	--	25	HP-2 HR-2 UK-3 ND-1 J&K-2 PB-3 TS-1 RJ-7 CH-1, BH-1, WB-1 AP-1
3.	Computer Science and Engineering	08	--	--	--	08	HP-1 RJ-6 WB-1
4.	Electrical Engineering (Instrumentation and Control)	09	--	--	--	09	RJ-5 WB-1 AP-1 PB-1
5.	Electronics and Communication Engineering	03	--	01	--	04	HP-2 CH-1 PB-1
	<b>Total</b>	<b>41</b>	<b>00</b>	<b>15</b>	<b>-</b>	<b>56</b>	

179 (regular) and 173 (modular) students of previous batches are also on roll.

PB–Punjab, UP-Uttar Pradesh, HP-Himachal Pradesh, J&K-Jammu and Kashmir, UK-Uttarakhand, HR-Haryana, CH-Chandigarh, MH-Maharashtra, BH-Bihar, NL-Nagaland, DL-Delhi, JH-Jharkhand, RJ-Rajasthan, TS-Telangana

ME Students on roll

Regular: 179

Modular: 173

Total: 352

## 2.1.2 Short Term Courses (STCs) (Faculty Development Programme)

The Faculty Development Programmes were broadly of 5 categories viz: industry oriented, industry supported, research oriented, skill oriented and advanced level.

The Institute offers need-based and customized short-term courses of one to two weeks' duration for faculty/staff of engineering colleges, polytechnics and working professionals from industry. During the year 2019-20, 310 short-term programs were conducted through contact and ICT mode for faculty/staff of engineering colleges and polytechnics which were attended by 12713 teachers from various states of the country.

Conferences/Seminars, Training Workshops, Curriculum Development Workshops and Students Training etc. were other development programmes conducted by the institute.

### i. Training Programs/Workshops

	Type of Training Programs	No. of Courses/ Programs	No. of Teachers Trained
<b>A)</b>	<b>Short Term Courses</b>		
	Contact Mode	247	4568
	ICT Mode	63	8145
	<b>Total:</b>	<b>310</b>	<b>12713</b>
<b>B)</b>	<b>Conferences/Seminars:</b>		
	(i) International	02	287
	(ii) National	07	530
<b>(C)</b>	<b>Workshops:</b>		
	(i) Training Workshops (other than Curriculum Development Workshop)	17	1131
	(ii) Review and Operational Plan Preparation Workshops	07	147
	<b>Total (A+B+C):</b>	<b>338</b>	<b>14618</b>
<b>D)</b>	<b>Students Training Programs</b>	<b>20</b>	<b>1353</b>
<b>E)</b>	<b>Curriculum Development Workshops</b>	<b>03</b>	<b>112</b>

Total Programmes: 361

A. Total Manpower: 15053

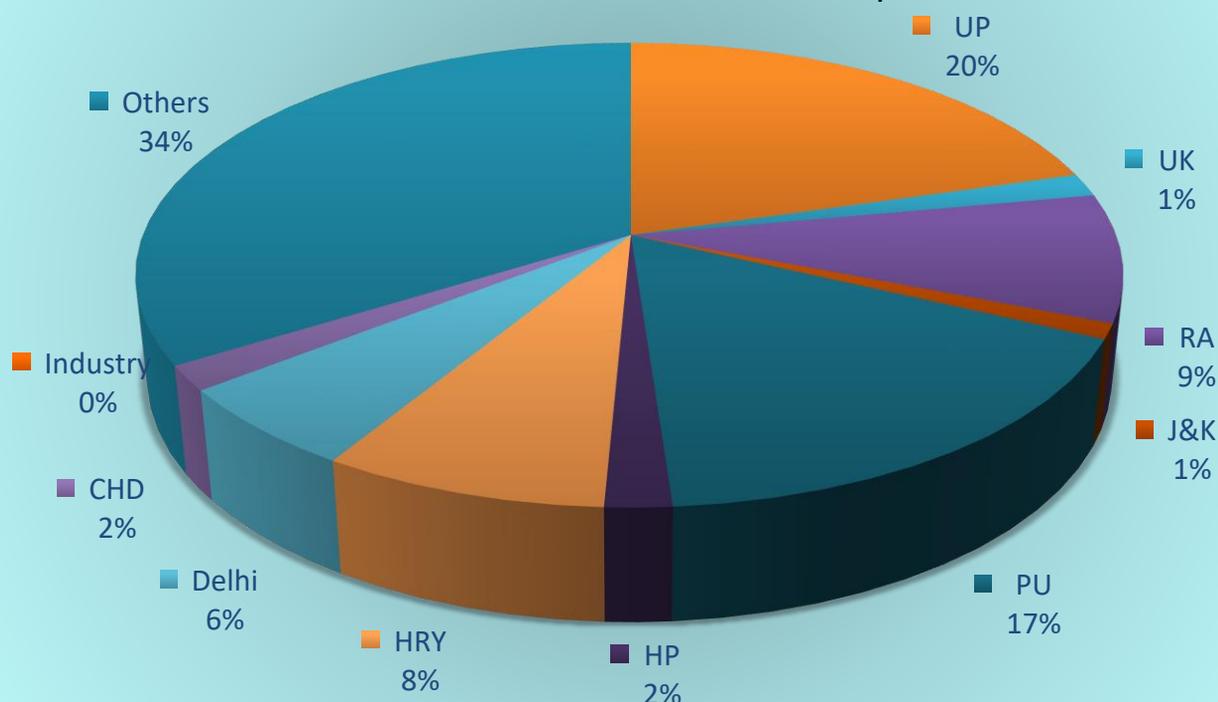
Total Participants in ARPIT Course	8233
Total Participants in AICTE-NITTT Modules	16022
Total Participants in 3 SWAYAM MOOC Courses	4589
<b>B. Total</b>	<b>28844</b>

$$\text{Total (A + B)} = 15053 + 28844 = 43897$$

## STATEWISE PERCENTAGE OF PARTICIPATION IN SHORT TERM COURSES FOR THE YEAR 2019-20

**310**  
Courses

**12713**  
Participants



PU-Punjab, UP-Uttar Pradesh, HP-Himachal Pradesh, J&K-Jammu and Kashmir, UK-Uttarakhand, HR-Haryana, CHD-Chandigarh, DL-Delhi, RJ-Rajasthan, HRY- Haryana

## CONFERENCES AND SEMINARS:

Sr. No.	Title(s)	Dates	Dept.	No. of Participants
1.	New Frontiers in Cloud and Edge/Fog Computing for Big Data & IoT.	23.04.2019	CSE	29
2.	Writing Scientific Papers for Quality Journals	05.07.2019	ECE	99
3.	National Seminar on "Unnat Bharat Abhiyan: Prospects and Challenges"	28-29.11.2019	RD	130
4.	Conference on Need of Entrepreneurship Development at Schools for School Principals.	17.12.2019	EDIC	81
5.	Innovative Rural Development Conclave (ERDC) – 2019	18.12.2019	RD	36
6.	International Conference on IoT inclusive life 2019 (AICTE Sponsored)	19-20.12.2019	CSE	37
7.	Sansad Adarsh Gram Yojna (SAGY) Conference for Vice Chancellor/Directors of Colleges/Universities.	18-20.12.2019	CSE	100
8.	National Conference on Biomedical Engineering	22-24.01.2020	ECE	55
9.	3 <sup>rd</sup> International Conference on Clean Technologies for Sustainable Development.	20-21.02.2020	Civil	250+
	<b>Total:</b>			<b>817</b>

## WORKSHOPS (OTHER THAN CURRICULUM DEVELOPMENT WORKSHOPS)

Sr. No.	Name of the Programme along with dates and venue	Dates	Department	No. of Participants
1.	Setting up Question papers and Answer scripts	16 <sup>th</sup> April, 2019	EMGT	93
2.	Orientation on NSQF	05 <sup>th</sup> June, 2019	CDC	13
3.	Review and Orientation Workshop on Unnat Bharat Abhiyan at NITTTR, Chandigarh	19 <sup>th</sup> July, 2019	Rural Development	33
4.	One Day Workshop on Design of Flexible Pavements As PER IRC- 2018	10 <sup>th</sup> October, 2019	Civil Engineering	192
5.	Battery Management System using Real Time Approach at NITTTR, Chandigarh	11- 12 July, 2019	Electrical Engineering	3
6.	Enhancing Structural Durability with Advanced Waterproofing Solutions	22 <sup>nd</sup> – 23 <sup>rd</sup> August, 2019	Civil Engineering	221
7.	National Workshop on Sustainable and green materials	16 <sup>th</sup> October, 2019	Civil Engineering	145
8.	Swachh Bharat Abhiyan and Unnat Bharat Abhiyan held at NITTTR, Chandigarh	3 <sup>rd</sup> December, 2019	Rural Development	27
9.	Swachh Bharat Abhiyan and Unnat Bharat Abhiyan held at NITTTR, Chandigarh	4 <sup>th</sup> December, 2019	Rural Development	20
10.	Workshop on Cyber Security Project Sponsored by MeitY at Jammu	22 <sup>nd</sup> November, 2019	CSE	202
11.	Workshop on Certified Monitoring and Counselling Skills	9-10 December, 2019	CDC	45
12.	Workshop on Developing curriculum for New Mtech Programme (CSE, ECE, ME)	22 April, 2019	CDC	27
13.	Workshop on Internet D-addiction and Digital Detox	13.04.2019	CDC	40
14.	Workshop for developing and finalising the curriculum of newly proposed M.E in Electrical Engineering (Energy Systems and Smart Grid)	7 <sup>th</sup> May, 2019	Electrical Engineering	6
15.	BOS meeting in M.E.Electrical Engineering (Instrumentation and Control)	30 <sup>th</sup> October, 2019	Electrical Engineering	6
16.	Capacity Building Training Programme	04-06 November, 2019	ETV	29
17.	Cyber Security	16-20 September, 2019	CSE	29
	<b>Total</b>			<b>1131</b>

During the year 2019-20, Institute continued its efforts to promote development of instructional material, both print (text books, laboratory manuals, modules, readers etc.) and non-print (video programme, MOOCs videos). Emphasis was made to develop course material for MOOCs as it is a thrust area of MHRD.

The following instructional materials were produced during the year under report:

### Print Material

Text Books	03
Laboratory Manuals	02
Modules	22
Course Material for Training Programs	36
<b>Total</b>	<b>63</b>

### Print Material

Sr. No.	Text Books
	<b>Text Books</b>
1.	Bio Manufacturing by Prof. Rupinder Singh, Prof. B.S. Pabla and others, Publisher: Springer
2.	Dutta, M., Krishna, C.R., Kumar, R., Kalra, M Proceedings of International Conference on IoT Inclusive Life (ICIIL 2019), NITTTR Chandigarh, India, Springer Lecture Notes on Networks and Systems, March, 2020
3.	Statistical Modelling and Machine Learning Principles for Bioinformatics Techniques, Tools, and Applications by Springer, March 2020 by Prof. K G Srinivasa.

### Non-Print Material (Digital Resources)

Educational Video Films	31
Lecture based Video Films/(NCTEL)	47
Video Lectures uploaded on You Tube	74
Video Films – MOOCs	51
<b>Total</b>	<b>203</b>

## MOOCs Films 82 – Completed

Sr. No.	Name of the Films	Completed	Remarks
1	SWOT Analysis by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
2	Team : Concept and Importance by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
3	Team Building by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
4	CCS( CCA) Rules 1965 by Dr R K Sharma	Completed	In house/Studio Recording done and Post-Production work Completed
5	CCS Conduct Rule by Dr. R K Sharma	Completed	In house/Studio Recording done and Post-Production work Completed
6	Time Concept Value and Time Waster by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
7	Managing Time Effectively by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
8	Attitude Concept and Importance by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
9	Managing Attitude by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
10	Introduction to Big Data Analytics for Smart Grid by Dr Shimmi SL	Completed	In house/Studio Recording done and Post-Production work Completed
11	Strategic and Operational Planning by Dr. Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
12	Essentials of Planning by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
13	Organising: Concept and Importance by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
14	Principles of Organizing by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
15	Institutional Planning by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
16	Authority, Responsibility and Delegation by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
17	Organization Design and structure by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
18	Introduction to Adobe premiere Part I by Savita Bhanot	Completed	In house/Studio Recording done and Post-Production work Completed
19	Introduction to Adobe premiere Part II by Savita Bhanot	Completed	In house/Studio Recording done and Post-Production work Completed
20	Institutional Management by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
21	Institutional Management Process by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
22	Directing by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed

**MOOCs Films 82 – Completed (contd..)**

Sr. No.	Name of the Films	Completed	Remarks
23	Staffing by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
24	Feedback by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
25	Departmental Promotion Committee by Dr R K Sharma	Completed	In house/Studio Recording done and Post-Production work Completed
26	MACP by Dr R K Sharma	Completed	In house/Studio Recording done and Post-Production work Completed
27	Recruitment by Dr R K Sharma	Completed	In house/Studio Recording done and Post-Production work Completed
28	Training and Development by Dr R K Sharma	Completed	In house/Studio Recording done and Post-Production work Completed
29	Adobe premeire Part III By Savita Bhanot	Completed	In house/Studio Recording done and Post-Production work Completed
30	Adobe premeire Part IV By Savita Bhanot	Completed	In house/Studio Recording done and Post-Production work Completed
31	Adobe premeire Part V By Savita Bhanot	Completed	In house/Studio Recording done and Post-Production work Completed
32	Adobe premeire Part VI by Savita Bhanot	Completed	In house/Studio Recording done and Post-Production work Completed
33	Concept of digital Publishing by Dr M Dutta	Completed	In house/Studio Recording done and Post-Production work Completed
34	Digital Publishing History by Dr M Dutta	Completed	In house/Studio Recording done and Post-Production work Completed
35	Emerging trends and Big Data Analytics at distribution level grids by Dr Ranjana Sodhi	Completed	In house/Studio Recording done and Post-Production work Completed
36	D-PMU's: Design and Prototyping	Completed	In house/Studio Recording done and Post-Production work Completed
37	Innovation and Product Development by Dr Karanpal Singh	Completed	In house/Studio Recording done and Post-Production work Completed
38	New Product Development by Dr Karanpal Singh	Completed	In house/Studio Recording done and Post-Production work Completed
39	How to conduct feasibility study by Dr Karanpal Singh	Completed	In house/Studio Recording done and Post-Production work Completed
40	Introduction to creative problem solving and meaningful innovation by Dr PK Tulsi	Completed	In house/Studio Recording done and Post-Production work Completed
41	Creative Problem Soving: Concept and Process by Dr PK Tulsi	Completed	In house/Studio Recording done and Post-Production work Completed
42	Introduction to Machine Learning by Dr Rakesh Dhiman	Completed	In house/Studio Recording done and Post-Production work Completed
43	Cloud computing and Cloud Analytics by Dr.Srinivasa	Completed	In house/Studio Recording done and Post-Production work Completed

**MOOCs Films 82 – Completed (contd..)**

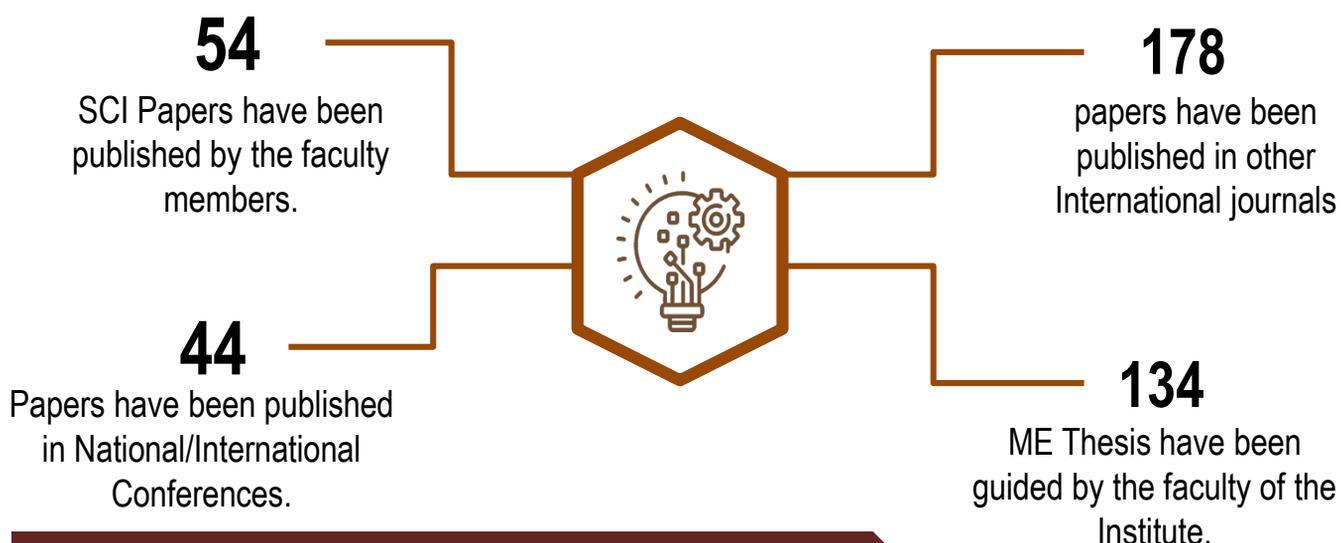
Sr. No.	Name of the Films	Completed	Remarks
44	Edge computing for smart grid by Dr Srinivasa	Completed	In house/Studio Recording done and Post-Production work Completed
45	Artificial Neural Network by Dr M Dutta	Completed	In house/Studio Recording done and Post-Production work Completed
46	Creative Problem Solving (Team work concept and Characteristics) by Dr Pk Tulsi	Completed	In house/Studio Recording done and Post-Production work Completed
47	Team Work Part III by Dr PK Tulsi	Completed	In house/Studio Recording done and Post-Production work Completed
48	PMU: An Intelligent data collection device in Smart Grid by Dr Ritula Thakur	Completed	In house/Studio Recording done and Post-Production work Completed
49	Need for Big Data Analytics by Module I by Dr Shimi SL	Completed	In house/Studio Recording done and Post-Production work Completed
50	E content Need for Big data Analytics by Dr Shimi SL	Completed	In house/Studio Recording done and Post-Production work Completed
51	Logistic Regression by Dr Rakesh Dhiman	Completed	In house/Studio Recording done and Post-Production work Completed
52	Python Basic by Dr Shano Solanki	Completed	In house/Studio Recording done and Post-Production work Completed
53	Data Structure in Python by Shano Solanki	Completed	In house/Studio Recording done and Post-Production work Completed
54	Deep Learning by Dr M Dutta	Completed	In house/Studio Recording done and Post-Production work Completed
55	Demo of NN implementation of Time series of Data in google colab using Python by Dr M Dutta	Completed	In house/Studio Recording done and Post-Production work Completed
56	Implementation of CNN of Imdb data in google colab using python by Dr M Dutta	Completed	In house/Studio Recording done and Post-Production work Completed
57	Functions in Python by Shano Solanki	Completed	In house/Studio Recording done and Post-Production work Completed
58	Arrays in Python by Shano Solanki	Completed	In house/Studio Recording done and Post-Production work Completed
59	Setup and installation of Python and Jupiter notebook by Amit Doegar	Completed	In house/Studio Recording done and Post-Production work Completed
60	Data and File handling by Amit Doegar	Completed	In house/Studio Recording done and Post-Production work Completed
61	Introductory Moocs on Communication skills, modes and knowledge dissemination by AMandeep Kaur	Completed	In house/Studio Recording done and Post-Production work Completed
62	Managing Smart Goals by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
63	Motivation: concept, Process and kinds by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed

**MOOCs Films 82 – Completed (contd..)**

Sr. No.	Name of the Films	Completed	Remarks
64	Motivating self and others by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
65	Theories of Motivation by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
66	Mentoring for Improving Performance by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
67	Support Vector Machine by Dr Rakesh dhiman	Completed	In house/Studio Recording done and Post-Production work Completed
68	Coaching for improving performance by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
69	Counselling for improving performance by Dr Sunil Dutt	Completed	In house/Studio Recording done and Post-Production work Completed
70	Introductory video of Institutional management and Administrative procedures by Dr R K Wats	Completed	In house/Studio Recording done and Post-Production work Completed
71	Unsupervised Learning by Dr Rakesh Dhiman	Completed	In house/Studio Recording done and Post-Production work Completed
72	Institutional Communication internal + external: Concept and process by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
73	Barrier to Communication by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
74	Communication skill for effectiveness by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
75	Managing Planned changes by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
76	Managing creativity and Innovation by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
77	Establishing Climate for creativity and innovation by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
78	Monitoring and control by Dr RK Wats	Completed	In house/Studio Recording done and Post-Production work Completed
79	Institutional administration and Management by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
80	Institutional Evaluation : Concept and Importance by Dr Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
81	Designing effective institutional control system by Dr. Rakesh Wats	Completed	In house/Studio Recording done and Post-Production work Completed
82	Overview of Deep Learning by Srinivasa KG	Completed	In house/Studio Recording done and Post-Production work Completed



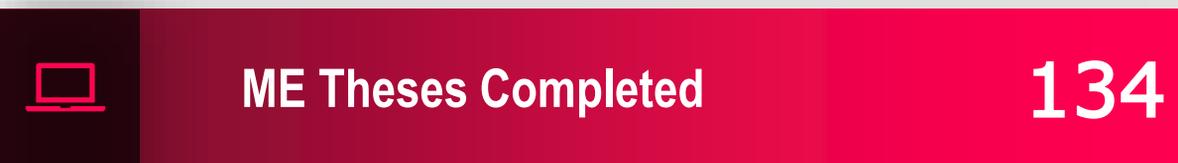
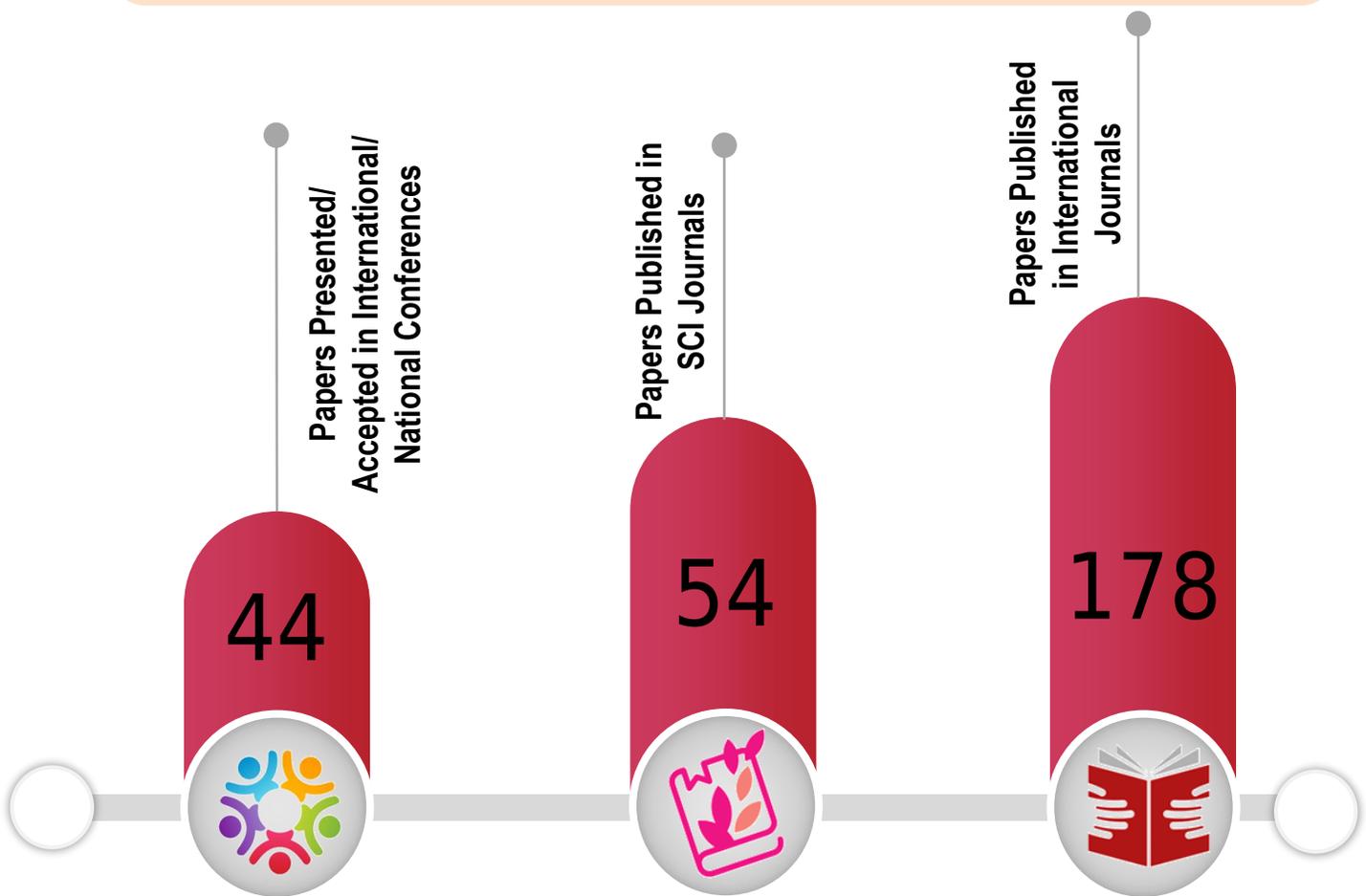
Research and Development activities in technology and technical education form an important aspect of the Institute's programme. Following data shows the contribution of faculty during the year 2019-20.



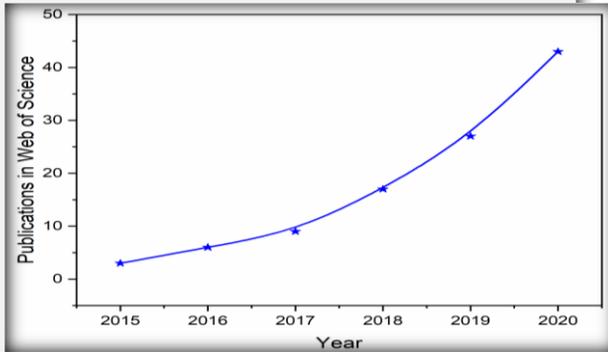
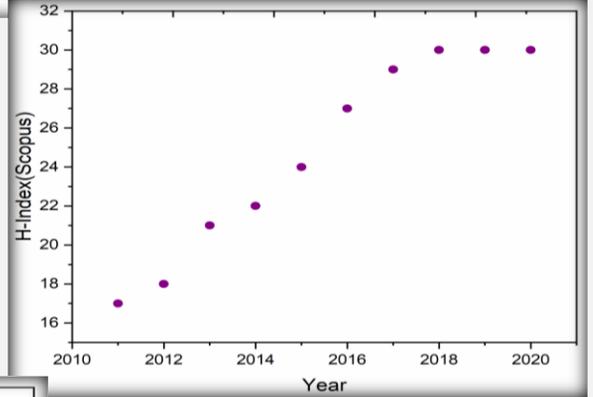
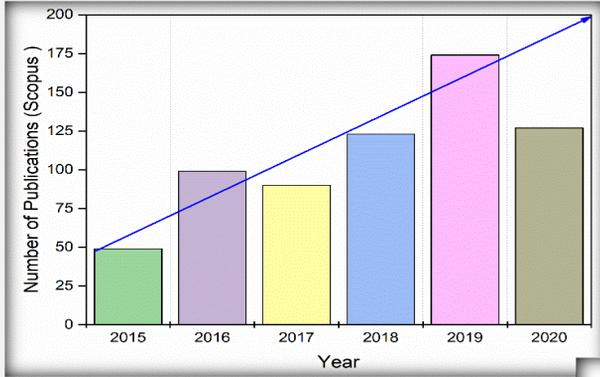
### List of Students Awarded Doctoral Degree

Name of the Student	Title	Name of the Supervisor
Jasleen Kaur	Parametric Study of Metal Flow in Closed Die Forging	Dr. B.S Pabla & Dr. SS Dhami
Deepam Goyal	Development of Proactive Non-Contact Condition Monitoring System for Rotating Machine-Elements.	Dr. B.S Pabla & Dr. SS Dhami
Swar Sushil Kumar	Structural Performance of Densified Small Particles Based RC Joints	Dr. Sanjay Sharma
Rohit Handa	Hybrid Approach for privacy-preserving Multi-Keyword Ranked Search on Encrypted Cloud Data	Dr. C RamaKrishna
Mohd. Junaid Khan	Development of Artificial Intelligence Based Real-Time Maximum Power Point Tracking Controller for a Hybrid Renewable Energy System	Dr. Lini Mathew
Ram Murat Singh	Performance Analysis of a Surface EMG Based Control Scheme of an Exoskeleton Robot	Dr. Lini Mathew
Yogendra Narayan	Hybrid Control of A Robotic Arm Using EEG And EMG Signals	Dr. Lini Mathew & Dr. S Chatterjee
Chirag Arora	Design and Implementation of Metamaterial Inspired Antenna Array for Wireless Communication	Dr. SS Pattnaik
Ajay Abrol	Development of Hybrid Neuro-computing Technique for Analysis of Effect of Electromagnetic Radiations on Electrocardiogram	Dr. SS Pattnaik
Danvir Singh	Design and Development of Multiband Antennas and their SAR Evaluation for Wearable Sensor	Dr. SS Pattnaik
Pushkar Mishra	Design and Development of Meta-fractal Antenna for Remote Guidance.	Dr. SS Pattnaik

In addition to above, one patent have been registered.  
 Indian Patent Application No. 202011003964, Title : Multilevel Inverter was filed on January 29, 2020, in the name of NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH [V & A Ref: 1779-P-02-IN/TIFAC Ref: T.I. (59)/TIFA/2018],  
 Inventors : Mr. Rohit Kumar and Dr. Shimi Sudha Letha.



# H-index (Scopus) of NITTTR, Chandigarh



**NITTTR Chandigarh**  
National Institute of Technical Teachers Training and Research, Chandigarh  
No verified email

Cited by	Year
A review on various electrochemical techniques for heavy metal ions detection with different sensing platforms	277 2017
Image segmentation techniques 1	250 2012
A review of metaheuristic scheduling techniques in cloud computing	229 2015
The vibration monitoring methods and signal processing techniques for structural health monitoring: a review	168 2016
Increasing trend of wearables and multimodal interface for human activity monitoring: A review	146 2017
Modeling of solar PV module and maximum power point tracking using ANFIS	126 2014
Condition based maintenance of machine tools—A review	94 2015
A novel approach for load balancing in cloud data center	91 2014
Tuning of microstrip antenna on ferrite substrate	90 1993

	All	Since 2015
Citations	8761	7198
h-index	37	35
i10-index	223	171

# Google Citation Index of NITTTR, Chandigarh

## **List of Sponsored Research Projects (Grant Received From Various Agencies)**

1. RPS on SEBOT funded by AICTE
2. R&D project on Cyber Security funded by MeitY
3. FDP on Digital Learning funded by AICTE
4. Conference funded by AICTE
5. STTP funded by AICTE
6. Grant received for 5 AICTE ATAL Programmes
7. Received grant from MHRD for conducting SWAYAM Workshop at NITTTR
8. Conference grant received from DSIR, Ministry of Science and Technology
9. Simulation of Centre of Excellence for Electromechanical System from ABB India Limited, Bangalore
10. Received grant for Margdarshan scheme

**Number of Projects Submitted**

1. 13 FDP proposals sent to MEA for ITEC Programmes
2. 12 Proposals (7 STTPs, 2 FDPs, 2 RPS, 1 GOC) sent to AICTE under AQIS scheme
3. 11 Research proposals sent to different agencies

## Policy Planning and Service to Industry and Community

The Institute has continued to play a proactive role to influence the planning and development of technical education and also collaborated with institutions and organisations at national and international levels having similar objectives. The Institute also provided consultancy services to government, public sector and other national and state level organisations, technical education system and industry in the area of engineering and technology, educational management, curriculum development, entrepreneurship development and rural development.

## Signing of Memorandum of Understanding

Sr.No.	Organisations	Date of Signing	Date of Maturity	Signing Authority
1.	uLektz Learning Solutions Pvt. Ltd. No. 100, Lake View Estate, Kundrathur Main Road, Porur, Chennai	16.05.2019	15.05.2022	Mr. M. Sadeq Sait Chief Executive Officer
2.	Municipal Corporation, Chandigarh	03.12.2019	02.12.2049	Er. Shalinder Singh Chief Engineer, MC Chandigarh
3.	Eastman Cast and Forge Ltd., Ludhiana for Digital Marketing	22.02.2020	21.02.2023	Mr. Nitin, Eastman Cast and Frge Lrd.
4.	Hardware in Loop (HIL) Centre of Excellence with Typhoon HIL, Switzerland and Quarbz Infotech Pvt. Ltd, Kanpur at NITTTTR, Chandigarh	09.08.2019	08.09.2022	Mr. Rados Petrovik, Typhoon HIL

## The major objectives of signing these MoUs are to:

- Develop Learning Management System and STC Management Portal of NITTTTR Chandigarh
- Conduct joint trainings to enhance the learning of faculty through diversified facilities and support of experts.
- To give consultancy for all road projects of Municipal Corporation, Chandigarh
- Support each other's' endeavour in delivery of academic programs and research activities.
- Exchange of scientific and technical information.
- Undertaking collaborative research activities through participation in Nationally and Internationally funded projects.
- Jointly organize events such as seminars, workshops, conferences and training programs.
- Training of students of PG level.
- Collaboratively work for various National Missions.

*Salient Features: To integrate academics with industries*

## Consultancy Projects

*During the year 2018-19, the following consultancy projects were undertaken:*

Sr.No.	Name of Consultancy Project	Status of Project
1.	Testing of Materials, Design, Quality Control <ul style="list-style-type: none"> <li>• Concrete Mix Design</li> <li>• Bituminous Mix Design</li> <li>• Evaluation and Design of overlay for Roads</li> <li>• Testing and Design of New roads</li> <li>• 3<sup>rd</sup> Party Quality Control for Road projects</li> <li>• Evaluation of Structures (on site) by NDT Methods</li> <li>• Soil investigation and Bearing Capacity Design</li> </ul>	Completed
2.	Punjab State Cooperative Milk Producers Federation Limited, Chandigarh	Completed
3.	Conduct of Typing Test for Clerk-cum Data Entry Operators in English and Punjabi Language.	Completed
4.	Punjab Urban Planning and Development Authority, SAS Nagar.	Completed
5.	Punjab State Milk Producer's Federation Ltd., Chandigarh	Completed
6.	Recruitment for Post of Nursery Teachers under Education Department, UT Chandigarh Administration.	Completed
7.	Recruitment for the Post of Headmasters/Headmistresses on Contact basis under Shiksha Abhiyan Society, UT, Chandigarh	Completed
8.	Student training in various department.	Completed

The Institute organised 22 training programmes in which 1368 students of technical institutions participated.

Consultancy projects worth Rs. 458.08 Lakhs were completed.

- Institute has launched 3 Rerun courses in SWAYAM Portal with enrollment of 4589 participants.
- 3 AICTE-NITTT Modules with 16022 enrollments were also launched.
- An ARPIT Course on Big Data Analytics for Smart Grid was launched with 8233 enrolled participants.

## Training Programmes for Students

## Other Projects

## Award of Appreciation Received

Awarded the Certificate of Appreciation for Implementation of National Pension System and its recognition under Best Central Autonomous Body of FY 2018-19.



## Institute Staff Development

Staff Development is extremely important for bringing about any qualitative change in the system. It, therefore, needs to be planned in a manner so as to provide for the growth of the individual in accordance with one's innate capabilities and interests, bearing in mind one's present job requirements and likely changes in the foreseeable future. In this direction, the Institute continued to promote the development of its faculty and staff so as to provide opportunities to upgrade their professional capabilities in terms of knowledge and skills. The activities under this aspect ranged from deputing faculty and staff for short term programs organised by Institutes of higher learning of the country and abroad and participation in various conferences and seminars. The Institute sponsored 3 faculty members for International Training and 30 faculty members for National Programmes within India.

Sh. Jai Krishan, Sh. Jaspal Singh Sodhi and Sh. Surinder Singh, ministerial staff of the Institute have undergone training at Kolkata during 9-11 January, 2020.

With the support of BOG, the Institute has now created a provision of budget of Rs. 10 lakhs per year from IRG to train the non-teaching staff which is a first ever initiative of the Institute.

*Applied Science Department  
Civil Engineering Department*

*Computer Science and Engineering Department  
Curriculum Development Centre*

*Electrical Engineering Department  
Electronics and Communication Engineering Department*

*Entrepreneurship Development and Industrial Coordination Department  
Education and Educational Management Department*

*Library  
Mechanical Engineering Department*

*Media Engineering Department  
Rural Development Department*

## **Academic Achievements of the Departments**

# APPLIED SCIENCE DEPARTMENT

**Prof. (Dr.) Pankaj Sharma**

Professor

Research Areas: Chalcogenide Glasses, Thin Films,  
Nanomaterials, Ferrites.



**Prof. (Dr.) B. C. Choudhary**

Professor

Research Areas - Fiber Optics, Radiation Physics

**Dr. Ashok Kumar**

Associate Professor

Research Areas: Physics of nanomaterials and thin  
films, Nanotechnology enabled energy devices.



**Dr. Kailash Chandra Lachhwani**

Assistant Professor

Research Areas - Operation Research, Mathematical  
Programming

***During the year 2019-20, the department has conducted 22 short term courses for polytechnic, engineering college teachers and industry, which were attended by 380 participants. The department has conducted 03 training programs through ICT in which 233 teachers participated.***

***The department faculty published 08 papers in SCI Journal and 01 paper in other Journals. The department has conducted 02 student training programmes.***

### **Short Term Programs (Contact Mode)**

1. **Mathematical Techniques in Solving Engineering Problems**
2. **Nanomaterials : Characterization & Applications**
3. **Smart Materials and Nanotechnology**
4. **Integral Transform with Engineering Applications**
5. **Nuclear Power Technologies**
6. **Modern Experiments in Applied Physics**
7. **Advanced Numerical Methods**
8. **Emerging Materials: Characterization and Applications**
9. **Materials and Processes for Advanced Engineering Applications**
10. **Emerging Engineering Technologies**
11. **Applied Mathematics with Mathematica**
12. **Recent Advances in Nanostructured Materials**
13. **Nanotechnology: Development and Challenges**
14. **Trends in Fiber Optics Technology**
15. **Differential Equations with Engineering Applications**
16. **Laboratory Practices in Applied Physics**
17. **Nuclear Radiations and their Applications**
18. **Advances in Laser Technology**
19. **Numerical Methods and Applied Statistics**
20. **Optimization Techniques in Engineering**
21. **Optimization with MATLAB**
22. **OFC Systems-Design and Analysis**

### **Short Term Programs (ICT Mode)**

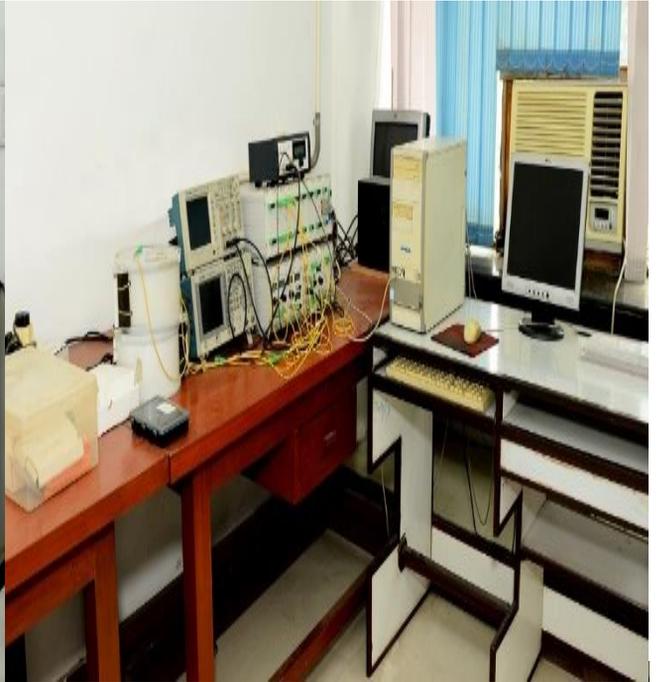
1. **Lasers and Laser based Technologies**
2. **Operations Research for Engineers**
3. **Mathematical Techniques in Solving engineering Problems**

## Papers Published in SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"Improvement in the linear and nonlinear optical properties of Mn-doped GeSe <sub>2</sub> chalcogenide thin films for all optical applications", Applied Physics A, 126, (2020) 173	Pankaj Sharma, K. A. Aly, Dinesh Ch. Sati & A. Dahshan
2.	"First Principles Investigation on Armchair Zinc Oxide Nanoribbons as Uric Acid Sensors", Journal of Molecular Modeling;(2020) 26:4	Paramjot Singh, Deep Kamal Kaur Randhawa, B.C. Choudhary, Gurleen Kaur Walia, Navjot Kaur
3.	"Microstructure and Electrochemical Performance of La <sub>2</sub> ZnMnO <sub>6</sub> Nanoflakes Synthesized by Facile Hydrothermal Route", Applied Physics A (SCI I.F. 1.810), 126, 11, (2020)	Jashandeep Singh, Amit Kumar, Uttam Kumar Goutam and Ashok Kumar
4.	"Solvothelmal synthesis dependent structural, morphological and electrochemical behaviour of mesoporous nanorods of Sm <sub>2</sub> NiMnO <sub>6</sub> ", Ceramics International (SCI I.F. 3.830), 46, 11041, (2020)	Jashandeep Singh and Ashok Kumar
5.	"Wet Chemical Synthesis and Electrochemical Performance of Novel Double Perovskite Y <sub>2</sub> CuMnO <sub>6</sub> Nanocrystallites", Materials Science in Semiconductor Processing (SCI I.F. 3.085), 107, 104826, (2020)	Farha Naaz Mansoorie, Jashandeep Singh and Ashok Kumar
6.	"Role of surfactant in optimization of 3D ZnO floret as photoanode for dye sensitized solar cell", Applied Nanoscience (SCI I.F. 2.880), 10, 1035 (2020)	Sonia Siwatch, Virender Singh Kundu, Ashok Kumar and Suresh Kumar
7.	"Ethylene glycol/ citric acid stabilized wet chemically synthesized Y <sub>2</sub> CoNiO <sub>6</sub> , and its structural, dielectric, magnetic and electrochemical behavior", Journal of Materials Science: Materials in Electronics (I.F.2.220) (accepted March 17, 2020)	Maret Ickler, Manju Devi, Irina Rogge, Jashandeep Singh and Ashok Kumar
8.	"Investigation of structural, morphological, and electrochemical properties of mesoporous La <sub>2</sub> CuCoO <sub>6</sub> rods fabricated by facile hydrothermal route", Int J Min Met Mater. (I.F. 1.713)(accepted February 09, 2020)	Jashandeep Singh and Ashok Kumar

## Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"Applicability of different models of energy bandgap and refractive index for chalcogenide thin films", Materials Today: Proceedings 28 (2020) 92–95	Ekta Sharma, Pankaj Sharma



*“Work hard, Work harder, Work with efficiency, Work in a cooperative spirit, Work with a team spirit to make your country great, self supporting and strong.”*

*– Sir M. Visvesvaraya*

# CIVIL ENGINEERING DEPARTMENT

**Prof. (Dr.) Sanjay Kumar Sharma**

Professor

Research Areas - Hydraulics & Irrigation,  
Environmental Engg., Building Maintenance



**Prof. (Dr.) Hemant Sood**

Professor

Research Areas - Concrete Technology, Pavement  
Design, Transportation Engineering



**Er. Ajay Kumar Duggal**

Associate Professor

Research Areas - Transportation Engineering,  
Foundation Engineering, Highway Engineering



**Er. Vinod Kumar Sonthwal**

Associate Professor

Research Areas - Geo-technical Engineering,  
Construction Management, Soil Mechanics

*“Work hard, Work harder, Work with efficiency, Work in a cooperative spirit, Work with a team spirit to make your country great, self supporting and strong.”* – Sir M. Visvesvaraya

# CIVIL ENGINEERING DEPARTMENT

**Er. Himmi Gupta**

Assistant Professor

Research Areas - Structural Engineering, Bridge Engineering, Project Management



**Dr. Amit Goyal**

Assistant Professor

Research Areas - Structure Dynamics, Masonry Structure, Low Cost Housing



*During the year 2019-20, the department conducted 30 short term training programs in contact modes and 07 programs in ICT Mode which were attended by 305 and 575 teachers from polytechnics and engineering colleges respectively. The department has conducted 05 workshops with 587 participations. The department also conducted 02 Student Training Programmes of 6 Weeks Duration. The department faculty published 24 papers in International Journals and 01 paper in proceedings of International Conference. Civil Engineering department also provided design and testing services to industry through consultancy projects of Gross Value more than Rs. 97 Lakhs. One faculty member was sponsored to attend International Training Programme in Malaysia.*

### Short Term Programs (Contact Mode)

1. Lab Practices in Highway Engineering
2. Application of Auto CAD in Engineering
3. Affordable and Green Building
4. Quality Assurance, Condition Assessment and Rehabilitation of Structures
5. New Generation Concrete Mixes
6. Software Applications in Project Management
7. Disaster Management and Sustainable Development
8. Application of NDT for Evaluation of RCC Structures.
9. Concrete Lab. Practices
10. Energy Efficient and Innovative Building Construction Practices
11. Recycling Materials in Highway Construction
12. Earthquake Resistant Affordable Housing
13. Innovation in Concrete and Green Materials
14. Quality Control of Concrete
15. Construction Management
16. Innovation in Geotechnical Investigation, Design and Construction of Bridges.
17. Alternate Technologies in Road Construction
18. Environmental Pollution: Issues and Remedies
19. Bearing Capacity Estimation for Foundations
20. Vector Mechanics for Engineers
21. Structural Design Using STAAD PRO
22. Laboratory Practices in Environmental Engineering
23. Advanced Construction Materials and Techniques for Roads, Buildings Bridges and Other Civil Engineering Structures
24. Testing of Latest Civil Engineering Materials
25. Application of Finite Element Analysis for Structural Design
26. Innovative Technologies for Village Development
27. Earthquake Risk Management
28. Low Cost Housing Techniques and Practices
29. Water Resources Management for Rural Area
30. Basics of MATLAB and Simulink with Civil Engg. Applications

1. **Skill Development and Technological Innovation for Employment Generation in India**
2. **Low Cost Housing Techniques and Practices (cluster)**
3. **Defect free Construction Repair and Maintenance**
4. **Application of Auto CAD in Engineering**
5. **Water Resources Management**
6. **Sustainable Environmental Management**
7. **Remote Sensing and GIS in Civil Engineering**

### Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"A Review on Durability Properties of Densified Small Particles based Concrete", International Journal for Research in Applied Science & Engineering Technology ISSN: 2321- 9653, Vol. 7 Issue V, May, 2019	Dr. Sanjay Kumar Sharma
2.	Soil Stabilization using Brick Kiln Dust and waste Coir Fibre International Journal of Recent Technology and Engineering ISSN: 2277-3878, Vol.8 July 2019.	Er. Vinod Kumar Santhawal
3.	"Management of Municipal Solid Waste and Production of Biodegradable Packaging Material: A Double Edged Green Technology Approach", International Journal of Basic and Applied Research ISSN:22493352/22780505 Vol. 9, Issue 7 July 2019	Dr. Sanjay Kumar Sharma
4.	"Effect of using Waste Plastic in Geopolymer Concrete", Journal of emerging technologies and innovative research (JETIR) ISSN-2349-5162, Vol.6, Issue 6 June 2019	Dr. Hemant Sood
5.	"Carbon Fibres As A Self-Sensing Material For Health Monitoring Of Concrete Structures", Journal of emerging technologies and innovative research (JETIR) ISSN-2349-5162 Vol.6, Issue 6, 10 June 2019	Dr. Hemant Sood
6.	"Strengthening of concrete using glass fiber reinforced polymer sheet", Journal of emerging technologies and innovative research (JETIR) ISSN :2349-5162 vol.6, Issue 6, June 2019	Dr. Sanjay Kumar Sharma
7.	i) "Performance Based Seismic Design of RCC Building", International Journal of Civil Engineering Research ISSN: 2278-3652 Vol. 9 Number 1 (2018) (ii) "Pushover Analysis of RCC Building", International Journal of Civil Engineering Studies ISSN:0975-6469 Volume 10, Number 4 (2018)	Er. Himmi Gupta
8.	(i) "Effect of Addition of Plastic in Bituminous Mixes Prepared with Modified Bitumen", ELSEVIER Scopus International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN:2278-3075 Vol.-8 Issue-9, July 2019 (ii) "Review on Effect of addition of Plastic in Bituminous Mixes prepared with CRMB", International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES) ISSN:2455-2585 Vol.-5, Issue 06, June 2019	Er.Ajay Kumar Duggal

Sr.No.	Title of the Paper Published	Author (s) Name
9.	“Accident Trend in India: Issues and Challenges”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Dr. Hemant Sood
10.	“Study of Level of Service (LOS) Criteria for Measuring Traffic Congestion – A Critical Review”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Dr. Hemant Sood
11.	“A Review on Effect on Addition of Medium Steel Fibers on Dense Bituminous Macadam”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Er.Ajay Kumar Duggal
12.	“Soil Stabilization of Clayey Soil using Rice Husk Ash and Polypropylene Fiber”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Er. Vinod Kumar Santhowal
13.	“A Review on Low Temperature Stiffness of Bitumen Binder & its Correlation with Stability”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Er.Ajay Kumar Duggal
14.	“Waste Water Treatment of Industries Using Physico Chemical Technique : A Review”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Dr. Sanjay Kumar Sharma
15.	“A Review on Strengthening of High Strength Concrete with using Fiber Wrapping System”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Dr. Sanjay Kumar Sharma
16.	“Stability Analysis of Failed Slope at Chakki Mod, Along Kalka-Shimla Highway, Himachal Pradesh Using Midas GTS NX® Software”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Er. Vinod Kumar Santhowal
17.	“A Critical Review on Enhancing Soil Properties Using Quarry Dust & Sisal Fiber”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Er. Vinod Kumar Santhowal
18.	“A Study on Physical of Coconut Coil Fiber Reinforced Concrete and Ordinary Concrete”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Dr. Sanjay Kumar Sharma
19.	“A Critical Review on Comparative Study on Hot Bituminous Mixes by Drum Mix & Batch Mix Plant”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Er.Ajay Kumar Duggal

Sr.No.	Title of the Paper Published	Author (s) Name
20.	“Mechanical Characterization of the Granite Rock and Study of its Interfacial Behavior in Cement Mortar”, 4 <sup>th</sup> Indian Conference on Applied Mechanics (Acceptance): To be Printing in Special Issue	Dr. Sanjay Kumar Sharma
21.	“To Study the Effect of Varying Proportion of Rice Husk Ash on the Properties of Fly Ash Based Geopolymer Mortar: A Review”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019.	Dr. Sanjay Kumar Sharma
22.	“A Critical Review on Enhancing Soil Properties Using Cement Kiln Dust & Polypropylene Fiber”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Er. Vinod Kumar Santhowal
23.	“A review on analysis of Black Spots of Highways and \cities in India”, International Journal of technical Innovation in Modern Engineering & Sciences Volume 5 Issue 3	Er.Ajay Kumar Duggal
24.	“Influence of Casting and Curing Temperature on Compressive Strength of Concrete”, Journal of Emerging Technologies & Innovative Research (JETIR) ISSN-2349-5162 Vol. 6, Issue 6, June 2019	Dr. Hemant Sood

### Papers Published/Presented at Important Conferences/Seminars

1.	Innovative Technologies for Clean & Sustainable Development	Dr. Sanjay Kumar Sharma
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### In-Country Training Programs

Sr.No.	Title of Training Programme	Period of Training	Venue	Attended by
1.	Durability of Concrete	August 2019	Mumbai	Dr. Sanjay Kr. Sharma

**CCTSD conducted skill Training Programs sponsored by MOEFCC and also Department of Environment (U.T). Five projects of NABL on Lab Management system were also conducted by CCTSD and 100 participants attended.**

## Theses Guided by Faculty

No. of ME Theses Guided  
No. of PhD Theses

41  
Awarded - 1



*“Computer science is no more about computers than astronomy is about telescopes.”  
– Edsger Dijkstra*

# COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

**Prof. (Dr.) Maitreyee Dutta**

Professor

Research Areas - Digital Signal & Image Processing,  
Data Warehousing & Data Mining



**Prof. (Dr.) Rama Krishna Challa**

Professor

Research Areas - Wireless Communication &  
Networks, Cryptography & Cyber Security



**Prof. (Dr.) Srinivasa KG**

Professor

Research Areas - High Performance Computing, Cloud  
Computing, Data Science, IoT, Digital Pedagogy



**Er. Shano Solanki**

Assistant Professor

Research Areas - Algorithm Analysis & Design,  
Multimedia System Design, Web Based Training



*“Computer science is no more about computers than astronomy is about telescopes.”  
– Edsger Dijkstra*

# COMPUTER SCIENCE AND ENGINEERING DEPARTMENT

***Er. Amit Doegar***

*Assistant Professor*

*Research Areas – Networking, Image Processing, Open Source Technologies*



***Dr. Mala Kalra***

*Assistant Professor*

*Research Areas - Cloud Computing, Information Retrieval, Swarm Intelligence*

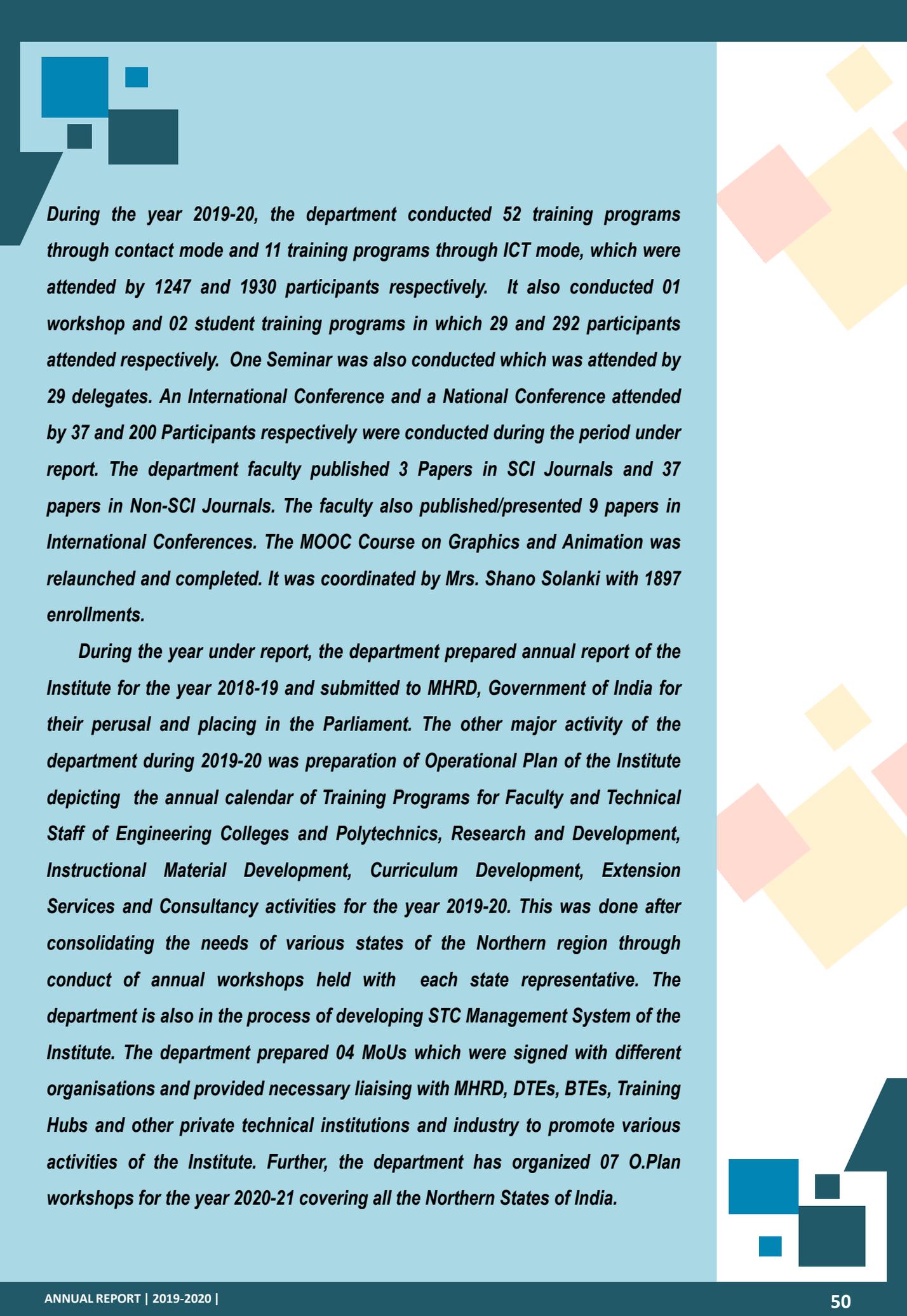


***Dr. Rakesh Kumar (on lien as Associate Professor at CUH, Mahendragarh)***

*Assistant Professor*

*Research Areas - Wireless Sensor Networks, Adhoc Networks, Cloud Computing*





*During the year 2019-20, the department conducted 52 training programs through contact mode and 11 training programs through ICT mode, which were attended by 1247 and 1930 participants respectively. It also conducted 01 workshop and 02 student training programs in which 29 and 292 participants attended respectively. One Seminar was also conducted which was attended by 29 delegates. An International Conference and a National Conference attended by 37 and 200 Participants respectively were conducted during the period under report. The department faculty published 3 Papers in SCI Journals and 37 papers in Non-SCI Journals. The faculty also published/presented 9 papers in International Conferences. The MOOC Course on Graphics and Animation was relaunched and completed. It was coordinated by Mrs. Shano Solanki with 1897 enrollments.*

*During the year under report, the department prepared annual report of the Institute for the year 2018-19 and submitted to MHRD, Government of India for their perusal and placing in the Parliament. The other major activity of the department during 2019-20 was preparation of Operational Plan of the Institute depicting the annual calendar of Training Programs for Faculty and Technical Staff of Engineering Colleges and Polytechnics, Research and Development, Instructional Material Development, Curriculum Development, Extension Services and Consultancy activities for the year 2019-20. This was done after consolidating the needs of various states of the Northern region through conduct of annual workshops held with each state representative. The department is also in the process of developing STC Management System of the Institute. The department prepared 04 MoUs which were signed with different organisations and provided necessary liaising with MHRD, DTEs, BTEs, Training Hubs and other private technical institutions and industry to promote various activities of the Institute. Further, the department has organized 07 O.Plan workshops for the year 2020-21 covering all the Northern States of India.*

1. Machine Learning using Python
2. Digital Marketing with search engine optimization and E-Commerce
3. Internet of things
4. Machine Learning and Deep Learning Using Open Source
5. Cyber Crimes & Forensics
6. Python Programming
7. Internet of Things
8. Web Designing using PHP and Mysql
9. Data Analytics Tools for Research
10. Outcome based Education for Program Accreditation
11. Software Testing Using Open Source Tools
12. Linux Administration Using CentOS
13. Data Science and Big Data Analytics Using Open Source
14. Cryptography for Information Security
15. No SQL Databases
16. Computer Network and Hardware Maintenance
17. Social Network Analysis
18. Online Safety Awareness
19. Cloud Computing
20. BlockChain Technology
21. An Enterprise Perspective on Block Chain Technology
22. Website Development and Security using PHP and MySQL
23. Cyber Security
24. Application Development using Android
25. Computer Network and Hardware Maintenance
26. Python Programming
27. Big Data Analytics
28. Deep Learning
29. Graphics and Animation Development
30. Image Processing and Signal Processing using Scilab
31. MATLAB for Engineering Applications
32. Artificial Neural Network and Fuzzy Logic
33. Multimedia Content Generation for Instructional Material Development
34. Learning Management System
35. Digital Repository
36. Preparing Engineering Colleges for NBA Accreditation.
37. Academic Administration and Leadership for Polytechnic Colleges
38. Julia and Python Programming for Engineering Applications
39. Preparing Polytechnic Colleges for Quality Certifications
40. Role of ICT in Academic Governance
41. Cyber Security
42. Hybrid Soft Computing Techniques for Engineering Applications
43. High Performance Distributed Computing
44. Next Generation Firewall Implementation
45. Make in India: Role of Start-ups and incubators
46. Digital Learning: The Prospects of IoT Technology in Education
47. Digital Learning: The Prospects of IoT Technology in Education
48. Modelling and Real Time Implementation of Electrical System (AICTE Sponsored)
49. AICTE Sponsored FDP on CYBER SECURITY Digital Learning: The Prospects of IoT Technology in Education
50. Data Analytics: A Hands on Approach for Application Development
51. Data Analytics: A Hands on Approach for Application Development
52. Design and Development of RPA Solutions

1. Next Generation Wireless Networks
2. Image Processing and Signal Processing using Scilab
3. Data Science using R
4. Big Data Analytics
5. Open Source Technologies
6. Cloud, Fog and Edge Computing
7. Semantic Web
8. Nature Inspired Computational Techniques for Engineering & Sciences.
9. Design Challenges in Low Power VLSI Design
10. GPU Programming using CUDA
11. Advanced Cyber Security

## Student Training Program

6 Weeks Student Training in May, 2019 on PYTHON, JAVA, LINUX, PHP, IOT.  
6 Weeks Student Training in June, 2019 on PYTHON, JAVA, LINUX, PHP, IOT.

## International / National Seminar/Conference:

1. National Seminar on New Frontiers in Cloud and Edge/Fog Computing for Big Data & IoT on 23.04.2019.
2. International Conference on IoT inclusive life 2019 (AICTE Sponsored) from 19th to 20th December, 2019.
3. Sansad Adarsh Gram Yojna (SAGY) Conference for Vice Chancellor/Directors of Colleges/Universities from 17th to 20th December, 2019.
4. National Seminar on Writing Scientific Papers for Quality Journals on 05.07.2019
5. One Day Workshop on “Share and Mentor Institutions (Margdarshan) Scheme” sponsored by AICTE, New Delhi on 20.02.2020.

## Papers Published in SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	“A survey of Key bootstrapping protocols based on Public Key Cryptography in the Internet of Things”, 2019 , IEEE Access, SCI Indexed, Vol 7, Iss: 1, pp 27443-27464 10.1109/ACCESS.2019.2900957	Manisha Malik, Maitreyee Dutta And Jorge Granjal
2.	"S-Ddos : Apache Spark Based Real-Time Ddos Detection System" Journal of Intelligent of Fuzzy Systems, IOS Press (Accepted, Sci-E, Impact Factor : 1.637)	N.V Patil, C. Rama Krishna And K. Kumar
3.	"A Real-Time Twitter Trend Analysis and Visualization Framework," International Journal on Semantic Web and Information Systems (IJSWIS) 15 (2019): 2, accessed (September 15, 2020), doi:10.4018/IJSWIS.2019040101	Murthy, Jamuna S. and Siddesh G.M., and Srinivasa K.G.

## Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	“Spam Detection in Social Networking Sites using Artificial Intelligence Technique”, International Journal of Innovative Technology and Exploring Engineering, SCOPUS indexed, Vol 8, Iss 853, July, 2019, pp: 20-25	Amit Pratap Singh, Maitreyee Dutta
2.	“Precise Positioning at Indian Region with Multi Constellation GNSS Receiver SP80, “ International Journal of Advanced Studies of Scientific Research” vol 3, Iss 82018, Indexed in Elsevier-SSRN	Prashant Joshi, Dr. Maitreyee Dutta, Vivek Bansal

Sr.No.	Title of the Paper Published	Author (s) Name
3.	"Bi-Lingual (English, Punjabi) Sarcastic Sentiment Analysis by using Classification Methods", International Journal of Innovative Technology and Exploring Engineering, SCOPUS indexed, Vol 8, Iss 9, July, 2019, pp: 1383-1388	Ishana Attri, Maitreyee Dutta
4.	"Improved Framework for Bug Severity Classification using N-gram Features with Convolution Neural Network", International Journal of recent Technology and Engineering (SCOPUS Indexed), Vol 8, Iss 3, ISSN: 2277-3878, September, 2019	Sarbjeet Kaur, Dr. Maitreyee Dutta
5.	"Review of Blind Deconvolution Technique for image Restoration", published in International Journal on Emerging Technologies 10(2): 333-344 (2019), SCOPUS Indexed	Ramteke Mamta G, Maitreyee Dutta
6.	"Research on Enhancing RPL for Improved Performance in IoT Networks", published in International Journal of Innovative Technology and Exploring Engineering, Volume-8 Issue-12, October 2019, SCOPUS INDEXED	Hangkum Sao Chang, Maitreyee Dutta
7.	"Threshold Based Method for Detection of Distributed Denial of Service Attack in IoT", International Journal of Recent Technology and Engineering", Vol 8, Iss 4, November 2019	Johnson Joseph, Maitreyee Dutta
8.	"New Cepstrum Based Image Restoration Algorithm for Grayscale Images", published in International Journal of Innovative Technology and Exploring Engineering, SCOPUS indexed, Vol 8, Iss 11, September 2019	Ramteke Mamta G, Maitreyee Dutta
9.	"Apache Hadoop based Distributed Denial of Service Detection Framework," Springer CSIS Series (ISSN No. 1865-0929)- 4th International Conference Information, Communication & Computing Technology (ICICCT 2019), India International Centre, New Delhi, India, 11 May 2019. [UGC Approved Journal - 2019 (Journal No. - 16246): Accepted for publication]	Nilesh Vishwasrao Patil, C. Rama Krishna, and Krishan Kumar,
10.	"Analysis of various students performance Prediction Techniques", proceedings of 3rd International Conference on Intelligent Computing & Control System, Madurai, India, May 15 -19, 2019	Abinav Jain, Shano Solanki
11.	"IoT Based Data Storage for Cloud Computing Applications" in proceedings of "International conference on Artificial Intelligence and Data Engineering (AIDE), NMAMIT, Karnataka 23-24 May 2019 (to be published in AISC series, Springer)	Ankita Shukla, Priyatam Reddy Somagattu, Vishal Krishan Singh, Mala Kalra
12.	"Sentiment Analysis of Train Derailment in India: A Case Study from Twitter Data", IEEE Sponsored Second International Conference on Intelligent Communication and Computational Techniques, Manipal University Jaipur, India, September 28-29, 2019 (Accepted for Oral Presentation on June 16, 2019)	Vartika, C. Rama Krishna, Ravinder Kumar and Yogita

Sr.No.	Title of the Paper Published	Author (s) Name
13.	"E-Had: A Distributed and Collaborative Detection Framework for Early Detection of DDoS Attacks", Elsevier Journal of King Saud University - Computer and Information Sciences, doi: <a href="https://doi.org/10.1016/j.jksuci.2019.06.016">https://doi.org/10.1016/j.jksuci.2019.06.016</a> (accepted for publication on 28 June 2019)(Indexed in: SCOPUS, ESCI)	Nilesh Vishwasrao Patil, C. Rama Krishna, Krishan Kumar, and Sunny Behal
14.	"Mitigating Economic Denial of Sustainability (EDoS) in Cloud Environment using Genetic Algorithm and Artificial Intelligence", International Journal of Innovative Technology and Exploring Engineering [Accepted, SCOPUS Indexed].	S. Nautiyal, C. Rama Krishna and S. Wadhwa,
15.	"VM Allocation in Heterogeneous Cloud for Load Balancing based on VM Classification", International Conference on Inventive Computation Technologies (ICICT),	B. Mulla, C. Rama Krishna and R. Kumar Tickoo
16.	"DDoS Attack Detection and Prevention using AODV Routing Mechanism and FFBP Neural Network in a Manet", International Journal of Recent Technology and Engineering [Accepted, SCOPUS Indexed]	J. Batra and C. Rama Krishna
17.	"An Efficient Indian Sign Language Recognition System using Sift Descriptor", International Journal of Engineering and Advanced Technology, SCOPUS Indexed]	J. Kaur and C. Rama Krishna
18.	"Face-Iris Multimodal Biometric System using Feedforward Backpropagation Neural Network", is published in International Journal of Innovative Technology and Exploring Engineering(IJITEE),ISSN: 2278-3075, Volume-8 Issue-8S3, June 2019	Deepali Singhal, Amit Doegar
19.	"Real Time Communication between Nodes using LoRaWAN for Emergency Alert in Elevator", International Journal of Engineering and Advanced Technology. [Scopus Indexed- Accepted on 31st July 2019]	Anupriya, C. Rama Krishna, Ajay Godhara
20.	"Load Balancing Algorithm for Efficient VM Allocation in Heterogeneous Cloud" International Journal of Computer Networks & Communications (IJCNC). [Scopus Indexed- Accepted on 21st August 2019]	Badshaha Mulla, C. Rama Krishna and Raj Kumar Tickoo
21.	" Hybridization of Feature Level Fusion with Ant Colony Optimization in Multimodal Biometrics", International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 8958, Volume-8 Issue-6, August 2019 (Scopus Indexed)	Sakuntla Meena, Amit Doegar
22.	"An intelligent water drops-based approach for workflow scheduling with balanced resource utilisation in cloud computing, International Journal of Grid and Utility Computing, Vol. 10, No. 5, pp. 528 - 544, 2019 (Scopus Indexed), DOI: 10.1504/IJGUC.2019.101995.	Mala Kalra, Sarbjeet Singh
23.	"Classification of Action Based Video Using Heterogeneous Feature Extraction and SVM," International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8, Issue-11 September 2019. DOI: 10.35940/ijitee.K2089.0981119 (Scopus)	Chandrawal kaur, Amit Doegar
24.	"Hybridization of Feature Level Fusion with Ant Colony Optimization in Multimodal Biometrics", International Journal of Engineering and Advanced Technology (IJEAT), Volume-8 Issue-6, August 2019. (Scopus)	Sakuntla Meena, Amit Doegar

Sr.No.	Title of the Paper Published	Author (s) Name
25.	"Object-based and Rule-based Classification of Synthetic Aperture Radar Images", International Journal of Innovative Technology and Exploring Engineering (IJITEE)", Volume-8 Issue-Number- 429, Page No.- 2458-2463. 10, Aug 2019. (Scopus)	Aishwarya Rastogi, Amit Doegar
26.	"Ensemble Classification Method for Credit Card Fraud Detection", International Journal of Recent Technology and Engineering (IJRTE), Vol. 8, No. 3, pp. 423-427, September 2019. (Scopus Indexed)	Inderpreet Kaur, Mala Kalra
27.	Optimized focused web crawler with natural language processing based relevance measure in bioinformatics web sources. Cybernetics and Information Technologies, 19(2), 146-158. 2019 (Scopus Indexed)	Sekhar, S. M., Siddesh, G. M., Manvi, S. S., & Srinivasa, K. G.
28.	TwitSenti: A Real-Time Twitter Sentiment Analysis and Visualization Framework. Journal of Information & Knowledge Management, 18(02), 1950013, 2019.	Murthy, J. S., Siddesh, G. M., & Srinivasa, K. G.
29.	Development of Community Based Intelligent Modules Using IoT to Make Cities Smarter. International Journal of Fog Computing (IJFC), 2(2), 1-12, 2019	Kallimani, J. S., Sailusha, C., Lathar, P., & Srinivasa, K. G.
30.	Data Analytics on Agrometeorological Parameters for Building a Utility System for Farmer Community, International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-8 Issue-2, July 2019 (Scopus Indexed)	Sowmya BJ, Gautam Mundada, Pranav Hegde, Seema S, K G Srinivasa
31.	An Insightful Review on Educational Big Data Analytics in Cloud-based e-Learning System, International Journal of Advanced Science and Technology (IJAST), Vol. 28, No. 16, PP. 332-344, 2019 (Scopus Indexed)	AK G Shidaganti, Prakash S, Srinivasa K G
32.	An Image Processing and Machine Learning Approach for Early Detection of Diseased Leaves. International Journal of Cyber-Physical Systems (IJCPS), 1(2), 56-73, 2019	Sowmya, B. J., Shetty, C., Seema, S., & Srinivasa, K. G.
33.	Performance Analysis of Intrusion Detection System using Feature Selection and Feature Reduction Method, International Journal of Advanced Science and Technology, Vol. 29, No. 5, PP. 3496-3511, 2020 (Scopus Indexed)	Karthik K N, Sowmya BJ, Seema S, Srinivasa K G
34.	"Optimized Feature Extraction Based Artificial Intelligence Technique for Empirical Analysis of Stock Market Data", International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-8, Issue-10, pp. 527-532, Aug 2019, Scopus Indexed.	Vani Kansal, Rakesh Kumar
35.	"Classifying White Blood Cells in Blood Smear Images using a Convolutional Neural Network", International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-8, Issue-9S, pp. 825-829, July 2019, Scopus Indexed.	Gulshan Sharma and Rakesh Kumar

Sr.No.	Title of the Paper Published	Author (s) Name
36.	“Trust Based Technique for the Mitigation of Version Number Attack in Internet of Things”, International Journal of Recent Technology and Engineering(IJRTE), ISSN: 2277-3878, Volume-8, Issue-3, pp. 1197-1203, September 2019, Scopus Indexed.	Chandni and Rakesh Kumar
37.	Energy Efficient Dynamic Cluster Head and Routing Path Selection Strategy for WBANs, Wireless Personal Communications, 113, pp. 33–58, 2020.	Roopali and Rakesh Kumar

## Papers Published/Presented at Important Conferences/Seminars

### International

Sr. No.	Title of the Paper Presented/Accepted alongwith a Name of the Conference/Seminar (venue, with date)	Author(s) Name
1.	“Energy-Aware VM Migration in Cloud Computing”, International Conference on IoT inclusive Life, Proceedings of International Conference on IoT Inclusive Life (ICIIL 2019), NITTTR Chandigarh, Lecture Notes in Networks and Systems, pp. 353-364, vol. 116. Springer, Singapore, December 2019 <b>(Book Chapter)</b> .	Shashi Bhushan Singh Yadav, Mala Kalra
2.	“Deadline Constrained Energy-Efficient Workflow Scheduling Heuristic for Cloud”, Proceedings of International Conference on IoT Inclusive Life (ICIIL 2019), NITTTR Chandigarh, Lecture Notes in Networks and Systems, pp. 365-382, vol. 116. Springer, Singapore, December 2019 <b>(Book Chapter)</b> .	Shalu Saharawat, Mala Kalra
3.	“Improved Symbiotic Organism Search based Approach for Scheduling Jobs in Cloud”, Proceedings of International Conference on IoT Inclusive Life (ICIIL 2019), NITTTR Chandigarh, Lecture Notes in Networks and Systems, pp. 453-461, vol. 116. Springer, Singapore, December 2019 <b>(Book Chapter)</b> .	Deepika Srivastava, Mala Kalra
4.	“IoT based Data Storage for Cloud Computing Applications” Proceedings of International Conference on Artificial Intelligence and Data Engineering (AIDE 2019), Advances in Artificial Intelligence and Data Engineering. Advances in Intelligent Systems and Computing, pp. 1455-1464, vol. 1133. Springer, Singapore, May 2019 <b>(Book Chapter)</b> .	Ankita Shukla, Priyatam Reddy Somagattu, Vishal Krishna Singh and Mala Kalra
5.	“Prediction of Bug Severity by classification of Bug Reports” , Proceedings of the international conference on Communication and Electronics System (ICCES 2019) organized PPG Institute of Technology during 17-19 July, Coimbatore, India	Sarbjit Kaur, Dr. Maitreyee Dutta
6.	“Analysis of various student Performance Prediction Techniques” Proceedings of International Conference on Intelligent Computing and Control Systems from 15-17 May 2019, Madurai, India	Abhinav Jain, Shano Solanki

Sr. No.	Title of the Paper Presented/Accepted alongwith a Name of the Conference/Seminar (venue, with date)	Author(s) Name
7.	"An Efficient Approach for Multiclass Student Performance Prediction based upon Machine Learning" in Proceedings of International Conference on Communication and Electronics Systems (ICCES) 2019/7/17 IEEE: <a href="https://ieeexplore.ieee.org/document/9002038">https://ieeexplore.ieee.org/document/9002038</a> DOI: 10.1109/ICCES45898.2019.9002038	Abhinav Jain, Shano Solanki
8.	"A Hybrid Approach for Intrusion Detection Based on Machine Learning", Proceedings of International Conference on Intelligent Sustainable Systems (ICISS 2019) at SCAD Instt. of Technology, Palladam, Tamil Nadu, India IEEE: <a href="https://ieeexplore.ieee.org/document/8908116?denied=2019/11/21">https://ieeexplore.ieee.org/document/8908116?denied=2019/11/21</a>	Abhinav Jain, Shano Solanki
9.	"Web Service Ranking and Selection Based on QoS Emerging Research in Electronics, Computer Science and Technology", Lecture Notes in Electrical Engineering, vol 545. Springer, Singapore. <a href="https://doi.org/10.1007/978-981-13-5802-9_281">https://doi.org/10.1007/978-981-13-5802-9_281</a>	Vaishali, Kumar R., Solanki S.

## Books Chapters Published

Number of Book Chapters Published

5

## Training Programs attended by Institute Faculty/Staff

### International Training / Visits

Sr.No.	Title of Training Programme	Period of Training	Venue	Attended by
1.	AICTE-ULIERI Training Programme on Leadership Development	2 workshops in 2019	AICTE, New Delhi	Dr. Maitreyee Dutta, Dr. C RamaKrishna

### In-Country Training Programs

Sr.No.	Title of Training Programme	Period of Training	Venue	Attended by
1.	FDP on "5G Communication"	8-12 April, 2019 (One Week)	IIT, Ropar	Dr. Mala Kalra
2.	AICTE recognized STC on "Digital Learning: The Prospects of IoT Technology in Education"	25/11/2019 to 06/12/2019 (Two Weeks)	NITTR, Chandigarh	Dr. Mala Kalra
3.	Three days workshop on "Exam Reforms" organised by AICTE, New Delhi	9-11 December, 2019	NITTR, Chandigarh	Dr. Mala Kalra

Sr.No.	Title of Training Programme	Period of Training	Venue	Attended by
4.	FDP on Data Science using R and Python	24-28 June, 2019	IIT Ropar	Mrs. Shano Solanki
5.	FDP on AI and Machine Learning	23-27 December, 2019	MNIT Jaipur	Mrs. Shano Solanki

### Theses Guided by Faculty

No. of ME Theses Guided

40

No. of PhD Theses Guided

Awarded – 2  
Submitted - 3  
In Progress – 9



# CURRICULUM DEVELOPMENT CENTRE

**Prof. (Dr.) Rajesh Mehra**

Professor

Research Areas - VLSI Design, Advanced Digital Signal Processing, Embedded Design



**Prof. (Dr.) A B Gupta**

Professor

Research Areas - Curriculum Development, Curriculum Implementation



**Er. Suresh Kumar Gupta**

Associate Professor

Research Areas - Curriculum Development, Civil Engineering



**Dr. Meenakshi Sood**

Associate Professor

Research Areas - ANN, Antenna, Antenna( Plana, Metamaterial, Fractal), Curriculum Development, Digital Signal & Image Processing, Machine Learning

*During the year 2019-20, Curriculum Development Centre conducted 35 Short Term Training Programs out of which 27 were in contact mode and 08 were in ICT mode for the faculty of polytechnics and engineering colleges. In these programs 496 Polytechnic Teachers and 1307 Engineering college teachers were trained. The Centre organized 04 Workshops other than Curriculum Development in which 162 participants participated. The centre also conducted 01 Curriculum Development Workshop for the State of Uttar Pradesh which was attended by 13 participants.*

*The centre faculty have published 05 papers in SCI Journals, 12 papers in International Journal other than SCI Journal and 08 papers in International Conferences. The centre faculty is guiding 04 PhDs out of which 01 is submitted, guiding 08 ME Thesis out of which 05 are completed 03 are submitted. The centre faculty has also published 02 book chapters. The centre has signed MoU with the Board of Technical Education Delhi for Design of NSQF aligned Curriculum under consultancy project.*

### Short Term Programs (Contact Mode)

1. Curriculum Implementation
2. Outcome Based Curriculum
3. Communication Skills
4. Organizing Student Centered Activities
5. Practical Skills in Technical Education
6. Research Oriented Project Work
7. Curriculum Development
8. NSQF Aligned Curriculum Design and Implementation
9. Developing Practical Skills
10. Planning, Execution and Evaluation of Project Work
11. Project Work Planning and Execution
12. Deep Learning for Image Processing: Overview, Challenges and Future
13. Research Oriented Project Work
14. Generic Skills Development

1. Outcome Based Curriculum
2. Research Oriented Project Work
3. Communication Skills
4. Curriculum Implementation
5. Practical Skills in Technical Education
6. Curriculum Development Processes
7. Communication Skills
8. Research Oriented Project Work

### Short Term Programs (ICT Mode)

### Curriculum Design

1.	Diploma level programme	Electrical Engineering for UP State	Completed
2.	Diploma Level Programme	Chemical Engineering for UP State	

## Papers Published in SCI Journals:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	“Conventional Machine Learning and Deep Learning Approach for Multi-Classification of Breast Cancer Histopathology Images—a Comparative Insight”, Journal of Digital Imaging, 33, 632–654, January, 2020.	Shallu Sharma & Rajesh Mehra
2.	“Effect of layer-wise fine-tuning in magnification-dependent classification of breast cancer histopathological image”, The Visual Computer, 36, 1755–1769 October, 2019.	Shallu Sharma & Rajesh Mehra
3.	Agamreet Kaur, Rajesh Mehra, Amit Saini “Hetero-Dielectric oxide engineering on dopingless gate all around nanowire MOSFET with Schottky contact source/drain” AEU - International Journal of Electronics and Communications, Volume 111, November 2019, 152888.	Agamreet Kaur, Rajesh Mehra, Amit Saini
4.	“Investigation of Organic LED Materials Using a Transparent Cathode for Improved Efficiency”, Journal of Electronic Materials Volume 48(7), 4409–4417, April 2019.	Rana, R., Mehra, R.
5.	“Implications of Pooling Strategies in Convolutional Neural Networks: A Deep Insight”, Foundations of Computing and Decision Sciences, 44(3), 303-330, August, 2019.	Sharma, S., Mehra, R.

## Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	“Synergy of Bis(Sulfanylidene)Tungsten and Spiro-Ometad for an Efficient Perovskite Solar Cell”, International Journal of Engineering and Advanced Technology (IJEAT), Volume-9 Issue-1, pp.4011-4016, October 2019.	Srishtee Chaudhary, Rajesh Mehra
2.	“IoT Based Full Protection Covers for Parked Car at Remote Stations” International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8 Issue-11, pp. 4185 - 4189, September 2019.	Kirti Masown, Rajesh Mehra
3.	“Iris Recognition using Convolutional Neural Network Design” International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8 Issue-9, pp. 672 - 678, July 2019.	Gajanan Choudhari, Rajesh Mehra
4.	“Multi-modal Iris Recognition System based on Convolution Neural Network” International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8 Issue-10, pp. 798 - 803, August 2019..	Gajanan Choudhari, Rajesh Mehra, Shallu
5.	“Perovskite Solar Cell design using Tin Halide and Cuprous Thiocyanate for Enhanced Efficiency”, International Journal of Engineering and Advanced Technology (IJEAT), Volume-8 Issue-6, pp.2817 - 2825, August 2019.	Shiva Sharma, Rajesh Mehra,

Sr.No.	Title of the Paper Published	Author (s) Name
6.	"Recovering Data For Optical Head Tracker Using Auto-Regression" International Journal of Scientific & Technology Research, Volume 9, Issue 04, pp. 2897 - 2902, April 2020.	Saket Kumar, Rajesh Mehra
7.	"Comparative Evaluation of Tin Perovskite based Solar Cell" Trends in Opto-Electro & Optical Communication, Volume 9, No. 3, pp. 15 - 18, Sep - Dec, 2019.	Chandni Devi, Rajesh Mehra
8.	"Face Spoofing Detection using Enhanced Local Binary Pattern", Scopus Indexed International Journal of Engineering and Advanced Technology, Vol. 9, No. 2, pp. 3365-3371, December 2019.	Karuna Grover, Rajesh Mehra
9.	"Biometric Face Anti-Spoofing And Context-Based Detection Techniques : A Review", Journal of Emerging Technologies and Innovative Research, Vol. 6, No. 4, pp. 812-816, April 2019.	Karuna Grover, Rajesh Mehra
10.	"Convolutional Neural Networks Based Scene Recognition Using Significant Feature Approach", International Journal of Innovative Technology and Exploring Engineering (IJITEE), Vol.9, Issue3, pp.1705-1711, January 2020.	Priya Singla, Rajesh Mehra
11.	"Recognize Various Scenes using Classification methods in Million Images Dataset: A Review", in Journal of Emerging Technologies and Innovative Research (JETIR), Vol.6, Issue 6, pp.240-246, June 2019.	Priya Singla, Rajesh Mehra
12.	"Impact of Total Quality Management (TQM ) on The Performance of Building Construction Industry "International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-9 Issue-5, March 2020	Gupta, S K, et al

### Papers Published in International Conferences:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"Advances in Solar Cells as Renewable Energy", International Conference on Advancements in Computing & Management (ICACM), pp.201-208, April 2019.	Srishtee Chaudhary, Rajesh Mehra
2.	"35.3% Efficient Non-Toxic Perovskite Solar Cell using Copper-Iodide and Tin-Oxide", IEEE International Conference on Computation, Automation and Knowledge Management (ICCAKM), pp.258-262, Dubai, Jan 9-11, 2020.	Srishtee Chaudhary, Rajesh Mehra
3.	"FPGA Based Multiplier Less Decimator for Wireless Communication Systems", IEEE International Conference on Computation, Automation and Knowledge Management (ICCAKM), pp. 58-61, Dubai, Jan 9-11, 2020.	Geetanjali, Rajesh Mehra, Lajwanti Singh
4.	"Review on Full Protection Covers for Parked Car at Remote Stations" IEEE International Conference on Signal Processing, Computing and Control, pp. 24-29, October 2019.	Kirti Masown, Rajesh Mehra

Sr.No.	Title of the Paper Published	Author (s) Name
5.	"Performance Enhancement of Data centers by using low power and high speed CNTFET based SRAM Cell" IEEE International Conference Image Information Processing, pp. 459-462, November 2019.	Chauhan R, Mehra R
6.	"Performance Investigation of CH <sub>3</sub> NH <sub>3</sub> SnI <sub>3</sub> Solar Cell with HTM of CuSbS <sub>2</sub> " Symposium on NanoGe Fall Meeting, Berlin, Germany, November 2019.	Chandni Devi, Rajesh Mehra
7.	"Design of Waste Heat Recovery System for Green Environment", 2nd International Conference on Recent Innovations in Computing (ICRIC-2020), March 20-21, 2020, Central University of Jammu, J & K.	Meenakshi Sood, Pramod Kumar, Shruti Jain
8.	"Anomaly Detection and Qualitative Analysis of Diseases in Tomato Plant Using Texture Features", 2nd International Conference on Recent Innovations in Computing (ICRIC-2020), March 20-21, 2020, Central University of Jammu, J & K.	Anjna Meenakshi Sood Pradeep Kumar Singh

### Books / Book Chapters Published

Sr.No.	Title of Book / Book Chapter	Publisher	Edited / Authored by
1.	Current Perspectives and Advancements of Perovskite Photovoltaic Cells. In: Pati B., Panigrahi C., Buyya R., Li KC. (eds) Advanced Computing and Intelligent Engineering. Advances in Intelligent Systems and Computing, vol 1089. <a href="https://doi.org/10.1007/978-981-15-1483-8_8">https://doi.org/10.1007/978-981-15-1483-8_8</a> (2020)	Springer, Singapore.	Devi C., Mehra R.
2.	An Extensive Review on Organic Light-Emitting Diode for Energy-Saving and Eco-friendly Technology. In: Mishra S., Sood Y., Tomar A. (eds) Applications of Computing, Automation and Wireless Systems in Electrical Engineering. Lecture Notes in Electrical Engineering, vol 553. <a href="https://doi.org/10.1007/978-981-13-6772-4_78">https://doi.org/10.1007/978-981-13-6772-4_78</a> (2019)	Springer, Singapore.	Rana R., Jetly A., Mehra R.

### International Programs / Conferences Attended Abroad

Sr. No.	Title of Book / Book Chapter	Organizers	Attended by
1.	International Conference on Science, Technology, Engineering and Management (ICSTEM), 05-06, April, Bangkok, Thailand.	ISER	Dr. Rajesh Mehra

Sr. No.	Title of Book / Book Chapter	Organizers	Attended by
2.	Regional Program on Quality Assurance in TVET and the APACC Strategic Planning, 21-25 October 2019.	CPSC Manila, Philippines	Dr. Rajesh Mehra

### Consultancy Projects Undertaken

Sr. No.	Project Description	Amount	Coordinator & Co-Coordinators
1.	Curriculum Development Department has signed Memorandum of Understanding (MoU) with Board of Technical Education Delhi for Design of NSQF aligned curriculum.	1 Crore INR (Approx.)	<b>Coordinator</b> - Dr. Rajesh Mehra & <b>Co-Coordinators</b> – Dr. A B Gupta, Dr. S K Gupta, Dr. Meenakshi Sood

### In-House Training Programs

Sr.No.	Title of Training Programme	Period of Training	Attended by
1.	Module 4 on Instructional Planning and Delivery of AICTE-NINTTT(AICTE-New Initiative for New Technical Teachers Training) by NITTTTR Bhopal faculty at NITTTTR Chandigarh	10 -14 February 2020	Dr. Rajesh Mehra
2.	Module 2 of AICTE-New Initiative for New Technical Teachers Training) by NITTTTR Bhopal faculty at NITTTTR Chandigarh	10 -14 February 2020	Dr. A B Gupta
3.	Module 2 of AICTE-New Initiative for New Technical Teachers Training) by NITTTTR Bhopal faculty at NITTTTR Chandigarh	10 -14 February 2020	Dr. S K Gupta
4.	AICTE conducted "Workshop On Exam Reforms" at NITTTTR, Chandigarh.	09/12/2019 to 11/12/2019	Dr. Meenakshi Sood

### Theses Guided by Faculty

No. of ME Theses Guided	Completed – 05 Submitted – 03
No. of PhD Theses Guided	Submitted – 01 Under progress - 03

*"We want the education by which character is formed, strength of mind is increased, the intellect is expanded, and by which one can stand on one's own feet."*  
– Swami Vivekananda

# EDUCATION AND EDUCATIONAL MANAGEMENT DEPARTMENT

**Prof. (Dr.) Sunil Dutt**  
Professor

*Research Areas - Educational Technology, Curriculum Development, Education and Education Management, Management, Personality Development*



**Mr. Parmod Kumar Singla**  
Associate Professor

*Research Areas: Curriculum, Communication Skills, Management, Appropriate Technology for Rural Development, Entrepreneurship Development*

**Er. Rama Chhabra**  
Assistant Professor

*Research Areas – Chemical Engineering, Information Management*



**Er. Amandeep Kaur Sandhu**  
Assistant Professor

*Research Areas - Educational Management, Educational Technology*

## Short Term Programs (Contact Mode)

*During the year 2019-20, Department of Education & Educational Management organized 23 Short Term Training Programmes (including 7 programmes, each of 2 week duration) in Contact Mode for the teachers working in technical institutions and total number of 703 teachers were trained. In addition, the department organized 5 Short Term training programmes through ICT. A total number of 460 teachers were trained through these programmes. As such, a total number of 1163 teachers (with 1315 Man weeks) were trained by the faculty of the department.*

*The department completed 36 print materials (including 8 e-content) and 25 non-print materials (video films). It also completed 02 Consultancy Training Projects. The department faculty published 04 papers in Non-SCI Journals and also published/presented 02 papers in International Conferences.*

1. Research Methodology
2. Induction Training Programme for Newly Recruited Teachers
3. Effective Teaching
4. Managing your Ego and Emotions at work place
5. Online Learning and Evaluation
6. Pharmacy Education
7. Student Centered Instructional Strategies
8. Managerial Skills
9. Classroom Communication
10. Life Skills Development
11. Project Planning & Management
12. Personality Development
13. Effective Teaching-Learning using Social Media
14. Green Fashion
15. Student Evaluation
16. Developing Employable Skills
17. Evaluation System (Setting Question Papers)

1. Life Skills Development
2. Classroom Communication
3. Student Centered Instructional Strategies
4. Student Evaluation (Module-III: IPD)
5. Personality Development

## Student Training Programs

1. Preparing Students for Job Interviews

The Department organized two training programmes (one-day each) on 'Preparing Students for Job Interviews' through ICT for the students of technical institutions. A total of 1274 students from various technical institutions were benefitted by these programmes.

## Short Term Programs (ICT Mode)

MOOCs on “Research in Technical Education”, “Development of Self Learning Material”, “AICTE - NITTT - Module 3 – Communication Skills, Modes & Knowledge Dissemination”, and “AICTE - NITTT - Module 7 – Creative Problem Solving, Innovation and Meaningful R&D”

The department launched FOUR (AICTE approved FDP) Massive Open Online Courses (MOOC) on SWAYAM Portal wherein 16885 participants registered as per detail given below:

Title of MOOC	Start Date	End Date	Number of Registered participants	Name of Coordinator(s)
Research in Technical Education (First Re-run)	27.01.2020	30.03.2020	1490	Professor (Dr.) PK Tulsi Team: Dr. Sunil Dutt
Development of Self Learning Material (First Re-run)	24.02.2020	17.04.2020	1218	Professor (Dr.) Sunil Dutt
AICTE - NITTT - Module 3 – Communication Skills, Modes & Knowledge Dissemination	02.03.2020	27.04.2020	10030	Er. Amandeep Kaur, Assistant Professor
AICTE - NITTT - Module 7 – Creative Problem Solving, Innovation and Meaningful R&D	02.03.2020	30.04.2020	4147	Professor (Dr.) PK Tulsi Team: Dr. Sunil Dutt and Er. Amandeep Kaur
<b>Total Number of participants</b>			<b>16885</b>	

### Papers Published in Non-SCI Journal

Sr.No.	Title of the Paper Published	Author (s) Name
1.	Using WebQuest Based Instruction to enhance students' Critical Thinking. Issues and Ideas in Education. Vol. 8, No. 1, March, 2020	Ms. Richa Bansal and Dr. Sunil Dutt
2.	Impact of Webquest based Instruction on students' Attitude towards Learning Science. International Journal of Multidisciplinary Educational Research. Vol. 8, Issue 4(3), April, 2019	Ms. Richa Bansal and Dr. Sunil Dutt
3.	Effect of Online and Face to Face Collaborative Learning Strategies on Achievement in English. THINK INDIA (Quarterly Journal), Vol. 22, Issue-4-October-December, 2019 ( )	Ms. Suruchi and Dr. Sunil Dutt
4.	Concept Mapping as An Instructional Strategy for teaching of Punjabi Language Grammar. International Journal of Engineering, Applied and Management Sciences Paradigms. Vol. 54, Issue 1, April, 2019	Ms. Neelam, Dr. Sunil Dutt and Dr. Madhu Chitkara

## Papers Published/Presented at Important Conferences/Seminars

Sr. No.	Title of the Paper Presented/Accepted alongwith a Name of the Conference/Seminar (venue, with date)	Author(s) Name
1.	'Experience of Offering MOOC on Research in Technical Education for Teachers and Lessons Learnt' in the <b>Conference: Learning with MOOCs 2019: Enhancing Workforce Diversity and Inclusion, 23-25 October, 2019, Milwaukee, WI, USA</b>	Presented and authored by Dr. PK Tulsi
2.	'Student Readiness for Online Learning in relation to Gender and Stream of Study' in the <b>Conference: Learning with MOOCs 2019: Enhancing Workforce Diversity and Inclusion, 23-25 October, 2019, Milwaukee, WI, USA</b>	Presented by Dr. PK Tulsi and authored by Mr. Parminder Walia, Dr. PK Tulsi & Er. Amandeep Kaur

*"We will make electricity so cheap that only the rich will burn candles."*

*– Thomas A. Edison*

# ELECTRICAL ENGINEERING DEPARTMENT

**Prof. (Dr.) Lini Mathew**

Professor

Research Areas - Digital Signal Processing, ANN and Fuzzy Logic, Virtual Instrumentation



**Prof. (Dr.) Piush Verma**

Professor

Research Areas : Diagnostics Study of Power Transformers, Designing of Mini-Micro Hydro Power Generation, Energy Mgmt.



**Dr. Ritula Thakur**

Associate Professor

Research Areas - Power System, Microcontroller & Micro Processor, PLC and SCADA



*"We will make electricity so cheap that only the rich will burn candles."*

*– Thomas A. Edison*

# ELECTRICAL ENGINEERING DEPARTMENT

**Dr. Shimi S.L**

**Assistant Professor**

**Research Areas – Power Electronics & Drives, Digital Control, FACTS, Artificial Intelligence & Optimization, LABVIEW & its hardware interface**



**Prof. Poonam Syal**

**Professor**

**Research Areas - Energy Management, Instrumentation for Env't. Engg., Assistive Technologies, Research Methodology**



***During the year 2019-20, the department conducted 18 short term courses for polytechnic and engineering college teachers with 276 participants and 02 training programs through ICT with 398 participants. The department also conducted 02 Student Training Programmes with 15 participants and 01 workshop with 12 participants.***

***Electrical Engineering department developed one Swayam MOOC course on Big Data Analytics for Smart Grid (40 Video Films) under NRC. The department has applied for 01 Patent, 05 papers published by the department faculty in SCI Journal and 22 papers published in International Journals other than SCI Journal. The department faculty published/presented 06 papers in International conferences/seminars and one Book Chapter in International Book Series (Springer). The department also submitted 02 research proposals to DST. The department initiated the establishment of HIL Centre of Excellence in collaboration with Typhoon HIL, Switzerland and signed an MOU for research and development.***

### **Short Term Programs (Contact Mode)**

1. ANSYS-EM Software (in collaboration with ANSYS)
2. PLC and Microcontrollers
3. C Programming of Microcontrollers
4. Basics of IoT using MATLAB/SIMULINK (in Collaboration with Mathworks)
5. Distributed Generation and Microgrid
6. Hands on Practices on LabVIEW and NI-ELVIS
7. Laboratory Practices in Electrical Machines and Control
8. Hardware in Loop Simulation for Smart Grid Applications (in Collaboration with Typhoon HIL)
9. Laboratory Practices in Power Electronics and Drive
10. Electric Vehicle Technology
11. Biomedical Instrumentation
12. Recent Trends in Smart Grids and its Real Time Simulation
13. Laboratory Practices in Sensors and Data Acquisition
14. Real Time Power System Analysis (in collaboration with Opal-RT)
15. Microcontrollers and Embedded Systems
16. Thin Film Quantum Solar Cell Design and Fabrication for Green Energy Systems.
17. Modelling and Real Time Implementation of Electrical System (AICTE Sponsored)
18. Artificial Intelligence (AICTE ATAL Programme)
19. Battery Management System Through Real Time (Two day Workshop)

## Short Term Programs (ICT Mode)

1. Embedded System and IoT
2. Electric Vehicle Technology

### NRC MOOC in Big Data Analytics for Smart Grid

8233  
participants



### Student Training Program

1. Laboratory Practices on Power Electronics during 01.07.2019 to 26.07.2019 (4 Weeks)  
Coordinator Dr. Shimi S.L., 13 students
2. Laboratory Practices on Power Electronics during 01.07.2019 to 09.08.2019 (6 weeks)  
Coordinator Dr. Shimi S.L., 2 students

### Patents/Copyright

Sr.No.	Name of Patents/Copyright	Author(s) Name
1.	Patent filed - Indian Patent Application No. 202011003964, Title : Multilevel Inverter was filed on January 29, 2020, [V & A Ref: 1779-P-02-IN/TIFAC Ref: T.I. (59)/TIFA/2018],	Rohit Kumar Shimi S. L.

### Papers Published in SCI Journal

Sr.No.	Title of the Paper Published	Author (s) Name
1.	Chlorophyll Estimation using Multi-Spectral Unmanned Aerial System based on Machine Learning Techniques, Remote Sensing Applications: Society and Environment (RSASE) Elsevier Journal, Available online 15 May 2019, doi.org/10.1016/j.rsase.2019.100235 (SCI).	Gaurav Singhal, Babankumar Bansod, Lini Mathew, Jonali Goswami, B.U.Choudhary, P.L.N Raju

Sr.No.	Title of the Paper Published	Author (s) Name
2.	Recent Trends of Control Strategies for Doubly Fed Induction Generator Based Wind Turbine Systems: A Comparative Review, Archives of Computational Methods in Engineering, October, 2019. (SCI Impact Factor- 7.242).	Shivaji Karad, Ritula Thakur
3.	Artificial Intelligence based Fault Diagnosis for Condition Monitoring of Electric Motors, International Journal of Pattern Recognition and Artificial Intelligence, Vol.34, No.13, 2020. (DOI: <a href="https://doi.org/10.1142/S0218001420590430">https:// doi.org/10.1142/ S0218001420590430</a> ) (SCI-E)	Amandeep Sharma, Lini Mathew, Shantanu Chatterji, Deepam Goyal,
4.	Real Time Simulation of Hybrid Power Flow Controller, International Journal of Grid and Distributed Computing Vol. 13, No. 1, pp. 388-399, March 2020. (ESCI)	Anjali A. Bhandakkar, Lini Mathew,
5.	Real-Time Simulation of TCSC, International Journal of Future Generation Communication and Networking Vol. 13, No. 1, pp. 903-914, February 2020. (ESCI)	Anjali A. Bhandakkar, Lini Mathew,

### Papers Published in Non-SCI Journal

Sr. No.	Title of the Paper Published	Author (s) Name
1.	Design and Development of PV Solar Panel Data Logger, International Journal of Computer Sciences and Engineering, Vol.7, Issue 4, April 2019	Tarun Singh, Ritula Thakur
2.	EMG Signal Based Pattern Recognition of Grasping Movement Using MODWT and Weighted K- Nearest Neighbour, International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-8 Issue-10, August 2019. (Scopus)	Shivi Varshney, Ritula Thakur Rajvardhan Jigyasu
3.	Design and Simulation of a Novel Nine Level Inverter Topology for Motor Application, International Journal of Innovative Technology and Exploring Engineering' at Volume-8 Issue-11, September 2019. (Scopus)	Ruchika Sharma, Shimi S.L.,
4.	Symmetric Cryptography and Hardware Chip Implementation on FPGA, Proceedings of Intelligent Communication Control and Devices (ICICCD 2018), Advances in Intelligent Systems and Computing, Springer, Vol.989, 2019. (Scopus)	Priyanshi Vishnoi, S.L.Shimi Adesh Kumar
5.	Induction Motor Fault Classification using Pattern Recognition Neural Network, , International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN:2278-3075, Volume-8 Issue-9, July, 2019 (Scopus),	Shaina Grover, Amandeep Sharma, Lini Mathew, Shantanu Chatterji
6.	A Comparative Analysis of PID and FO-PID Controller on PMDC Generator, International Journal of Innovative Research in Science, Engineering and Technology, Vol.8, Issue 7, July 2019	Manik Dogra, Lini Mathew
7.	Integrated Simulation of Pacemaker and Heart Model with VISSIM, International Journal of Recent Technology and Engineering, Volume-8 Issue-2, July 2019. Page No.: 1387-1391. (Scopus),	Nitika Khurana, Ritula Thakur
8.	Integrated Simulation of Pacemaker and Heart Model for Optimization of Rhythm Therapy, International Journal of Research, Vol. 8, Issue 6, June 2019.	Nitika Khurana, Ritula Thakur

Sr. No.	Title of the Paper Published	Author (s) Name
9.	Methods of Short Term Load Forecasting: A Systematic Review, IEEE 2 <sup>nd</sup> International Conference on Power Energy, Environment and Intelligent Control, G.L. Bajaj Institute of Technology & Management, Greater Noida, 18-19 October, 2019	Dhruv Upadhaya, Navneet K Singh Ritula Thakur
10.	A Case Study of Optimal Voltage Levels for DC Home in Appliances point of view, International Journal of Information Technology and Electrical Engineering, Volume 8, Issue 3, June 2019 (UGC)	Neikhrove Pfuno, Lini Mathew
11.	A Smart Monitoring and Controlling Based on Internet of Things for Agriculture Application, International Journal of Scientific Research and Review, Volume 07, Issue 05, pp. 2247- 2253, May 2019. (UGC Journal No.: 64650).	Neha Kamboj, Ritula Thakur
12.	A Review on Different Fault Diagnosis Methods of Induction Motor, Journal of Engineering Technologies and Innovative Research, Volume 6, Issue 6, June 2019, (UGC Journal No.63975, ISSN: 2349-5162)	Vikas Kumar Singh, Amandeep Sharma, Lini Mathew
13.	Advantages of Sliding Mode Control in dc-dc Converter, Journal of Emerging Technologies and Innovative Research (JETIR), Volume 6, Issue 6, pages 234-237 June 2019 (UGC) Journal No.63075, ISSN: 2349-5162 Impact Factor 5.87.	Priyanka, Lini Mathew
14.	Sliding Mode Control of dc-dc Buck Converter using Typhoon Hardware in Loop Software, International Journal of Engineering and Advanced Technology (IJEAT) Volume-9 Issue-2, December 2019, page 5022-5028. ISSN: 2249-8958	Priyanka, Lini Mathew
15.	Performance Improvement of Three Phase Squirrel Cage Induction Motor operating under rated voltages- A design consideration for rural areas, Advances in Intelligent Systems and Computing, Vol. 989, pages.1-11, Jan.2020. <a href="https://doi.org/10.1007/978-981-13-8618-3_1">https://doi.org/10.1007/978-981-13-8618-3_1</a> Indexed in Scopus.	Raj Kumar Saini, Devender Kumar Saini, Rajeev Gupta, Piush Verma, R.P.Dwivedi, Neeraj Gandotra, Robin Thakur, Ashwani Sharma
16.	Predictive Model for Reservoir Level of Peruvannamuzhi Dam in India, International Journal of Innovative Technology and Exploring Engineering (IJITEE) ISSN: 2278-3075, Volume-9 Issue-5, March 2020. (Scopus)	Shyju. S, Lini Mathew
17.	Real-Time Simulation of Static VAR Compensator and Static Synchronous Compensator, International Journal of Recent Technology and Engineering (IJRTE) ISSN: 2277-3878, Volume-8 Issue-6, March 2020. (Scopus)	Anjali A. Bhandakkar, Lini Mathew
18.	A new design for low rating three phase induction motor with improved performance operating under rated voltage-a design consideration for rural areas, Journal on Electrical Engineering, Vol.13, No.2, pages.11-17, December 2019.	Raj Kumar Saini, Devender Kumar Saini, Rajeev Gupta, Piush Verma, R.P.Dwivedi,

Sr. No.	Title of the Paper Published	Author (s) Name
19.	Removal of Initial Phase Transient Current in DC-DC Boost Converter using Modified Switched Inductor, International Journal of Innovative Technology and Exploring Engineering, Volume-8, Issue-10, August 2019	Preeti Gupta, Shimi S.L
20.	Wind Power Generation with Doubly Fed Induction Generator (DFIG) – An Extensive Review, Journal of the Gujarat Research Society (JGRS), ISSN: 0374-8588, Vol. 21, Issue 16, pp. 1432-1437, Dec 2019.	Raj Kumar Yadav, Ritula Thakur,
21.	A review on advance type of development wind turbine generators in power generation, International Journal of Modern Communication Technologies & Research (IJMCTR) ISSN: 2321-0850, Volume-8, Issue-2, February 2020	Raj Kumar Yadav, Ritula Thakur, Raghu Nandan Singh Hada,
22.	A Review on Wind Energy Conversion System using Double Fed Induction Machine (DFIM) , International Journal of Modern Communication Technologies & Research (IJMCTR) ISSN: 2321-0850, Volume-8, Issue-3, March 2020.	Raj Kumar Yadav, Ritula Thakur,

## Papers Published/Presented at Important Conferences/Seminars

### International

Sr.No.	Title of the Paper Published	Author (s) Name
1.	Methods of Short Term Load Forecasting: A Systematic Review, IEEE 2 <sup>nd</sup> International Conference on Power Energy, Environment and Intelligent Control, G.L. Bajaj Institute of Technology & Management, Greater Noida, 18-19 October, 2019	Dhruv Upadhaya, Navneet K Singh, Ritula Thakur
2.	Application of Wavelet Analysis in Condition Monitoring of Induction Motors, International Conference (Springer), on Emerging Trends in Electro-Mechanical Technologies and Management, HMRITM, New Delhi, India, (TEMT-2019) 26-27 July, 2019	Amandeep Sharma, Pankaj Verma, Anurag Choudhary, Lini Mathew, S.Chatterji
3.	A Comparative Study of Different Converter Topologies for Photovoltaic System under Variable Environmental Conditions. International Conference (Springer), on Emerging Trends in Electro-Mechanical Technologies and Management, HMRITM, New Delhi, India, (TEMT-2019) 26-27 July, 2019	Preeti Gupta, Shimi S.L
4.	Spasticity and its Treatment : A Review, International Conference on Advanced Technologies in Science and Engineering (ICATSE 2019), PRS College of Engineering and Technology and ARMAGNA at Trivandrum 8th May 2019	Divya Shakti, Lini Mathew

Sr.No.	Title of the Paper Published	Author (s) Name
5.	Fault Diagnosing and Condition Monitoring Techniques for Induction Motors – A Review, IEEE Sponsored International Conference on Intelligent Computing and Control Systems (ICICCS 2019), VAIGAI College of Engineering, Madurai, India, May15-17, 2019, pp.1628-1634	Shaina Grover, Amandeep Sharma, Lini Mathew, Shantanu Chatterji
6.	sEMG signal based hand and finger movement using different classifiers and techniques: A Review, Proceedings of IEEE sponsored International Conference on Intelligent Computing and Control Systems (ICICCS 2019), VAIGAI College of Engineering, Madurai, India, May15-17, 2019, pp.1586-1591	Shivi Varshney, Ritula Thakur, Rajvardhan Jigyasu, Yogendra Narayana

### Book Chapters Published

Sr.No.	Name of the Chapter Published	Author (s) Name
1.	Surface EMG Signal Classification Using Ensemble Algorithm, PCA and DWI for Robot Control, Advanced Informatics for Computing Research, pp 218-230, Communications in Computer and Information Science book series, (CCIS, Volume 955), 2019. Published by Springer, Singapore, <a href="https://doi.org/10.1007/978-981-13-3140-4">https://doi.org/10.1007/978-981-13-3140-4</a> .	Yogendra Narayan, Ram Murat Singh, Lini Mathew, S. Chatterji

### Research Proposal Submitted

Sr.No.	Title of the Proposal	Author (s) Name
1.	Integrated Yoga Therapy Intervention based on ECG and EEG Perspective, to DST for possible funding under SATYAM scheme on 7th March, 2020.	PI: Dr. Ritula Thakur, Co-PI: Dr. Piush Verma
2.	Framework and Methodology for Predictive Lung Deposition Estimation using Low Cost Sensors submitted to DST on 18 <sup>th</sup> March 2020	PI: Dr. K.G.Srinivasa Co-PI: Dr. Piush Verma,

### In-Country Training Programs

Sr. No.	Title of Training Programme	Period of Training	Venue	Attended by
1.	TEQIP III Sponsored Faculty Development Programme on "Electric Vehicles and Renewable Powered Charging Stations"	15 – 21 December, 2019 (one week)	NIT Calicut, Kozhikode.	Dr. Lini Mathew
2.	Short Term Training Programme on "Introduction of AI & IoT"	03-17 June, 2019. (two weeks)	IIT Kanpur in collaboration with iSMRITI	Dr. Shimi S.L. Dr. Ritula Thakur

## In-House Training Programs

Sr. No.	Title of Training Programme	Period of Training	Attended by
1.	Module 4 on Instructional Planning and Delivery of AICTE-NINTTT(AICTE-New Initiative for New Technical Teachers Training) by NITTTR Bhopal faculty at NITTTR Chandigarh	10- 14 February, 2020	Dr. Ritula Thakur
2.	Module 2 on Master Trainers Capacity Building Training Program of AICTE-NINTTT(AICTE-New Initiative for New Technical Teachers Training) by NITTTR Bhopal faculty at NITTTR Chandigarh	10- 14 February, 2020	Dr. Piush Verma

## Theses Guided by Faculty

No. of M.E. Theses Guided	12
No. of PhD Theses Guided	Awarded - 2



# ELECTRONICS & COMMUNICATION ENGINEERING DEPARTMENT

**Prof. (Dr.) Sandeep Singh Gill**

Professor

Research Areas - VLSI CAD, Soft Computing  
Techniques, Engineering Management



**Prof. (Dr.) Amod Kumar**

Professor

Research Areas - Artificial Intelligence, Biomedical  
Engineering

**Dr. Balwinder Raj**

Associate Professor

Research Areas - Nanoelectronic Devices and Circuits,  
VLSI & Embedded System Design, Modeling and  
Simulation, FPGA Based Design



**Dr. Balwinder Singh Dhaliwal**

Associate Professor

Research Areas : Antenna (Fractal, MIMO), ANN, Digital  
Signal Processing, Soft Computing

# ELECTRONICS & COMMUNICATION ENGINEERING DEPARTMENT

**Dr. Kanika Sharma**

Assistant Professor

Research Areas – Embedded System Design, Digital System Design, Wireless Sensor Network



**Er. Garima Saini**

Assistant Professor

Research Areas - Advanced Digital Communication, Wireless & Mobile Communication, Antenna

**Prof. Anant Lal Das**

INAE- Visiting Professor

Research Areas : Electromagnetics, Microwave and Millimeter wave Engineering



**Prof. Rajesh Mehra**

Joint Professor

Research Areas - VLSI Design, Advanced Digital Signal Processing, Embedded Design

**Dr. Meenakshi Sood**

Joint Associate Professor

Research Areas : ANN, Antenna, Machine Learning, Multirate & Adaptive Signal Processing, Nature Inspired Algorithms, Soft Computing Techniques



*During the year 2019-20, Electronics and Communication Engineering Department conducted 12 short term courses for polytechnic and engineering college teachers, which were attended by 165 participants. The department conducted 07 ICT Programmes attended by 929 participants. 04 student training programmes were conducted and 40 engineering students were trained in these student training programmes. The department also conducted 02 seminars attended by 154 participants. The faculty published 12 papers in SCI Journals and 41 papers published in Non-SCI Journals. Eleven papers were published/presented in International Conferences.*

### Short Term Programs (Contact Mode)

1. Digital Image Processing using Matlab
2. Computer Aided Design of PCBs
3. Digital Signal Processing using MATLAB
4. Future Technologies
5. Embedded System Design
6. Antenna Design using Simulators
7. Matlab and its Application
8. 5G and IoT
9. Two Weeks STC on 'Microcontrollers and Embedded Systems' jointly with Electrical Engineering Department from 25/11/2019 to 06/12/2019 at Punjabi University Patiala
10. TEQIP-III Sponsored STC on 'Engineering Applications of Machine Learning and Artificial Intelligence' from 27.01.2020 to 31.01.2020 (One Week) at Government College of Engineering and Technology, Jammu
11. RF and Biomedical
12. Biomedical Applications

1. System Designing with Smart Controllers
2. Next Generation Communication
3. Embedded System and IoTs
4. 5G Communication
5. Digital System Design
6. Artificial Neural Network and its Application
7. Mobile Broadband Transformation
8. Introduction to System Designing

### Short Term Programs (ICT Mode)

### Student Training Program

1. Wireless Communication & Antenna Design
2. Embedded Systems using Arduino for students of University of Jammu.

## National Seminar/Conference:

1. National Conference on Biomedical Engineering
2. Writing Scientific Papers for Quality Journals

## Papers Published in SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"Energy efficient compression sensing-based clustering framework for IoT-based heterogeneous WSN" Springer Journal of Telecommunication Systems, Vol.74, pp.311-330, March 2020.	Rachit Manchanda, kanika Sharma
2.	Scale-free PSO for in-run and infield inertial sensor calibration, Measurement, Vol. 147, July 2019, available on-line. (IF = 3.364)	Shashi Poddar, Amod Kumar
3.	Real time estimation and suppression of hand tremor for surgical robotic applications Microsystem Technologies, January 2020, DOI 10.1007/s00542-019-04736-1 (IF = 1.61)	Akhlesh Kumar. Sanjeev Kumar, Ajeet Kaushik, Amod Kumar & J. S. Saini
4.	Development of a Hybrid SIMBO-ANN Algorithm for Optimization of SRR parameters to enhance the performance of PIFA, Journal of Scientific & Industrial Research, Vol. 78, November 2019, pp. 727-732.	Garima Saini Dr. S S Pattnaik
5.	Impact of High-k Gate dielectric and Work functions variation on Electrical Characteristics of VeSFET, Advances in Intelligent Systems and Computing (Springer book series)	Gurpurneet Kaur, Sandeep Singh Gill, Munish Rattan
6.	Carbon Nano Tube based sensor design for NEMS/MEMS applications, In Raj, B., Khosla, M., & Singh, A. (Ed.), Major Applications of Carbon Nanotube Field-Effect Transistors (CNTFET) (pp. 37-53). IGI Global. <a href="http://doi:10.4018/978-1-7998-1393-4.ch003">http://doi:10.4018/978-1-7998-1393-4.ch003</a>	Rekha Devi, Sandeep Singh Gill
7.	Development of range free three dimensional localisation in wireless sensor networks, International Journal of Sensor Networks (IJSNET), Vol. 31, No. 1, 2019	Shashi Bhushan Kotwal, Sandeep Singh Gill, Kuldeepak Singh Saini
8.	"Conventional Machine Learning and Deep Learning Approach for Multi-Classification of Breast Cancer Histopathology Images—a Comparative Insight", Journal of Digital Imaging, 33, 632–654 (2020).Indexing: SCIE, Scopus.	Shallu Sharma & Rajesh Mehra
9.	"Effect of layer-wise fine-tuning in magnification-dependent classification of breast cancer histopathological image", The Visual Computer, 36, 1755–1769 (2020).	Shallu Sharma & Rajesh Mehra
10.	Agamreet Kaur, Rajesh Mehra, Amit Saini "Hetero-Dielectric oxide engineering on dopingless gate all around nanowire MOSFET with Schottky contact source/drain" AEU - International Journal of Electronics and Communications, Volume 111, November 2019, 152888.	Agamreet Kaur, Rajesh Mehra, Amit Saini

Sr.No.	Title of the Paper Published	Author (s) Name
11.	"Investigation of Organic LED Materials Using a Transparent Cathode for Improved Efficiency", Journal of Electronic Materials Volume 48(7) , 4409–4417, April 2019.	Rana, R., Mehra, R.
12.	"Implications of Pooling Strategies in Convolutional Neural Networks: A Deep Insight", Foundations of Computing and Decision Sciences, 44(3), 303-330 (2019).	Sharma, S., Mehra, R.

### Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	A Review on Fuzzy based techniques for Energy Efficient Cluster Head Selection, "Journal of Emerging Technologies and Innovative Research, Vol.6, pp.22-25, June 2019	Abhishek Rai, Kanika Sharma
2.	A Fuzzy Based Techniques for Energy Efficient Cluster Head Selection for Wireless Sensor Network "International Journal of Engineering and Advanced Technology, Vol.8, pp.-2495-2499, August 2019	Abhishek Rai, Kanika Sharma
3.	A deep insight to heterogeneous routing protocols for harsh environment in Wireless Sensor Network, "Journal of Emerging Technologies and Innovative Research, Vol.6, no.6, pp. 565-570, June, 2019	Pratima Malhotra and Kanika Sharma
4.	Improved Multiple Gateway Node based Routing Architecture for heterogeneous Wireless Sensor Network 'Elsevier International Journal of Innovative Technology and Exploring Engineering, Vol.8,no.10, pp.2175-2180, August 2019.	Pratima Malhotra and Kanika Sharma
5.	Study of Hotspot mitigating Techniques in Wireless Sensor Networks, "Journal of emerging Technologies and Innovative Research, vol.6, no.6, pp. 249-252, June 2019	Anjali Thakur, Kanika Sharma
6.	"Energy Efficient Dynamic Multi-Hop Routing Technique in Wireless Sensor Networks" International Journal of Engineering and Advanced technology,ISSN:2249-8958, Vol.8,Issue 6, Aug.2019,pp:2942-2949	Anjali Thakur, Kanika Sharma
7.	H-Best Particle Swarm Optimization Based Localization Algorithm for Wireless Sensor Network "International Journal of Engineering and Advanced Technology (IJEAT), Volume-9 Issue-1, pp-2769-2778 October 2019	Yadevendra Kamal, Kanika Sharma
8.	Review to the optimized localization for wireless sensor network, "International Journal of Emerging Technologies and Innovative Research, ISSN : 2349-5162, Vol.6, Issue 6, Page no. 765-770, June-2019	Yadevendra Kamal, Kanika Sharma

Sr.No.	Title of the Paper Published	Author (s) Name
9.	Energy Efficient Inter and Intra Cluster Movement of Mobile Sink in Wireless Sensor Network, "Scopus International Journal of Engineering and Advanced Technology (IJEAT), ISSN : 2249-8958, Volume-8, issue-6, August 2019	Nisha Sharma, Kanika Sharma
10.	Study of Routing Schemes and its Contribution in Evolution of Sink, International Journal of Emerging Technologies and Innovative Research (JETIR), (ISSN-2349-5162), Volume 6, Issue 6, Page No. 457-462, June 2019	Nisha Sharma, Kanika Sharma
11.	Several Energy Efficient Routing Methods, architecture and System models used in WSN, "Journal of Emerging Technologies and Innovative Research, Vol.6, Issue No. 5, pp.27-32, May 2019	Rohini, Kanika Sharma
12.	Chain Based Routing Algorithm using Hybrid Optimization for Wireless Sensor network, "International Journal of Scientific and Technology Research , Volume 8, Issue 11, November 2019	Rohini, Kanika Sharma
13.	"Dynamic Multilevel Priority Packet Scheduling Using Hybrid Seec", International Journal of Scientific and Technology research, Vol.8, Issue 11, Nov.2019,pp:1149-1154.	Sonam Gupta, Kanika Sharma
14.	"Routing Algorithm using Fuzzy Logic Based Clustering with Mobile sink for wireless sensor network", International Journal of Recent Technology and Engineering, ISSN:2277-3878, vol.8, Issue 4, Nov.2019, pp. 4000-4005	Vinod, Kanika Sharma
15.	Dual Band Slotted Filtering Antenna For LTE-Advanced Applications, International Journal of Scientific & Technology Research , Vol. 8, Issue 8, August 2019, pp. 1463-1467, ISSN 2277-8616, Scopus	GurpreetKour, Garima Saini
16.	Different Substrate Material for Designing a Passive UHF RFID Tag Antenna, International Journal of Innovative Technology and Exploring Engineering, Vol.8, Issue 9S, pp. 572-580, July 2019, ISSN 2278-3075, Scopus	P. Limameren Chang, Garima Saini
17.	Multipolarised Near Field RFID Antenna for Mobile Devices, International Journal of Electronics and Engineering, Vol. 11, Issue 2, pp. 41-50, June – Dec 2019, ISSN 0973-7383	Gaurav Gupta, Garima Saini
18.	Various Techniques of Interference Management in Heterogeneous Network : A Review, International Journal of Scientific Research in Science and Technology , Vol. 6, Issue 3, pp. 310-328, ISSN 2395-6011	BaljotKaur, Garima Saini
19.	Enhancing Cell Throughput & Area Spectral Efficiency Using Two Level Soft Frequency Reuse Technique", International Journal of Innovative Technology and Exploring Engineering, Vol. 8, Issue 9, pp. 1524-1530, July 2019, ISSN 2278-3075, Scopus	BaljotKaur, Garima Saini

Sr.No.	Title of the Paper Published	Author (s) Name
20.	Design of Normal Mode Helical Antenna For UHF RFID Applications International Journal of Technical Innovation in Modern Engineering & Science , Vol. 5, Issue 7, pp.749-753,July 2019,ISSN 2455-2585. UGC journal	Namita Sharma, Garima Saini
21.	Broadband Stacked Antenna Design with Hybrid Structure for C-band Communication, International Journal of Innovative Technology and Exploring Engineering, Vol. 8, Issue 10, pp. 3510-3516, August 2019, ISSN 2278-3075,Scopus.	Swati Kandoria, Garima Saini
22.	Antenna Array Design Using Hybrid Feed for High Frequency Application, International Journal of Engineering and Advanced Technology, Vol. 8, Issue 6, August 2019, ISSN 2249-8958, Scopus	SumitTyagi, Garima Saini
23.	An Analytical Review on Broadband Antenna and Recent Advances, Journal of Emerging Technologies and Innovative Research, Vol. 6, Issue 6, June 2019, ISSN 2349-5162, UGC Journal	Swati Kandoria, Garima Saini
24.	A Review on Hybrid Feed Micro strip Antenna Array, Journal of Emerging Technologies and Innovative Research, Vol. 6, Issue 6, June 2019, ISSN 2349-5162, UGC Journal	SumitTyagi, Garima Saini
25.	Design and Performance Analysis of Application Specific Integrated Circuit for Internet of Things Application, Sensor Letter ASP, Vol.18, PP. 31-38, Jan 2020	Vivek Pogra, S K ishvakarma, and Balwinder Raj
26.	Vertical Tunnel FET : Design Optimization with Introduced SiGe Layers”, National Conference on Biomedical Engineering Dept. of ECE, NITTTR Chandigarh, 22-24 Jan 2020.	Shailendra Singh and Balwinder Raj
27.	A review of Non-conventional Analog circuit design techniques for low voltage low power operation, International Journal of research in Advent technology, Vol 7, No 5, May 2019	Kiranjeet Kaur, Sandeep Singh Gill, Navneet Kaur
28.	Whale Optimization Algorithm for Performance Improvement of Silicon-On-Insulator FinFET, International Journal of Artificial Intelligence (Scopus), Volume 18, Number 1, March 2020	Gurpuneet Kaur, Sandeep Singh Gill, Munish Rattan
29.	Stress and Deformation Analysis of Piezoresistive square diaphragm nano pressure sensor, Sensor Letters, Vol 17, No 9, September 2019, Scopus Indexed	Rekha Devi, Sandeep Singh Gill
30.	“Synergy of Bis(Sulfanylidene)Tungsten and Spiro-Ometad for an Efficient Perovskite Solar Cell”, International Journal of Engineering and Advanced Technology (IJEAT),Volume-9 Issue-1, pp.4011-4016, October 2019.	Srishtee Chaudhary, Rajesh Mehra

Sr.No.	Title of the Paper Published	Author (s) Name
31.	"IoT Based Full Protection Covers for Parked Car at Remote Stations" International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8 Issue-11, pp. 4185 - 4189, September 2019.	Kirti Masown, Rajesh Mehra
32.	"Iris Recognition using Convolutional Neural Network Design" International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8 Issue-9, pp. 672 - 678, July 2019.	Gajanan Choudhari, Rajesh Mehra
33.	"Multi-modal Iris Recognition System based on Convolution Neural Network" International Journal of Innovative Technology and Exploring Engineering (IJITEE), Volume-8 Issue-10, pp. 798 - 803, August 2019..	Gajanan Choudhari, Rajesh Mehra, Shallu
34.	"Implications of Pooling Strategies in Convolutional Neural Networks: A Deep Insight", Foundations of Computing and Decision Sciences, 44(3), 303-330 (2019).	Sharma, S., Mehra, R.
35.	"Perovskite Solar Cell design using Tin Halide and Cuprous Thiocyanate for Enhanced Efficiency ", International Journal of Engineering and Advanced Technology (IJEAT),Volume-8 Issue-6, pp.2817 - 2825, August 2019 .	Shiva Sharma, Rajesh Mehra,
36.	"Recovering Data For Optical Head Tracker Using Auto-Regression" International Journal of Scientific & Technology Research, Volume 9, Issue 04, pp. 2897 - 2902, April 2020.	Saket Kumar, Rajesh Mehra
37.	"Comparative Evaluation of Tin Perovskite based Solar Cell" Trends in Opto-Electro & Optical Communication, Volume 9, No. 3, pp. 15 - 18, 2019.	Chandni Devi, Rajesh Mehra
38.	"Face Spoofing Detection using Enhanced Local Binary Pattern", Scopus Indexed International Journal of Engineering and Advanced Technology, Vol. 9, No. 2, pp. 3365-3371, December 2019.	Karuna Grover, Rajesh Mehra
39.	"Biometric Face Anti-Spoofing And Context-Based Detection Techniques : A Review", Journal of Emerging Technologies and Innovative Research, Vol. 6, No. 4, pp. 812-816, April 2019.	Karuna Grover, Rajesh Mehra
40.	"Convolutional Neural Networks Based Scene Recognition Using Significant Feature Approach", International journal of Innovative Technology and Exploring Engineering (IJITEE), Vol.9, Issue 3, pp. 1705-1711, January 2020.	Priya Singla, Rajesh Mehra
41.	"Recognize Various Scenes using Classification methods in Million Images Dataset: A Review", in Journal of Emerging Technologies and Innovative Research (JETIR), Vol.6, Issue 6, pp. 240-246, June 2019.	Priya Singla, Rajesh Mehra

## Papers Published/Presented at Important Conferences/Seminars

### International

Sr. No.	Title of the Paper Presented/Accepted alongwith a Name of the Conference/Seminar (venue, with date)	Author(s) Name
1.	A review on different Cluster head selection methods for improving the lifetime of wireless sensor network in International conference on Electrical, Electronics, Computer Science and Information Technology on 2 <sup>nd</sup> Jan. 2020 at Ernakulam, India	Vinod, Kanika Sharma
2.	"Optimization of Hybrid Fractal Antenna Using Curve Fitting and GA Approach for RF Energy Harvesting Application," IEEE Indian Conference on Antennas and Propagation (InCAP), 19-22 Dec. 2019, Ahmedabad, India, DOI: 10.1109/InCAP47789.2019.9134573	Balwinder S. Dhaliwal, Amritpal Kaur, Suman Pattnaik, and Shyam S. Pattnaik,
3.	Impact of High-k Gate Dielectric and Workfunction Variation on Electrical Characteristics of VeSFET, AMLTA2020, Manipal University, Jaipur, February 13-15, 2020	Gurpurneet Kaur, Sandeep Singh Gill, Munish Rattan
4.	"Advances in Solar Cells as Renewable Energy", International Conference on Advancements in Computing & Management (ICACM), pp.201-208, Bangkok, Thailand, April 2019.	Srishtee Chaudhary, Rajesh Mehra
5.	"35.3% Efficient Non-Toxic Perovskite Solar Cell using Copper-Iodide and Tin-Oxide", IEEE International Conference on Computation, Automation and Knowledge Management (ICCAKM), pp.258-262, Dubai, Jan 9-11,2020.	Srishtee Chaudhary, Rajesh Mehra
6.	"FPGA Based Multiplier Less Decimator for Wireless Communication Systems", IEEE International Conference on Computation, Automation and Knowledge Management (ICCAKM), pp. 58-61, Dubai, Jan 9-11,2020.	Geetanjali, Rajesh Mehra, Lajwanti Singh
7.	"Review on Full Protection Covers for Parked Car at Remote Stations" IEEE International Conference on Signal Processing, Computing and Control, pp. 24-29, October 2019.	Kirti Masown, Rajesh Mehra
8.	" Performance Enhancement of Data centers by using low power and high speed CNTFET based SRAM Cell" IEEE International Conference Image Information Processing, pp. 459-462, November 2019.	Chauhan R, Mehra R
9.	"Current Perspectives and Advancements of Perovskite Photovoltaic Cells" Springer International Conference on Advanced Computing and Intelligent Engineering, pp. 83-92, March 2020	Chandni Devi, Rajesh Mehra
10.	"Performance Investigation of CH <sub>3</sub> NH <sub>3</sub> SnI <sub>3</sub> Solar Cell with HTM of CuSbS <sub>2</sub> " Symposium on NanoGe Fall Meeting, Berlin, Germany, November 2019.	Chandni Devi, Rajesh Mehra
11.	" An Extensive Review on Organic Light-Emitting Diode for Energy-Saving and Eco-friendly Technology" Springer International Conference on Applications of Computing, Automation and Wireless Systems in Electrical Engineering, pp 891-912, June 2019.	Rita Rana, Akansha Jetly, Rajesh Mehra

## Papers Published/Presented at Important Conferences/Seminars

### International

Sr. No.	Title of the Paper Presented/Accepted alongwith a Name of the Conference/Seminar (venue, with date)	Author(s) Name
12.	“Design and analysis on omega structure metamaterial in lower C Band for Shared Aperture Applications,” National Conference on Biomedical Engineering (NCBE-2020), Chandigarh, January 22-24, 2020.	Chahat Jain and Balwinder Singh Dhaliwal
13.	“Smart healthcare using Wireless Sensor Networks,” National Conference on Biomedical Engineering (NCBE-2020), Chandigarh, January 22-24, 2020.	Amandeep Kumar, Balwinder Singh Dhaliwal, and Damanpreet Singh
14.	“Recent Wearable Microstrip Patch Antennas for Body Area Networks,” National Conference on Biomedical Engineering (NCBE-2020), Chandigarh, January 22-24, 2020.	Vikas Jain, Balwinder S. Dhaliwal and Suman Pattnaik

### Book Chapters

Sr.No.	Title of Book / Book Chapter	Publisher	Edited / Authored by
1.	Design of Linear Phase FIR Low Pass Filter Using Mutation-Based Particle Swarm Optimization Technique In S. Khalid, (Ed.), Applications of Artificial Intelligence in Electrical Engineering (pp. 344-358). IGI Global, March 2020. <a href="http://doi:10.4018/978-1-7998-2718-4.ch017">http://doi:10.4018/978-1-7998-2718-4.ch017</a>	IGI Global	T. Kaur, & Balwinder S. Dhaliwal
2.	Low-Cost Fractal MIMO Antenna Design for ISM Band Using ANN. In: S. Jain, M. Sood, S. Paul (eds) Advances in Computational Intelligence Techniques. Algorithms for Intelligent Systems. Springer, Singapore, 21 February 2020. <a href="https://doi.org/10.1007/978-981-15-2620-6_15">https://doi.org/10.1007/978-981-15-2620-6_15</a>	Springer, Singapore	Balwinder S. Dhaliwal, G. Kaur, S. Kaur, S. Pattnaik

### In-Country Training Programs

Sr. No.	Title of Training Programme	Period of Training	Venue	Attended by
1.	Artificial Intelligence: Devices to Circuits	9-13 Jan 2020	IIT Roorkee	Dr. Balwinder Raj

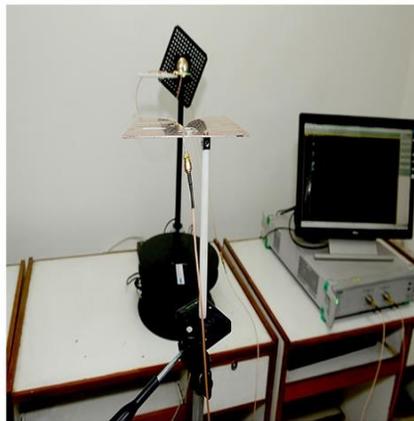
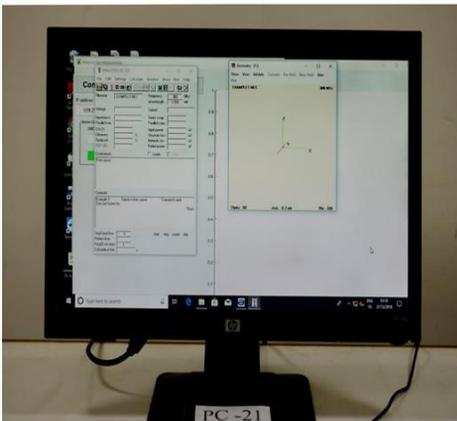
## In-House Training Programs

Sr. No.	Title of Training Programme	Period of Training	Attended by
1.	Digital Learning: The Prospects of IOT Technology in Education	25.11.2019 to 06.12.2019 (Two Weeks)	Dr. Kanika Sharma
2.	Workshop on Exam Reforms	09-12-2020 to 11-12-2020	Dr Balwinder Singh
3.	AICTE- NITTT Capacity Building Training Programme on Module 2 - Professional Ethics and Sustainability	10-02-2020 to 14-02-2020	Dr Balwinder Singh
4.	Workshop on New Education Policy on Technical Education and Challenges	06-03-2020	Dr Balwinder Singh

## Theses Guided by Faculty

No. of M.E. Theses Guided

12



# ENTREPRENEURSHIP DEVELOPMENT & INDUSTRIAL COORDINATION DEPARTMENT

**Prof. (Dr.) Suresh Kumar Dhameja**  
Professor

*Research Areas – Entrepreneurship Development, Industry  
Institute Interaction, Technical and Vocational Education  
and Training*



**Prof. (Dr.) Niraj Bala**  
Professor

*Research Areas - Entrepreneurship Development, Patenting,  
Business Startup, Skill Promotion and Rural Development,  
Industrial Coordination, Manufacturing processes*



**Dr. Harsh Vardhan Samalia**  
Associate Professor

*Research Areas - Strategic Management, Informal  
Competition, Digital Transformation of Organizations,  
Behavioral Aspects of Information Systems*



# ENTREPRENEURSHIP DEVELOPMENT & INDUSTRIAL COORDINATION DEPARTMENT

**Dr. Hemant Kumar Vinayak**  
Associate Professor

*Research Areas - Entrepreneurship Development  
including Technical, Rural, Women Entrepreneurship,  
Micro, Small and Medium Enterprises (MSME) Start up*



**Er. Amardev Singh**  
Assistant Professor

*Research Areas – Entrepreneurship Development, IPR,  
Technology Adoption and Mgmt*

*During 2019-20, the department conducted 11 short term courses for polytechnics and engineering colleges which were attended by 186 teachers. The department also trained 890 teachers from polytechnics and engineering colleges in 06 training programs organized through ICT. The department also conducted 01 student training program which was attended by 93 participants and 01 Seminar attended by 81 participants.*

*The department faculty published 06 papers in Scopus/UGC Care Journals.*

*The department also completed development of 15 Non-Print Materials. One International accreditation visit was performed by faculty of the department. EDIC department also completed a number of Extension Services Projects. Faculty of the department is supervising 8 Ph.D. scholars of IKG-PTU Jalandhar, IIM Shillong; IIM Kashipur and Thapar University.*

### Short Term Programs (Contact Mode)

1. Entrepreneurial Opportunity Identification and Project Formulation in Services Sector
2. Strengthening Industry Academic Integration in Technical Institutions
3. Intellectual Property Rights - Aspects for Business Start-ups
4. EAC (Entrepreneurship Awareness Camp)
5. Entrepreneurial Career Orientation for Electronics and Communication Engineering and allied disciplines
6. Fostering Creativity and Innovation in Entrepreneurship
7. Entrepreneurial Opportunity Identification and Project Formulation in Manufacturing Sector
8. Employability Skills for Industry 4.0
9. Industry Interaction- Industry related phase wise workshop mainly in the areas of Civil, ECE
10. Entrepreneurial Motivation Training
11. Entrepreneurial Project Formulation

### Short Term Programs (ICT Mode)

1. Entrepreneurial Opportunity Identification and Project Formulation in Services Sector
2. Intellectual Property Rights-Aspects for Business Start-ups
3. Blue Ocean Strategy-Concept, Principles and Application
4. Strengthening Industry Academia Integration in Technical Institutions
5. Entrepreneurial Career Orientation for Mechanical Engineering and Allied Disciplines
6. Business Incubation for New Start-ups

## Student Training Program

### 1. Entrepreneurship Awareness Camps

#### Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	Paper on "Information-adjusted noise model in Indian Stock Market: An Empirical Study" Journal of Engineering and Technology Education, UGC Approved, Jan-June 2019, Issue no 1, Vol 13, Chandigarh, ISSN No. 2229-631 X	Ms. Savita and Dr. SK Dhameja
2.	Paper on "An Implementation of the Information -Adjusted Noise Model to The Indian Stock Market", Journal: Our Heritage, UGC Approved, ISSN: 0474-9030, Vol-68-Issue-48-January-2020, pp 64-72	Ms. Savita and Dr. SK Dhameja
3.	Paper on "Impact of the Karma Yoga Practices Adopted by the Teachers in Higher Education on their Transformational Leadership Behaviour- A Study in Selected Universities of Delhi-NCR", International Journal of Advanced Science and Technology, Vol. 29, No. 7s, (2020), pp. 4597- 4608, ISSN: 2005-4238 IJAST (Scopus Indexed)	Ms.Divya Sharma and Dr. SK Dhameja
4.	Paper on "Transformational Leaderships of the Educators in Indian Higher Education: An empirical study", The International journal of analytical and experimental modal analysis, Volume XII, Issue II, February/2020, ISSN NO: 0886-9367 (page 2022-34). UGC Care Approved Group II Journal	Ms.Divya Sharma and Dr. SK Dhameja
5.	Paper on "Factors Affecting Employee Retention in Insurance Sector at Different Career Stages", The International journal of analytical and experimental modal analysis, Volume XII, Issue II, February/2020, ISSN NO: 0886-9367, (page 1838-69). UGC Care Approved Group II Journal	Ms.ShikhaPatheja and Dr. SK Dhameja
6.	Paper on "Impact of HR practices on organization performance: Review of literature", Test-Engineering and Management Journal, Volume 82, Page Number: 13670 – 13675, Publication Issue: January-February 2020, ISSN: 0193-4120 P. Scopus Indexed	Ms.Shivani Dhand and Dr. SK Dhameja

#### Papers Published in International/ National Conference:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"Technopreneurship Promotion in TVET sector for Growth Acceleration" as a Key-Note presentation in an International conference on "Skills Readiness for Achieving SDGs and adopting IR 4.0" jointly organized by IDEB Bangladesh and CPSC Philippines at Dhaka from 2-4 February 2020.	Dr. SK Dhameja

## Training Programs attended by Institute Faculty/Staff

### International Training / Visits

Sr. No.	Title of Training Programme	Period of Training	Venue	Attended by
1.	APACC Accreditation visit of Politeknik Sultan Azlan Shah (PSIS Polytechnic), Behrang Perak, Malaysia as Lead Auditor appointed by Asia Pacific Accreditation and Certification Commission (APACC), Manila, Philippines 2019.	18-20 September 2019	PSIS Polytechnic, Malaysia	Dr. SK Dhameja

### In-House Training Programs

Sr. No.	Title of Training Programme	Period of Training	Attended by
1.	Capacity Building Training Programme on NITTT at NITTTTR Chandigarh.	10-14 Feb 2020	Dr.SK Dhameja
2.	AICTE-NITTT training for the module on "Professional Values, Ethics, Ecology & Sustainable Development" conducted by NITTTTR, Bhopal at NITTTTR, Chandigarh.	10 - 14 February, 2020	Er. Amardev Singh

- **Conducted one-day conference on Need of Entrepreneurship for School Principles of Northern India on 17.12.2019. 81 Schools principles from different states participated. Dr. SK Dhameja delivered a keynote presentation also.**
- **Dr. SK Dhameja was one of the Chief Coordinators and Dr. HK Vinayak was one of the co-coordinator, Workshop on New Education Policy on Technical Education and Challenges on 06.03.2020.**



# LIBRARY

The library catalogue can be accessed through WEB-OPAC from anywhere on the internet. For this a link has been provided in the Central Library tab on the NITTTR web page. It is likely to be accessed directly as and when the Library website is registered. The e-resources subscribed by the library are being accessed by the students anywhere in the Institute campus. During the period more than 800 users have accessed and consulted the -journals. A directory of open source journals in Computer Science, Electronics and Electrical Engineering has been compiled. The directory is available on the Institute website, which can be accessed through a link provided in the central library tab. The holding of the library can also be accessed through IndCAT a Union Catalogue Project on the INFLIBNET.

The Library has compiled an user guide i.e. NITTTR Library Guide. In addition, the library is bringing out Current Contents of Journals received in the library. The department has organized/conducted 06 short term courses for the Polytechnic Librarians and Engineering College Librarians. 89 library staff members participated in these courses.

## Short Term Programs (Contact Mode)

1. Digital Library Management
2. Recent Trends in Libraries
3. Cloud Computing Applications in Libraries
4. Knowledge Organisational Tools
5. Information Literacy and Life Long Learning
6. Building Digital Library using GSDL

# MECHANICAL ENGINEERING DEPARTMENT

**Prof. (Dr.) Sukhdeep Singh Dhami**

**Professor**

**Research Areas – Mechatronics, Automation & Control  
System, Modeling & Simulation**



**Prof. (Dr.) B S Pabla**

**Professor**

**Research Areas - Manufacturing Technology, CAD/CAM &  
CNC Machines, Optimization Techniques**

**Prof. (Dr.) S S Banwait**

**Professor**

**Research Areas – Engineering Design, Production  
Management, Manufacturing Tech.**



# MECHANICAL ENGINEERING DEPARTMENT

**Prof. (Dr.) Rupinder Singh**  
Professor

**Research Areas : DOE ANN RSM TAGUCHI, Non-  
Conventional Machining, Additive Manufact., Metal casting**



**Er. Sunil D Jassal**  
Associate Professor

**Research Areas - Thermal Engineering**

**Dr. P Sudhakar Rao**  
Assistant Professor

**Research Areas - CAD/CAM, Manufacturing  
Technology**



*During the year 2019-20, the department conducted 25 short term courses for polytechnic and engineering college teachers, which were attended by 339 participants. The department also conducted 04 ICT Programs and 600 participants attended. 01 student training program in the Advanced Areas of Mechanical Engineering was conducted and 06 engineering students were trained by the department.*

*The department faculty published 13 papers in SCI Journal and 30 papers in International journals other than SCI indexed. The department faculty also published/presented 01 paper in International Conferences/Seminars during 2019-20. Department also published 01 edited book titled Biomanufacturing, Publisher: Springer. ATAL Programs on '3D Printing & Design' & 'Robotics' were also conducted.*

### Short Term Programs (Contact Mode)

1. Engineering Materials and their Testing
2. CAD using CREO
3. Additive Manufacturing
4. Repair and Maintenance of Machine Tools
5. Advances in Manufacturing
6. Finite Element Analysis using ANSYS
7. Metrology Laboratory Practices
8. Refresher Course in Mechanical Engineering
9. Computer Aided Manufacturing
10. CNC Machines: Operation & Programming
11. Reverse Engineering
12. AutoCAD
13. Automation and Robotics
14. Optimization Using MATLAB
15. Mechatronics
16. Recent Trends in Automobile Technology
17. Welding Laboratory Practices
18. Haptic Technology for Design of Soft Robots
19. Modeling and Simulation using MATLAB
20. Engineering Optimization
21. Workshop Safety Practices
22. Refresher Course in Mechanical Engineering
23. NBA Accreditation of Engineering Programs
24. Supervisory Development for Workshop Instructors
25. Ergonomics and Product Design

### Short Term Programs (ICT Mode)

1. Modeling and Simulation using MATLAB
2. IoT in Manufacturing
3. Green Manufacturing
4. Recent Trends in Automobile Technology

## Ph.D. Awarded

Ph.D. Thesis Examination of Dr. Deepam Goyal (Supervisors: Prof. B. S. Pabla, Prof. S. S. Dhami) was successfully conducted in May, 2019.

## Industry-Institute Collaboration

1. A team comprising of Dr. S. S. Dhami, Dr. Lini Mathew & Dr. S. S. Gill from NITTTR, Chandigarh and Dr. Shrikanth Bhat from ABB India Ltd., Bengaluru, visited Centre for Artificial Intelligence & Robotics (CAIR-DRDO), Bengaluru, in December 2019 to discuss future research activities under Simulation Centre of Excellence established in NITTTR, Chandigarh with financial support from ABB India Ltd., Bengaluru under CSR.

## Curriculum Revision

2. Prof. B. S. Pabla coordinated a consultancy project on curricula revision of all branches of Diploma Programs for HP Board of Technical Education. A series of workshops were conducted which concluded in June 2019.

## Student Training Program

1. Metrology, CNC Programming & Machining, CAD & Additive Manufacturing.

## Papers Published in SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"Non-Contact Fault Diagnosis of Bearings in Machine Learning Environment", IEEE Sensors Journal, doi: 10.1109/JSEN.2020.2964633 [IEEE]	Goyal, D., Dhami, S.S., Pabla, B.S.
2.	"Improvement in performance of cryogenically treated tungsten carbide tools in face milling of Ti-6Al-4V alloy", Materials and Manufacturing Processes, doi: 10.1080/10426914.2019.1615079, pp.1-10 [Taylor and Francis]	Saini, A., Pabla, B.S. and Dhami, S.S.
3.	"Processing, tool wear measurement using machine vision system and optimization of machining parameters of boron carbide and rice husk reinforced aa 7075 hybrid composite" Materials Research Express, Vol. 6(8), pp. 1-18 [IOP]	Verma, N., Vettivel, S.C., Rao, P.S., & Zafar, S.
4.	"Support Vector Machines Based Non-contact Fault Diagnosis System for Bearings", Journal of Intelligent Manufacturing, doi: 10.1007/s10845-019-01511-x [Springer]	Goyal, D., Choudhary, A. Dhami, S.S., Pabla, B.S.

Sr.No.	Title of the Paper Published	Author (s) Name
5.	"Preparation and characterization of electrodeposited Ni-TiC, Ni-TiN, and Ni-TiC-TiN composite coatings on tungsten carbide cutting tool", Proceedings of the Institution of Mechanical Engineers, Part J: Journal of Engineering Tribology, p.1350650119841214 [Sage]	Saini, A., Pabla, B.S. and Dhama, S.S.
6.	"Effect of extrusion parameters on primary recycled ABS: mechanical, rheological, morphological and thermal properties", Materials research express, Vol. 7, 2020, doi.org/10.1088/2053-1591/ab6b5e	Vinay Kumar, Rupinder Singh, I.P.S. Ahuja
7.	"On flexural and pull out properties of 3D printed PLA based hybrid composite matrix", Materials research express, Vol. 7, 2020, doi.org/10.1088/2053-1591/ab66f4	Sudhir Kumar, Rupinder Singh, T.P.Singh, Ajay Batish
8.	"On compressive and morphological features of 3D printed almond skin powder reinforced PLA matrix", Materials research express, Vol. 7, 2020, doi.org/10.1088/2053-1591/ab5e61	Rupinder Singh, Ranvijay Kumar, Mohit Singh, Pawanpreet
9.	"Investigations for mechanical, thermal and magnetic properties of polymeric composite matrix for four dimensional printing applications" Jol. of Brazilian Society of Mechanical Sciences and Engg., Vol. 42, 2020, DOI: 10.1007/s40430-020-2251-4, (Springer publications)	Sudhir Kumar, Rupinder Singh, TP Singh, Ajay Batish
10.	"Investigations for hardness of investment casted implants fabricated after vapor smoothing of FDM replicas", Jol. of Brazilian Society of Mechanical Sciences and Engg., Vol. 42, 2020, DOI:10.1007/s40430-020-2265-y, (Springer publications)	Daljinder Singh, Rupinder Singh, K.S.Boparai
11.	"On mechanical and thermal properties of cryo-milled primary recycled ABS", Sadhana, , Vol.45, 2020, doi.org/10.1007/s12046-020-1317-4, (Springer Publications)	Vinay Kumar, Rupinder Singh, I.P.S. Ahuja
12.	"Processing Techniques of Polymeric materials and their reinforced composites", Advances in Materials and Processing Technologies, Vol. 6, No.3, 2020, DOI: 10.1080/2374068X.2020.1728989, (Taylor and Francis publications)	Ranvijay Kumar, Rupinder Singh, IPS Ahuja,
13.	"Multifactor optimization for development of hybrid aluminum matrix composites", Indian Jol. of Engg and Material Science, Vol. 27, 2020	Swarandeep Singh, Rupinder Singh, S..S. Gill

## Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	"Development of IIoT based condition monitoring system for rotating machine elements", International Journal of Scientific & Technology Research	Gautam, A., Goyal, D., & Pabla, B.S.
2.	"Optimization of ECM parameters for Machining Ti-6Al-6V-2Sn", International Journal of Scientific Technology and Research	Sharma, P., & Banwait, S.S.
3.	"Cloud based status monitoring of earthmoving machinery", International Journal of Scientific Technology and Research	Paul, N., & Dhami, S.S.
4.	"Characterization of ABS for Enhancement of Mechanical Properties", International Journal of Innovative Technology and Exploring Engineering, Vol. 8(10), pp. 2164-2167.	Saroha, V., Pabla, B.S. & Bhogal, S.S.
5.	"Design Optimization of a Centrifugal Oil Cooling Blower Casing Using Modal & Harmonic Analysis", International Journal of Scientific & Technology Research, Vol. 8(11), pp. 3487-3492.	Gora, R., Dhami, S.S., and Goyal, D.
6.	"Effects of forced cooling in laser forming", International Journal of Innovative Technology and Exploring Engineering, Vol. 8(10), pp. 3782-3787.	Kumar, S., & Dhami, S.S.
7.	"Evaluation of mechanical properties of different bamboo species for structural applications", International Journal of Innovative Technology and Exploring Engineering, Vol. 8(11), pp. 2927-2935.	Singh, K., Garg, H., & Pabla, B.S.
8.	"Finite element analysis of different fused deposit materials utilized in fabrication of elbow orthosis", International Journal of Innovative Technology and Exploring Engineering, Vol. 8(12), pp. 4847-4850.	Koundal, N., & Banwait, S.S.
9.	"Estimation of injection moulding process for a thin fresnel lens by plastic flow simulation", International Journal of Innovative Technology and Exploring Engineering, Vol. 8(10), pp. 3276-3282.	Kumar, A., Garg, H., & Pabla, B.S.
10.	"Thermal image based fault diagnosis of gears using support vector machines", International Journal of Innovative Technology and Exploring Engineering, Vol. 9(1), pp. 155-160.	Kumar, A., Goyal, D, & Pabla, B.S.
11.	"Vibration analysis and fault identifications of rolling elements bearings – a review", International Journal of Mechanical and Production Engineering Research and Development, Vol. 9(4), pp. 1133-1142.	Minhas, N., Nikhil, & Banwait, S.S.
12.	"Optimization of process parameters during electrochemical machining", International Journal of Innovative Technology and Exploring Engineering, Vol. 8(12), pp. 2683-2687	Aakash, & Banwait, S.S.
13.	"Optimization of Cutting Parameters for Minimal Surface Roughness in Single Point Diamond Turning of Ti6AL4VELI", International Journal of Innovative Technology and Exploring Engineering, Vol. 8(12), pp. 3222-3226	Chandra, N., Dhami, S.S.
14.	Investigations on the feasibility of Jatropa curcas oil based biodiesel for sustainable dielectric fluid in EDM process; Materials Today: Proceedings	Khan, Mohd Yunus; Rao, P Sudhakar; Pabla, BS;

## Papers Published in Non-SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
15.	Hybridization of Electrical Discharge Machining Process; International Journal of Engineering and Advanced Technology (IJEAT)	Khan, Mohd Yunus; Rao, P Sudhakar;
16.	Processing, tool wear measurement using machine vision system and optimization of machining parameters of boron carbide and rice husk ash reinforced AA 7075 hybrid composite; Materials Research Express	Verma, Nishant; Vettivel, SC; Rao, PS; Zafar, Sunny;
17.	Electrical discharge machining: vital to manufacturing industries; Int. J. Innov. Technol. Explor. Eng.	Khan, Mohd Yunus; Rao, P Sudhakar;
18.	Optimization of Process Parameters of Electrical Discharge Machining Process For Performance Improvement; International Journal of Innovative Technology and Exploring Engineering (IJITEE)	Khan, Mohd Yunus; Rao, P Sudhakar;
19.	"Electrical Discharge Machining of Carbon Fiber Reinforced Plastics: A Review"; Journal of Material Science and Mechanical Engineering (JMSME),	Rao, PS; Singh, S; Pandey, M; Pandey, VP;
20.	Tribological study of mechanically milled graphite nanoparticles codeposited in electroless Ni-P coatings; Metal Powder Report	Thakur, IS; Pandey, VS; Rao, PS; Tyagi, S; Goyal, Deepam;
21.	Design Considerations for Connecting Rod; International Journal of Engineering and Advanced Technology (IJEAT)	Sriharsha, B.; Rao, PS;
22.	Impact Of Extrusion Process On Product Quality; International Research Journal of Engineering and Technology (IRJET)	Kumar, Sunil; Rao, PS;
23.	Optimization Of Machining Parameters Of Electrochemical Machining-A Review; International Journal Of Technical Innovation In Modern Engineering & Science (IJTIMES)	Bansal, Rahul; Rao, P Sudhakar; Singh, Amritbir;
24.	Recent Developments in Electro Chemical Machining-A Review; International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES)	Kumar, Ashish; Rao, PS;
25.	Hydraulic and Thermal Analysis of Corrugated and Smooth Double Pipe Heat Exchanger using Computational Fluid Dynamics; Journal of Emerging Technologies and Innovative Research (JETIR)	Sood, Shubham; Rao, P Sudhakar;
26.	Optimization Of Machining Parameters During Cnc Milling Of Incoloy 800, International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES)	Singh, Balwant; Rao, P Sudhakar;
27.	Study Of Different Machining Process On Metal Matrix Composites, International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES)	Paliwal, Shivangi; Rao, P Sudhakar;
28.	Optimization Of Machining Parameters Using Rotary Ultrasonic Machining Of Brittle Material: A Review, International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES)	Mehta, Ankush; Rao, P Sudhakar; Singh, Bibandeeep;
29.	Biodynamic Response of Femur Bone; International Journal of Innovative Technology and Exploring Engineering (IJITEE)	Gangwar, Arunkumar; Rao, PS;
30.	International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES); HEAT AND MASS TRANSFER	Garg, Vikas; Rao, P Sudhakar;

## Theses Guided by Faculty

No. of ME Theses Guided

29

No. of PhD Theses Guided

Awarded - 2

## Papers Published/Presented at Important Conferences/Seminars

### International

Sr. No.	Title of the Paper Presented/Accepted alongwith a Name of the Conference/Seminar (venue, with date)	Author(s) Name
1.	Heat and Mass Transfer Modelling in Lyophilization using Comsol Multiphysics, Proceedings of the 2019 COMSOL Conference, November 28-29, 2019, Bangalore	Vikas Garg, Sukhdeep S. Dhami, Harry Garg, P. Sudhakar Rao

### In-Country Training Programs

Sr.No.	Title of Training Programme	Period of Training	Venue	Attended by
1.	STC on Advanced Machining Methods & Process Optimization	December 11 to 15, 2019	NIT Jalandhar	Dr. P. S. Rao



# MEDIA ENGINEERING DEPARTMENT

**Prof. (Dr.) Rakesh Wats**

**Professor**

**Research Areas - Quality Mgt. & General Management,  
Civil Engineering (Irrigation & Hydraulics)**



**Prof. (Dr.) SS Pattnaik**

**Professor & Currently holding the Position of Director  
Research Areas - Soft Computing, Multimedia, Antenna &  
Microwave, RF & Bio-medical**



*During the year 2019-20, the department conducted 09 short term courses in Contact Mode and 06 Short Term Programmes in ICT Mode for polytechnic and engineering college teachers, which were attended by 149 and 649 participants respectively. The department conducted 01 student training programme and 1 student attended.*

### Short Term Programs (Contact Mode)

1. Smart Classroom: Concept, Design, Operation and Maintenance
2. NBA Accreditation through Outcome Based Education
3. Instructional Material Development using Latest Media
4. Graphics and Animation Development
5. Video Editing Techniques
6. Development of MOOCs Videos
7. Use of Digital Video Camera for Digital Content Generation
8. Video Production Techniques
9. Digital Learning

*Media Engineering department completed 01 MOOC of NITTT, AICTE comprising of 16 units of e-content and 60 videos and 3 course booklets. The department also provided assistance in 4 recruitment projects under consultancy projects. The faculty published/presented 1 paper in International Conference. The department also completed 2 Extension Services Projects and 5 Consultancy Services Projects. One Workshop of 3-days was conducted, which was attended by 29 participants. The department also developed 51 MOOCs Film Videos, 09 educational video films, 42 lecture based video films/NCTEL Videos and 73 video lectures uploaded on YouTube and completed 02 E-content.*

### Short Term Programs (ICT Mode)

1. Leadership, Management Strategy and Professional Ethics
2. Sustainable Creativity & Innovation Management in Institutions
3. Faculty Development: Planning and Management for Institutional Excellence
4. Strategic Management and SWOT Analysis for Institutional Excellence
5. Technical Teachers Self Esteem, Motivation and Professionalism Development
6. NBA Accreditation for Quality Assurance

## Papers Published in SCI Journal:

Sr.No.	Title of the Paper Published	Author (s) Name
1.	Three-Dimensional Dual-Band Dielectric Resonator Antenna for Wireless Communication, IEEE Access, vol. 8, pp. 71593 - 71604, 2020	S. Mishra, S. Das, S. S. Pattnaik, S. Kumar and B. K. Kanaujia
2.	Three dimensional cylindrical design multiple-input multiple-output/diversity antenna with high isolation for wireless communication applications, International Journal of RF and Microwave Computer-Aided Engineering. 2019	S. Mishra, S. Das, S. S. Pattnaik, S. Kumar, B. K. Kanaujia
3.	Wide CPW Fed Multiband Wearable Monopole Antenna with Extended Grounds for GSM/WLAN/WiMAX Applications, International Journal of Antennas and Propagation, 2019, Article ID 4264513, pp.1-14.	D. Mandal and S.S. Pattnaik
4.	Low-profile circularly polarized planar antenna for GPS L1, L2, and L5 bands, Microwave and Optical Technology Letters, 2019, pp. 1–10	S. Mishra, S. Das, S. S. Pattnaik, S. Kumar, B. K. Kanaujia
5.	Impact Analysis of Mobile Phone Electromagnetic Radiations on Human Electroencephalogram, Sadhana, vol. 44, no. 134, pp. 1-12, May 2019.	Suman Pattnaik, Balwinder Singh Dhaliwal and S S Pattnaik
6.	A Modified Two-Step ANN Ensemble Approach to Improve Generalization and its Application in Fractal Antenna Design, Journal of Circuits, Systems and Computers, Accepted 2019	Balwinder S. Dhaliwal, Gaganpreet Kaur, Navreet Saini, Shyam Sundar Pattnaik and Simranjit Kaur Josan
7.	Development of a Hybrid SIMBO-ANN Algorithm for Optimisation of SRR parameters to enhance the performance of PIFA, Journal of Scientific and Industrial Research, Vol. 78, November 2019, pp. 727-732	Garima Saini, S S Pattnaik

## Papers Published/Presented at Important Conferences/Seminars

### International

Sr.No.	Title of the Paper Presented/Accepted alongwith Name of the Conference/Seminar (venue, with date)	Author(s) Name
1.	Employee Engagement and its relationship with organizational Effectiveness.	Dr. Rakesh Wats

### International / National Seminar/Conference Coordinated:

Sr.No.	Title of the Conference/Seminar	Coordinator
1.	Innovative Technologies for Clean & Sustainable Development	Dr. Rakesh Wats

### Theses Guided by Faculty

No. of PhD Theses Guided

Awarded - 4

*“Surely we have a responsibility to leave for future generations a planet that is healthy and habitable by all species.”*

*– Sir David Attenborough*

# RURAL DEVELOPMENT DEPARTMENT

**Prof. (Dr.) Poonam Syal**

Professor

Research Areas - Energy Management, Instrumentation  
for Env't. Engg., Assistive Technologies, Research  
Methodology



**Prof. (Dr.) Upendra Nath Roy**

Professor

Research Areas – Watershed Management, Rural Sanitation,  
Climate Change & Disaster Management, Organic Farming

**Dr. Amit Goyal**

Assistant Professor

Research Areas - Structure Dynamics, Masonry  
Structure, Low Cost Housing



**The Department conducted 13 training programs for polytechnics and engineering colleges teachers in the year 2019-20 in which 288 polytechnic and engineering college teachers participated. The department also conducted 04 ICT based training programs in which 548 teachers participated. Apart from it four workshops on Swachh Bharat Abhiyan and Unnat Bharat Abhiyan were organized for different States in the northern region in which 113 participants participated. The Department conducted a National Seminar in collaboration with IIT Delhi on “Unnat Bharat Abhiyan: Prospects and Challenges” on 28-29 November 2019 in which 166 participants participated. Department organized another national conclave on “Innovative Rural Development Conclave (ERDC) – 2019” on 18th December 2019 in which 120 participants participated. The department conducted 01 Pre-Job Training Programs for MBA (Rural Development) Students of Institute of Integrated Himalayan Studies (IIHS), Himachal Pradesh University, Shimla as well as MSc Students of Rural Technology Department of HNB Garhwal University, Srinagar in which 25 students participated. The department faculty members presented 02 research papers in International Conferences and 05 papers in National Conference, Seminar and Workshop.**

### Short Term Programs (Contact Mode)

1. Sustainable Development and Natural Resources Management
2. Role of Technical Institutions in Integrated Village Development
3. Environmental Protection and Sustainable Development
4. Environmental Technology and Sustainable Power
5. Unnat Bharat Abhiyan and Application of Technology
6. Climate Change, Disaster Management and Sustainable Development
7. Innovation in Organic Farming
8. Clean and Green Energy Sources
9. Innovation and Research Areas in Science and Technology
10. Innovative Technologies for Village Development
11. Energy Conservation and Management
12. Unnat Bharat Abhiyan
13. Environment and Instrumentation

### Short Term Programs (ICT Mode)

1. Climate Change and Disaster Management
2. Innovation and Research Areas in Science and Technology
3. Sustainable Development and Natural Resources Management
4. Affordable Housing in Disaster Prone Areas

## Student Training Program

1. Pre-Job Training Programme on "Technologies and Techniques for Sustainable Rural Development" for MBA (Rural Management) Students-1st Semester from IIHS, HP University, Shimla and M.Sc. Rural Technology Students from Department of Rural Technology, School of Agriculture & Allied Sciences, HNB Garhwal University, Srinagar (UK), 20-31 January 2019 at NITTTR, Chandigarh. There were 20 students from IIHS, Shimla and five students from HNB Garhwal University in this training programme.

## Papers Published/Presented at Important Conferences/Seminars

### International

Sr. No.	Title of the Paper Presented/Accepted along with a Name of the Conference/Seminar (venue, with date)	Author(s) Name
1.	Paper presented in International Conference on "Agro-ecology Transforming Agriculture & Food System" in Africa at Nairobi from 18-21 June 2019	UN Roy
2.	"Study on design and development of NZEB", International Conference on Innovative Technologies for Clean and Sustainable Development 19 - 21 February 2020 at NITTTR, Chandigarh	Balkar Singh, Sanjay Sharma, Poonam Syal

### National/Regional

Sr. No.	Title of the Paper Presented/Accepted along with a Name of the Conference/Seminar (venue, with date)	Author(s) Name
1.	"Increasing Income of the Farmers By Creating Chandigarh Organic Farmers Market" on 11th August, 2019 in National Workshop on "TechSeva4" from 10-12 August, 2019 at IIT Delhi in Technical Session on <b>Small Farmers- High Income</b> .	UN Roy
2.	Theme Paper Presentation on Unnat Bharat Abhiyan: NITTTR Chandigarh Experiment in a national seminar on "Unnat Bharat Abhiyan: Prospects and Challenges" was organized by NITTTR Chandigarh on 28 – 29 November 2019 by NITTTR Chandigarh	U N Roy
3.	"Innovative Projects of Rural Development" paper presented in a national Conclave on "Innovative Rural Development Conclave (ERDC) – 2019 organized on 18 <sup>th</sup> December 2019 by NITTTR Chandigarh	U N Roy

Sr. No.	Title of the Paper Presented/Accepted along with a Name of the Conference/Seminar (venue, with date)	Author(s) Name
4.	"Technological Interventions for Sustainable Rural Development: Climate Smart and SDG Approach" presented in a Capacity Building and Training under RD&PR – Visioning Workshop on 3rd Jan 2020 at Panagal Building, Chennai Chaired by ACS, RD&PR and ACS/DG (Trg), Organized by SIRD and PR, Tamil Nadu	U N Roy
5.	"Application of IoT in Rural Development", in National Seminar on 'Unnat Bharat Abhiyan: Prospects and Challenges' organised at NITTTR, Chandigarh from 28 - 29 November, 2019	Poonam Syal & Pushkar Raj

# HINDI CELL

“हिन्दी द्वारा सारे भारत को एक

सूत्र में पिरोया जा सकता है”

स्वामी दयानन्द

## Activities of Hindi Cell of the Institute

संस्थान के कामकाज में राजभाषा हिन्दी के उत्तरोत्तर प्रचार-प्रसार एवं विकास के लिए एवं हिन्दी को जन-मानस की भाषा बनाने के उद्देश्य से संस्थान में एक हिन्दी एकक बनाया गया। जिसमें अपने अपने विषय में सुशिक्षित एवं कुशल स्टाफ कार्यरत है। हिन्दी एकक में दो पद वरिष्ठ अनुवादक तथा एक हिन्दी टाइपिस्ट का पद है। इस समय एक हिन्दी अनुवादक तथा एक पद हिन्दी टाइपिस्ट हैं जिनके कार्य का सर्वेक्षण (सुपरविज़न) फैकल्टी इंचार्ज प्रशासन द्वारा किया जाता है।

हिन्दी एकक की गतिविधियां निम्नलिखित हैं :

1. संस्थान की वार्षिक रिपोर्ट, तुलन-पत्र, लेखा-परीक्षा एवं अन्य दस्तावेज़ इत्यादि का अनुवाद कार्य एवं टाईप कार्य।
2. संस्थान का ऑपरेशनल प्लान (सक्रियात्मक योजना) का अंग्रेजी से हिन्दी में अनुवाद कार्य एवं टाईप कार्य।
3. मानव संसाधन विकास मंत्रालय एवं नगर राजभाषा कार्यान्वयन समिति, चण्डीगढ़ के साथ पत्राचार।
4. प्रत्येक वर्ष सितम्बर माह में हिन्दी दिवस, हिन्दी सप्ताह एवं हिन्दी माह का आयोजन एवं इस समारोह से संबद्ध प्रतियोगिताओं इत्यादि का आयोजन।
5. हिन्दी कार्यशालाओं का आयोजन।
6. संस्थान की राजभाषा कार्यान्वयन समिति की तिमाही बैठकों का आयोजन।
7. संस्थान में हिन्दी के प्रगामी प्रयोग से संबंधित तिमाही/छमाही एवं वार्षिक रिपोर्ट मानव संसाधन विकास मंत्रालय को प्रेषित की जाती है।

# HINDI CELL

“हिन्दी द्वारा सारे भारत को एक

सूत्र में पिरोया जा सकता है”

स्वामी दयानन्द

8. सेवारत स्टॉफ के हिन्दी प्रशिक्षण के संदर्भ में हिन्दी रोस्टर का रख-रखाव एवं उन्हें उनके हिन्दी ज्ञान के स्तर के आधार पर प्रशिक्षण दिलवाना ।
9. नगर राजभाषा कार्यान्वयन समिति, चण्डीगढ़ की बैठकों में भाग लेना तथा समिति द्वारा आयोजित नगर स्तरीय प्रतियोगिताओं में इच्छुक स्टॉफ को नामित करना ।
10. संस्थान के दैनिक कामकाज़ में प्रयुक्त होने वाले दस्तावेज़/रबड़ की मोहरें इत्यादि द्विभाषी रूप में जारी करना ।
11. संस्थान की मुख्य इमारत एलईडी डिस्प्ले बोर्ड पर ‘आज का शब्द’ द्विभाषी रूप में लिखा जाता है। यह शब्द प्रति कार्य-दिवस पर लिखा जाता है।

## 3.1 Land and Constructed Space

The Institute's main campus is located in the educational complex in Sector 26 on a plot of about **15.98 acres** of land. The main campus includes:

- **Homi Bhabha Academic Block** housing the departments of Applied Science, Civil Engineering, Electrical Engineering, Electronics Service Centre, Electronics and Communication Engineering, Mechanical Engineering and Rural Development.
- **Ramanujan Centre for Computer Science and Educational Television** housing the departments of Computer Science and Engineering, Educational Television Centre, Media Centre and Information Management and Coordination Department.
- **Sir J C Bose Academic and Administrative Block** housing the Director's Office, Administrative and Accounts Section, Institute's Library and the departments of Curriculum Development, Education and Educational Management and Entrepreneurship Development and Industrial Coordination.
- **Visvesvaraya Lecture Hall Complex** includes **08** numbers of Hi-tech Lecture Halls.
- **Chandrasekhar Hall, Mother Teresa Hall, Amartya Hall and Tagore Hall** (hostel for men and women), and **Student Centre**.
- **Har Gobind Khorana Guest House** with 11 A/C and fully furnished rooms, a Dining Hall, Conference Hall and Exercise Room.
- **Raman Hall** – Guest House No. 2 with 51 A.C. and fully furnished room with dining room.
- The Institute has a playground, volley ball ground, children park and outdoor gym in the campus.
- **Faculty and Staff Residences.**

Besides the main campus in Sector 26, there are additional residential campuses in Sectors 29 and 42 with eighty houses for residential accommodation for staff and faculty. In Sector 29, total area is 0.75 acre and in Sector 42, total area is 1.25 acre. The Institute also has a children park in Sector-29 campus and a gym-cum-meditation centre in Sector – 42 Campus.

**During 2019-20, the following renovation work was completed:**

- Renovation work of Institute Old Hostel (Chander Shekhar Hall) – 100 rooms with balconies, including bathrooms, corridors and staircase etc. at NITTTTR, Sector 26, Chandigarh by BSNL (Civil) and Electrical work. The work is in progress.
- Renovation work of Type-III (15 Houses) & Type IV Houses (8 Houses) in Sector 42, Chandigarh by BSNL (Civil) and Electrical work. Work is in progress.
- Renovation and completion work of Conference Hall II.
- Renovation and completion work of IoT Laboratory in Computer Science Department.



### 3.2 Equipment

Equipment worth ₹43.16 lakh was purchased during the year 2019-20. The total value of equipment increased to ₹5883.78 lakh as on 31.03.2020. After providing necessary depreciation on the assets, the net value of the equipment remained at ₹2592.88 lakh as on 31.03.2020.

### 3.3 Furniture

Furniture worth ₹ Nil was purchased during the year 2019-20. The total value of furniture was ₹378.07 lakh as on 31.03.2020. After providing necessary depreciation under rules, the net value of furniture remained at ₹165.13 lakh as on 31.3.2020.

### 3.4 Expenditure

An expenditure amounting to ₹3432.48 lakh has been incurred during the financial year 2019-20 under various schemes as indicated below:

Sr. No.	Name of the Scheme	(Rupees in Lakh)
		Expenditure incurred
1.	OH-35 (Capital)	217.56
2.	OH-31 (General)	1169.24
3.	OH-36 (Salary)	2045.68
	<b>Total Expenditure</b>	<b>3432.48</b>

### 3.5 Library

Sr. No.	Particulars	No. available as on 31.03.2020
1.	Number of Books	49487
2.	Number of ISI and IRC	10043
3.	Bound Journals	4051
4.	Print Journals	37
5.	Newspapers	10
6.	Magazines	14
7.	e-journals (Through INFLIBNET Consortia) <ul style="list-style-type: none"> <li>• IEL</li> <li>• ASCE</li> <li>• ASME</li> <li>• Economic &amp; Political Weekly</li> <li>• Institute for studies in Industrial Development (ISID)</li> <li>• J Gate Plus (JCCC)</li> <li>• JSTOR (2500)</li> <li>• Springer Link 1700 collection</li> <li>• Nature</li> <li>• Web of Science Lease Access</li> </ul>	

***CONTRIBUTIONS  
OF NEWLY  
JOINED  
FACULTY TO  
OTHER  
ORGANIZATIONS  
AFTER JOINING  
THIS  
INSTITUTION***



### Papers published in Journals (2019-20)

1. Hitesh Arora, Rupinder Singh, G.S.Brar, "On mechanical and morphological investigations of tungsten inert gas welded SS 304 thin pipe joints", *Measurement and Control*, Vol. 53, No.1-2, 2020, PP 61-72, DOI: 10.1177/0020294019885152
2. Nishant Ranjan, Rupinder Singh, Ranvijay Kumar, IPS Ahuja, JP Singh, Anita K Verma, Ankita Leekha, "On 3D printed scaffolds for orthopedic tissue engineering applications", *SN Applied Sciences*, 2(2), 2020, doi.org/10.1007/s42452-020-1936-8, (Springer publications), pp: 192
3. Sudhir Kumar, Rupinder Singh, M.S.J Hashmi, "Metal matrix composite: a methodological review", *Advances in Materials and Processing Technologies*, Vol. 6, No. 1, 2020, doi.org/10.1080/2374068X.2019.1682296, (Taylor and Francis publications), pp: 13-24
4. Vinay Kumar, Rupinder Singh, I.P.S. Ahuja, M.S.J. Hashmi, "On technological solutions for repair and rehabilitation of heritage sites: A review", *Advances in Materials and Processing Technologies*, Vol. 6, No. 1, 2020, (Taylor and Francis publications), doi.org/10.1080/2374068X.2019.1709310, 146-166
5. Sudhir Kumar, Rupinder Singh, T.P.Singh, Ajay Batish, "On flexural and pull out properties of 3D printed PLA based hybrid composite matrix", *Materials research express*, Vol. 7, 2020, doi.org/10.1088/2053-1591/ab66f4, pp 1-14
6. Nishant Ranjan, Rupinder Singh, IPS Ahuja, "Development of PLA-HAp-CS based biocompatible functional prototype: A case study", *Journal of Thermoplastic Composite Materials*, Vol. 33, No. 3, 2020, DOI: 10.1177/0892705718805531, (Sage Publications), 305-323
7. Sunpreet Singh, Rupinder Singh, "Mechanical characterization and comparison of additive manufactured ABS, Polyflex™ and ABS/ Polyflex™ blended functional prototypes", *Rapid prototyping Journal*, Vol. 26, No. 2, 2020, DOI: 10.1108/RPJ-11-2017-0234, (Emerald Publications) pp: 225-237
8. Piyush Bedi, Rupinder Singh, IPS Ahuja, "Multifactor optimization of FDM process parameters for development of rapid tooling by using SiC/Al<sub>2</sub>O<sub>3</sub> reinforced LDPE filament", *Journal of Thermoplastic Composite Materials*, Vol. 33(5), 2020, DOI: 10.1177/0892705718808572, (Sage Publications), pp: 581-598
9. Sudhir Kumar, Rupinder Singh, T.P.Singh, Ajay Batish, "Flexural, pullout and fractured surface characterization for multi material 3D printed functionally graded prototype", *Journal of composite materials*, Vol. 54(16), 2020, DOI: 10.1177/0021998319892067, (Sage publications), pp: 2087-2099
10. Ranvijay Kumar, Rupinder Singh, IPS Ahuja, Antoio Fortunato, "Thermo-mechanical investigations for friction stir spot welding of dissimilar thermoplastic", *Composite Structures*, 253, 2020, PP: 1-17
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12. Gurpartap Singh, Rupinder Singh, Sarbjit Singh, "Investigations for partial denture casting by fused deposition modelling assisted chemical vapour smoothing", *Assembly Automation*, Vol. 40, No. 5, 2020, DOI: 10.1108/AA-03-2020-0048, (Emerald publications), PP:745 – 754
13. Rupinder Singh, R Kumar, S.Tiwari, S. Vishwakarma, S. Kakkar, V. Rajora, S. Bhattoa, "On secondary recycling of ZrO<sub>2</sub> reinforced HDPE filament prepared from domestic waste for possible 3D printing of bearings", *Journal of Thermoplastic Composite Materials*, 2019, DOI: 10.1177/0892705719864628, (Sage Publications), PP:1-19
14. R.Sharma, Rupinder Singh, Ajay Batish, "Study on barium titanate and graphene reinforced PVDF matrix for 4-D applications", *Journal of Thermoplastic Composite Materials*, 2019, (Sage Publications), DOI: 10.1177/0892705719865004, PP: 1-20

15. Sudhir Kumar, Rupinder Singh, T.P.Singh, Ajay Batish, " On investigations of thermal conductivity, circumferential compressive strength and surface characterization of 3D printed hybrid blended magnetostrictive PLA composite", Journal of Thermoplastic Composite Materials, 2020, DOI: 10.1177/0892705720907651, (Sage Publications), 1-20
16. R. Sharma, Rupinder Singh, Ajay Batish "On mechanical and surface properties of electro-active polymer matrix based 3D printed functionally graded prototypes", Journal of Thermoplastic Composite Materials, 2020, DOI: 10.1177/0892705720907677, (Sage Publications)
17. Sudhir Kumar, Rupinder Singh, T.P.Singh, Ajay Batish, " On mechanical characterization of 3D printed PLA-PVC-wood dust-Fe<sub>3</sub>O<sub>4</sub> composite", Journal of Thermoplastic Composite Materials, 2019, DOI: 10.1177/0892705719879195, (Sage Publications), pp: 1-18
18. Sudhir Kumar, Rupinder Singh, Ajay Batish, T.P.Singh, " Additive manufacturing of smart materials exhibiting 4D properties: A state of art review", Journal of Thermoplastic Composite Materials, 2019, doi.org/10.1177/0892705719895052, (Sage Publications),pp: 1-24
19. Rupinder Singh, Gurchetan Singh, Jaskaran Singh, Ranvijay Kumar, "Investigations for tensile, compressive and morphological properties of 3D printed functional prototypes of PLA-PEKK-HAP-CS", Journal of Thermoplastic Composite Materials, 2019, DOI: 10.1177/0892705719870595, (Sage Publications), pp:1-20
20. Ravinder Sharma, Rupinder Singh, Ajay Batish, "On effect of chemical assisted mechanical blending of barium titanate and graphene in PVDF for 3D printing applications", Journal of Thermoplastic Composite Materials, 2020, DOI: 10.1177/0892705720945377, (Sage Publications),pp: 1-20
21. Rupinder Singh, R. Kumar, Pawanpreet, M. Singh, JP Singh, " On mechanical, thermal and morphological investigations of almond skin powder reinforced polylactic acid feedstock filament", Journal of Thermoplastic Composite Materials, 2019, DOI: 10.1177/0892705719886010, (Sage Publications),pp:1-19

**ME Thesis Guided: 3**

**PhD Awarded: 3**

**R & D Projects (On going): 3**

## 2. Prof. Pankaj Sharma, Professor, Applied Science Department

### Papers Published in Journals(2019-2020)

1. Subhash Chand, A. Dahshan, Nagesh Thakur, Vineet Sharma, Pankaj Sharma, "Alloyed Ag<sub>2</sub>SexS<sub>1-x</sub> quantum dots with red to NIR shift: the band gap tuning with dopant content for energy harvesting applications" Infrared Physics and Technology Vol 105 (March 2020) 103162 (SCI, Scopus Indexed).
2. Arun Kumar, Vipenpal Singh, Pankaj Sharma, Navdeep Goyal, "Optical properties of (Se<sub>80</sub>Te<sub>20</sub>)<sub>100-x</sub>Znx (2≤x≤ 6) amorphous thin films" Journal of Non-Crystalline Solids Vol 531 (1 March, 2020) 119848 (SCI, Scopus Indexed).
3. Hanaa Zaka, B. Parditka, Z. Erdélyi, H. E. Atyia, Pankaj Sharma, S. S. Fouad, "Investigation of dispersion parameters, dielectric properties and opto–electrical parameters Of ZnO thin film grown by ALD" Optik International Journal for Light and Electron Optics Vol 203 (February 2020) 163933 (SCI, Scopus Indexed).
4. Rajeev Arora, A. Dahshan, Pankaj Sharma, "A study of ac conductivity of nano TiO<sub>2</sub>–polyaniline based film" Materials Today: Proceedings Volume 26, Part 2, (2020), Pages 341-343 (Scopus Indexed).
5. I. Sharma, S.R. Madara, Pankaj Sharma, "Study of Tauc gap, optical density and penetration depth of vacuum evaporated Pb<sub>15</sub>Se<sub>85-x</sub>Gex (x = 0, 3, 6 at. %) thin films supported by chemical

bond approach and physical parameters” Materials Today: Proceedings Volume 28, Part 2, (2020) 402-407 (Scopus Indexed).

PhD Awarded : 1

PhD Thesis (In progress): 1

### 3. Prof. Piush Verma, Professor, Applied Science Department

PhD Awarded : 1

### 4. Dr. Meenakshi Sood, Associate Professor, CDC Department

#### PAPERS PUBLISHED IN JOURNALS (2019-2020)

1. Navdeep Prashar, Meenakshi Sood and Shruti Jain, “Dual-tree complex wavelet transform technique-based optimal threshold tuning system to deliver denoised ECG signal” Transactions of the Institute of Measurement and Control First Published January 22, 2020 Volume: 42 issue: 4, page(s): 854-869, SCI
2. U. Sharma, M. Sood, and E. Puthooran, “Volumetric medical image compression using inter-slice correlation switched prediction approach”, International Journal of Imaging Systems and Technology, 2020, SCI
3. Charu Bhardwaj, Shruti Jain, Meenakshi Sood, “Diabetic Retinopathy Lesion Discriminative Diagnostic System for Retinal Fundus Images”, Advanced Biomedical Engineering, vol. 9, pp. 71-82, march 2020, ESCI
4. Jyotsna Dogra, Shruti Jain, Meenakshi Sood Novel Seed Selection Techniques For MR Brain Image Segmentation Using Graph Cut” Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization, Dec 2019 pp. 389-399 , (ESCI/Scopus)
5. Sharma, U., Sood, M., & Puthooran, E., A Block Adaptive Near-Lossless Compression Algorithm for Medical Image Sequences and Diagnostic Quality Assessment. Journal of Digital Imaging, vol 33, pp. 546-530, April 2020, SCI
6. Dogra, J., Jain, S. and Sood, M., “Novel Graph Cut Based GBKS Technique for Tumor Detection and Extraction from Medical Images”, IET Image Processing, vol. 14, no. 1, pp. 84-93, 2019, SCI
7. Charu Bhardwaj, Shruti Jain, Meenakshi Sood, Two-Tier Grading System for NPDR Severities of Diabetic Retinopathy in Retinal Fundus Images” Recent Patents on Engineering January 2020, Vol 14. No 1, 2020, (Scopus Indexed)
8. Sharma, U., Sood, M., & Puthooran, E. (2020). Predictor Based Block Adaptive Near-Lossless Coding Technique for Magnetic Resonance Image Sequence. January 2020, Procedia Computer Science 167:696-705 (Scopus Indexed)

#### Papers Published in International Conferences

1. Meenakshi Sood, Pramod Kumar, Shruti Jain, “Design of Waste Heat Recovery System for Green Environment”, 2nd International Conference on Recent Innovations in Computing (ICRIC-2020), March 20-21, 2020, Central University of Jammu, J & K.  
i. (Scopus Indexed)
2. Anjna Meenakshi Sood Pradeep Kumar Singh Anomaly Detection and Qualitative Analysis of Diseases in Tomato Plant Using Texture Features, 2nd International Conference on Recent Innovations in Computing (ICRIC-2020), March 20-21, 2020, Central University of Jammu, J & K.

Book Published:

**Shruti Jain, Meenakshi Sood, Sudip Paul , “Advances in Computational Intelligence Techniques” Algorithms for Intelligent Systems, Springer ISBN : 978-981-15-2619-0**

**Research Project Completed: 1**

**PROJECT SUBMITTED : A workshop under the scheme of GOI Accelerate Vigyan ( Karyashala) SERB in January 2021 for the grant of Rs 4,00,000( 4 lakh)**

**PhD Awarded: 1**

**PhD Submitted: 3**

## **5. Dr. Balwinder Raj, Associate Professor, Electronics and Communication Engineering Department**

### **Papers published in Conference (2019-20)**

1. Girish Wadhwa and Balwinder Raj, “Design and Investigation of TFET Biosensor for High Sensitivity”, National Conference on Biomedical Engineering, Dept. of ECE, NITTTR Chandigarh, 22-24 Jan 2020.

### **Book Chapter Published**

Amandeep Singh, Mamta Khosla, Balwinder Raj, “CNTFETS: Introduction and Types, in Book: Major Applications of Carbon Nanotube Field-Effect Transistors (CNTFET), IGI Global, USA, Chapter No. 1, PP.1-14, Dec 2019

**Research Projects Submitted :3**

**PhD Thesis (In Progress): 4**

**ME Thesis (In Progress) : 4**

## **6. Dr. Ashok Kumar, Associate Professor, Applied Science Department**

### **Papers published in 2019-20**

1. Jashandeep Singh and Ashok Kumar, Facile wet chemical synthesis and electrochemical behavior of La<sub>2</sub>FeCoO<sub>6</sub> nano-crystallites, Materials Science in Semiconductor Processing (SCI I.F. 2.722), 99, 8-13 (2019)
2. Sonia Siwatch, Virender Singh Kundu, Ashok Kumar, Suresh Kumar, Nikhil Chauhan and Monika Kumari, Morphology correlated efficiency of ZnO photoanode in dye sensitized solar cell, Materials Research Express (SCI I.F. 1.449), 6, 1050d3 (2019)
3. Jashandeep Singh, Uttam Kumar Goutam and Ashok Kumar, Hydrothermal synthesis and electrochemical performance of nanostructured cobalt free La<sub>2</sub>CuMnO<sub>6</sub>, Solid State Sciences (SCI I.F. 2.155) 95, 105927 (2019)
4. Sonia Siwatch, Virender Singh Kundu, Ashok Kumar, Suresh Kumar, Nikhil Chauhan and Monika Kumari, Effect of novel ZnO/Zn<sub>2</sub>SnO<sub>4</sub> photoanode on the performance of dye sensitized solar cell, Optik (SCI I.F. 1.914), 194, 163117 (2019)
5. Amit Kumar and Ashok Kumar, Electrochemical behavior of oxygen-deficient double perovskite, Ba<sub>2</sub>FeCoO<sub>6-δ</sub>, synthesized by facile wet chemical process, Ceram. Int. (SCI I.F. 3.450), 45, 14105-14110, (2019)
6. Sonia Siwatch, Virender Singh Kundu, Ashok Kumar, Suresh Kumar and Monika Kumari, Facile synthesis of novel ZnO/Cd<sub>0.5</sub>Zn<sub>0.5</sub>S photoanode for dye-sensitized solar cell, Mater. Res. Express (SCI I.F. 1.449)6, 085029 (2019)
7. Astakala Anil Kumar, Ashok Kumar and Jitender Kumar Quamara, Lanthanum containing barium stannate nanoparticles synthesized by cetyltrimmonium bromide assisted wet chemistry route for application in perovskite solar cell, Mater. Today Proc. 17(4) 1487-1493 (2019)

**Research Projects Submitted : 5**

**PhD (In Progress): 3    Submitted : 1,    Awarded 1**

**ME Thesis (In Progress) : 18**

**Foreign research interns supervised : 4**

### **7. Dr. Hemant Kumar Vinayak, Associate Professor, EDIC Department**

**PhD (In Progress) : 1**

### **8. Dr. Balwinder Singh, Associate Professor, ECE Department**

#### **Publication published in 2019-20**

1. Mansi Girdhar, and Balwinder S. Dhaliwal, "Hybrid Fractal Boundary MIMO Antenna for Multiband Applications," Journal of Innovation in Electronics and Communication Engineering, Vol. 9, No. 2, 2019, pp. 29 – 32. Print ISSN: 2249-9946. Online ISSN: 2455-3514.
2. V. Jain, and Balwinder S. Dhaliwal (2020) Design of Wearable Antennas for Body Area Networks. In: Pant M., Sharma T., Verma O., Singla R., Sikander A. (eds) Soft Computing: Theories and Applications. Advances in Intelligent Systems and Computing, vol 1053. Springer, Singapore, 11 February 2020, [https://doi.org/10.1007/978-981-15-0751-9\\_84](https://doi.org/10.1007/978-981-15-0751-9_84)(Scopus)

**PhD Thesis (In progress) : 3**

## **Audited Accounts**

The accounts of the Institute for the year 2019-20 submitted for audit to be duly certified by Accountant General's office are enclosed.

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH**  
**SECTOR 26, CHANDIGARH**  
**BALANCE SHEET AS AT 31st March, 2020**

(Rs. In Lakhs)

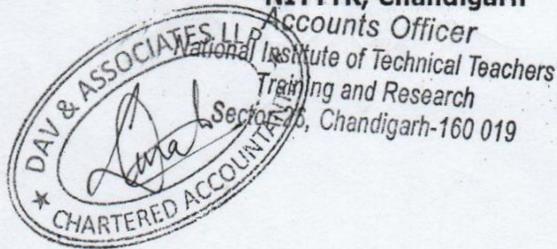
SOURCES OF FUNDS	Sch	Current Year 2019-2020	Previous Year 2018-2019
<b>CAPITAL/CORPUS FUND (UNRESTRICTED FUNDS)</b>			
Corpus Fund	1	8354.94	8042.00
General Fund		-2708.02	-2574.77
<b>DESIGNATED EARMARKED / ENDOWMENT FUNDS</b>	2	2363.08	2256.54
<b>CURRENT LIABILITIES &amp; PROVISIONS</b>	3	4372.37	3335.25
<b>TOTAL</b>		<b>12382.37</b>	<b>11059.02</b>
APPLICATION OF FUNDS	Sch	Current Year 2019-2020	Previous Year 2018-2019
<b>FIXED ASSETS</b>			
Tangible Assets	4 & 4A	5345.01	5409.29
Intangible Assets			
Capital Work in progress			
<b>INVESTMENTS FROM EARMARKED/ ENDOWMENT FUNDS</b>	5		
Long term		2183.34	2136.36
Short term		83.31	68.39
<b>INVESTMENTS-OTHERS</b>	6		
<b>CURRENT ASSETS</b>	7	4255.13	2956.18
<b>LOANS, ADVANCES &amp; DEPOSITS</b>	8	515.59	488.80
<b>TOTAL</b>		<b>12382.37</b>	<b>11059.02</b>

**SIGNIFICANT ACCOUNTING POLICIES** 23  
**CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS** 24

Dated \_\_\_\_\_  
Place \_\_\_\_\_

*Rsm*  
**Accounts Officer**  
**NITTR, Chandigarh**

*[Signature]*  
**Director**  
**NITTR, Chandigarh**



निदेशक/Director  
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सैक्टर/Sector 26, चण्डीगढ़/Chandigarh

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH  
INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31ST MARCH, 2020**

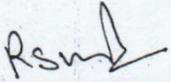
(Rs. In Lakhs)

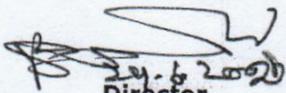
Particulars	Sch	Current Year 2019-2020	Previous Year 2018-2019
<b>INCOME</b>			
Academic Receipts	9	107.71	138.59
Grants / Subsidies	10	3214.93	2983.34
Income from Investments	11		
Interest Earned	12	201.55	222.47
Other Incomes	13	215.09	238.60
Prior Period Income	14		
<b>TOTAL (A)</b>		<b>3739.28</b>	<b>3583.00</b>
<b>EXPENDITURE</b>			
Staff Payments & Benefits(Establishment Expenses)	15	3211.16	2970.71
Academic Expenses	16	179.95	177.45
Administrative & General Expenses	17	106.51	129.76
Transportation Expenses	18	4.25	4.64
Repairs & maintenance	19	53.84	66.23
Finance Costs	20		0.00
Depreciation	4	316.81	296.67
Other Expenses	21		-
Prior Period Expenses	22		-
<b>TOTAL (B)</b>		<b>3872.52</b>	<b>3645.46</b>
<b>Balance being excess of income over expenditure (A-B)</b>		<b>(133.24)</b>	<b>(62.47)</b>
<b>Transfer To / From Designated Fund</b>			
Building Fund			
Others (specify)			
<b>Balance Being Surplus / (Deficit )Carried to Capital Fund</b>			

**SIGNIFICANT ACCOUNTING POLICIES** 23

**CONTINGENT LIABILITIES AND NOTES TO ACCOUNTS** 24

Dated  
Place :- Chandigarh

  
**Accounts Officer**  
 National Institute of Technical Teachers'  
 Training and Research  
 Sector-26, Chandigarh-160 019

  
**Director**  
 NITTTR, Chandigarh

निदेशक/Director  
 राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
 National Institute of Technical Teachers Training & Research  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

**FUNDS DETAIL AS AT 31ST MARCH, 2020**

**SCHEDULE 1 - CORPUS FUND/CAPITAL FUND**

**(Rs. In Lakhs)**

		<b>Current Year 2019-2020</b>	<b>Previous Year 2018-2019</b>
	<b>Particulars</b>		
1	Balance at the beginning of the year	8042.00	7302.19
2	Add : Contributions towards Corpus	312.93	739.81
3	Add : Fixed Assets under Sponsored Projects/Grants From UGC GOI/State Govt. to the extent utilization for Capital Exp.		
4	Add: Assets Purchased out of Earmarked Funds		
5	Add: Assets Purchased out of Sponsored Projects, Where Ownership vests in the Institution		
6	Add:- Assets Donated /Gifts Received		
7	Add : Prior Fixed Assets under Sponsored Projects		
8	Add: Prior period adjustments		
9	Add: Other Addition		
10	Less : Assets W/off		
11	Less: Contribution to Alympics		
	<b>Balance the the year end</b>	<b>8354.94</b>	<b>8042.00</b>
	<b>GENERAL FUND</b>		
1	Balance at the beginning of the year	-2574.77	-1625.06
2	Add : Contributions towards General Fund		-887.24
3	Deduct : Balance of Net Expenditure account	-133.24	-62.47
	<b>Balance the the year end</b>	<b>-2708.01</b>	<b>-2574.77</b>

*Rswb*

**Accounts Officer  
NITTTR, Chandigarh**

Accounts Officer  
National Institute of Technical Teachers  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*

**Director  
NITTTR, Chandigarh**

निदेशक/Director  
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

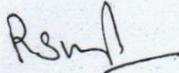
**SCHEDULE 2 DESIGNATED / EARMARKED / ENDOWMENT FUNDS**

(Rs. In Lakhs)

S.No.	Particulars	Fund wise Breakup				Current Year 2019-2020	Previous Year 2018- 2019
		New Pension Scheme Fund - AAA	GPF / CPF Fund - BBB	Endowment			
				CCC	Funds		
a)	A. Opening Balance of the Funds	2.08	2254.46	0.00	0.00	2256.54	2094.17
b)	Additions to the Funds :- Donations/grants/ Subscription Income from Investments made on account of Funds Accrued Interest on Investments of the Funds Other Additions (Specify nature)	112.57 0.00 0.00	315.63 167.88 -2.31	0.00 0.00 0.00	0.00 0.00 0.00	428.21 167.88 (2.31)	405.51 143.12 4.19
	<b>Total (A)</b>	<b>114.66</b>	<b>2735.66</b>	<b>0.00</b>	<b>0.00</b>	<b>2850.32</b>	<b>2646.99</b>
c)	B. Utilization/Expenditure Towards Objectives of Funds i) Capital Expenditure ii) Revenue Expenditure	111.12	376.11	0.00	0.00	487.23	390.45
	<b>Total (B)</b>	<b>111.12</b>	<b>376.11</b>	<b>0.00</b>	<b>0.00</b>	<b>487.23</b>	<b>390.45</b>
	<b>Closing Balance at the Year End (A-B)</b>	<b>3.53</b>	<b>2359.55</b>	<b>0.00</b>	<b>0.00</b>	<b>2363.08</b>	<b>2256.54</b>

**Represented By**

a)	Cash and Bank Balance	3.39	83.31			86.70	70.33
b)	Investment		2183.34			2183.34	2136.37
c)	Interest Accrued but not due		91.35			91.35	48.24
d)	Amount Receivable	0.14	1.55			1.70	1.60
	<b>Total</b>	<b>3.53</b>	<b>2359.55</b>			<b>2363.09</b>	<b>2256.54</b>

  
**Accounts Officer**  
**NITTR, Chandigarh**  
 National Institute of Technical Teachers'  
 Training and Research  
 Sector 26, Chandigarh-160 019

  
**Director**  
**NITTR, Chandigarh**

निदेशक/Director  
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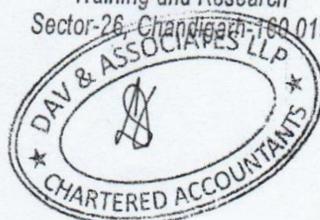
**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH  
SCHEDULE 3 - CURRENT LIABILITIES & PROVISIONS**

(Rs. In Lakhs)

S.No.	Particulars		Current Year 2019-2020	Previous Year 2018-2019
<b>A.</b>	<b>CURRENT LIABILITIES</b>			
1	Deposits from Staff :- - Staff Welfare fund - Ground Rent from Employees		8.18	11.21 0.00
2	Deposits from Students :- - Alumni Association - Examination Fee		8.18 0.02	6.92 0.02
3	<b>Sundry Creditors</b>			
a	For goods & services		7.04	7.04
b	For Fixed Assets		0.34	0.34
c	Others Annexure - 1		132.02	148.02
4	Deposit-Others (including EMD, Security Deposit)		0.12	0.12
5	<b>Statutory Liabilities (GPF, TDS, WC TAX, CPF, GIS, NPS)</b>			
a	Overdue			0.00
b	Others Annexure - 2		11.43	25.25
6	<b>Others current liabilities</b>			
a	Salaries			
b	Receipts against sponsored projects Sch - 3(a)		328.29	215.80
c	Receipts against sponsored fellowship & scholarships			
d	Unutilised Grants (including OH 31, OH 36, and OH 35)		1116.20	414.41
	Unutilised GRANTS OH 36	763.62		9.30
	Unutilised GRANTS OH 31	-44.57		85.43
e	Unutilised GRANTS OH 35	171.24		58.79
	Add:- Advance to CPWD, BSNL and Roads	225.91		260.88
f	Grants in advance			
g	Others funds Annexure - 3		439.87	284.04
h	Others liabilities Annexure - 4			
	<b>TOTAL (A)</b>		<b>2051.68</b>	<b>1113.17</b>
<b>B</b>	<b>PROVISIONS</b>			
1	For taxation			
2	Gratuity		1137.84	1153.72
3	Superannuation/pension		50.83	44.00
4	Accumulated leave encashment		946.83	872.28
5	Trade Warranties/claims			
6	Others (specify)			
	- GOI- Restricted Fund - Salary		0.11	0.11
	Expenses payable Annexure - 5		185.08	151.97
	<b>TOTAL (B)</b>		<b>2320.68</b>	<b>2222.08</b>
	<b>TOTAL (A+B)</b>		<b>4372.37</b>	<b>3335.25</b>

*Rsm*

**Accounts Officer**  
National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*  
**Director**

**NITTR, Chandigarh**  
निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सैक्टर/Sector 26, चण्डीगढ़/Chandigarh

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH  
SCHEDULE - 3 (a) SPONSORED PROJECTS**

(Rs. In Lakhs)

S.No.	Name of Project	Opening Balance		Receipts/ Recoveries during the year	Expenditure during the year	Closing Balance	
		Credit	Debit			Credit	Debit
1	AICTE QIP POLY	14.70		0.05	13.04	1.71	
2	GOI Fund	24.17		0.02		24.19	
3	Inspire Fellowship by SC and Tech	2.17		9.33	11.50	-	-
4	It Bionery Rd Project	1.27				1.27	-
5	MO 18 (MOOCS)	12.25		1.75	14.00	-	-
6	MOOCS4			14.70	0.77	13.93	-
7	Operational Plan	19.66				19.66	-
8	OTHER MISC PROJECT	4.57				4.57	-
9	PDA-08	36.70		75.00		111.70	-
10	PDA-13 CSE	0.07				0.07	-
11	PDA-21(Solar PV System)			7.15		7.15	-
12	PDA-22				0.14		0.14
13	PDA-2(Electrical)AICTE	2.20				2.20	-
14	PDA-3(Computer)	2.72			2.72	-	-
15	Ph.D Scholar Chandni Devi (ECE)			0.30	0.30	-	-
16	PSCB 13 MECH	4.61				4.61	-
17	RPS by AICTE	1.67				1.67	-
18	SP-01 (SS Pattnaik -Coordinator)	32.01		1.41	33.42	-	-
19	SP-04	0.00		2.80	2.80	0.00	-
20	SP-05	4.96				4.96	-
21	SP-06(ETV)	11.97		20.80	24.37	8.40	-
22	SP-09		3.63				3.63
23	SP-10		0.06		0.16		0.22
24	SP-11	1.61		0.16	2.44		0.67
25	SP-11(EDIC)				0.16		0.16
26	SP-12		0.24				0.24
27	SP-13	0.38				0.38	-
28	SP-14 MECHANICAL	0.48			0.19	0.29	-
29	SP-15	1.94				1.94	-
30	SP-16 (5.17 COMP SC , PWD)	28.50			20.92	7.58	-
31	SP-17 Civil		4.49	1.75	3.01		5.74
32	SP-18(CDC)		0.77	2.40		1.63	-
33	SP-19Unat Bharat Abhyian	1.11		12.50	7.42	6.19	-
34	SP-20(Computer)			14.60	0.83	13.77	-
35	SP-21(Computer)			3.10	2.78	0.32	-
36	SP-22 (Elect)			2.08	2.08	-	-
37	SP-23(ETV)			78.00	46.25	31.75	-
38	SP-24			1.62	1.62	-	-
39	SP-25(Computer)			27.03	0.26	26.77	-
40	SP-26(Atal)			1.62	1.42	0.20	-
41	SP-27			10.00	6.27	3.73	-
42	SP-28(Computer)			6.38	2.48	3.89	-
43	SP-29			1.62	0.96	0.66	-
44	SP-2(Civil)	3.96			3.96	-	-
45	SP-30			1.62	1.03	0.59	-
46	SP-31			10.02	1.53	8.49	-
47	SP-32			1.62	1.44	0.18	-
48	SP-33			1.21	0.85	0.36	-
49	SP-34			2.50	0.39	2.11	-
50	SP-35			10.63	1.39	9.23	-
51	SP-7(EDIC)	2.00				2.00	-
52	SP-8 (EDIC)	0.11				0.11	-
53	SP-ICT-50(EDIC) DST		0.80			-	0.80
54	TDS SP 18				0.24		0.24
	<b>Total</b>	<b>215.81</b>	<b>9.99</b>	<b>323.75</b>	<b>213.12</b>	<b>328.29</b>	<b>11.85</b>

Accounts Officer  
NITTR, Chandigarh

National Institute of Technical Teachers'  
Training and Research

Sector 26, Chandigarh 160 019



Director  
NITTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**SCHEDULE - 3 (b) SPONSORED FELLOWSHIP AND SCHOLARSHIPS**

(Rs. In Rupees)

S.No.	Name of Project	Opening Balance		Receipts/ Recoveries during the year	Expenditure during the year	Closing Balance	
		Credit	Debit			Credit	Debit
1	University Grants Commission						
2	Ministry .....						
3	Others (Specify Individually)						

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NITTTR, Chandigarh

Accounts Officer  
National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*  
24.6.2020  
Director

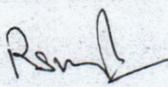
NITTTR, Chandigarh

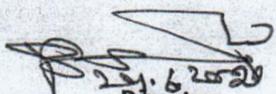
निदेशक/Director  
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH**  
**SECTOR 26, CHANDIGARH**  
**SCHEDULE 3C UNUTILISED GRANTS FROM UGC, GOVERNMENT OF INDIA AND STATE GOVERNMENT**

(Rs. In Lakhs)

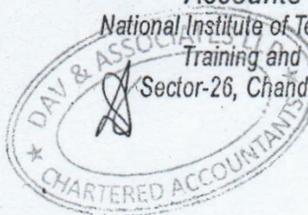
S.No	Particulars	Current Year 2019-2020	Previous Year 2018-2019
A	Plan Grants Government of India <b>Balance B/F GRANT OH 36</b> Add :- Grant Received During the Year Add :- Receipt during the year	9.30 2800.00	324.84 1690.00
	<b>Total (a)</b>	<b>2809.30</b>	<b>2014.84</b>
	Less :- Refunds Less :- Utilised for Revenue Expenditure Less:-Exp. (Salary Staff) under OH 36 for March 2020 Paid in April 2020 Add:- Provision of 2018-19 adjusted in April 2019	2117.75 382.97 315.59	2021.02 1445.99 1430.506
	<b>Total (b)</b>	<b>2050.37</b>	<b>2005.54</b>
	<b>Unutilised Carried Forwards (a-b)</b>	<b>758.93</b>	<b>9.30</b>
B	Plan Grants Government of India <b>Balance B/F GRANT OH 31</b> Add :-Grant Receipt During the Year Add:- Other Receipt During the year	85.43 1030.00 9.25	407.84 643.50 11.89
	<b>Total (c)</b>	<b>1124.68</b>	<b>1063.23</b>
	Less :- Refunds Less :- Utilised for Revenue Expenditure (Total) Less :- Utilised for Capital Expenditure Less:- Expenditure under OH 31 for March 2020 Paid in April 2020 Add:- Provision of 2018-19 adjusted in April 2019	1196.18 70.94 44.00	987.52 - 640.20 630.48
	<b>Total (d)</b>	<b>1169.25</b>	<b>977.80</b>
	<b>Unutilised Carried Forwards (c-d)</b>	<b>-44.57</b>	<b>85.43</b>
C	<b>GRANT FROM GOVT OF INDIA OH 35</b> Balance B/F Add :- Receipt During the Year of Advance Add :- Receipt During the Year	58.79 34.97 330.00	351.95 48.88 1000.00
	<b>Total (e)</b>	<b>423.76</b>	<b>1400.83</b>
	Less :- Refunds Less :- Utilised for Revenue Expenditure Less :- Utilised for Capital Expenditure	252.53	1342.04
	<b>Total (f)</b>	<b>252.53</b>	<b>1342.04</b>
	<b>Unutilised Carried Forwards (e-f)</b>	<b>171.24</b>	<b>58.79</b>
	<b>UNUTILISED GRANT OF (OH 36+OH 31+OH 35)</b>	<b>885.60</b>	<b>153.53</b>

  
**Accounts Officer**  
**NITTTR, Chandigarh**

  
**Director**  
**NITTTR, Chandigarh**

**Accounts Officer**  
**National Institute of Technical Teachers Training and Research**  
**Sector-26, Chandigarh-160 019**

**निदेशक/Director**  
**राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान**  
**National Institute of Technical Teachers Training & Research**  
**सेक्टर/ Sector 26, चण्डीगढ़/Chandigarh**



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH  
FIXED ASSETS AS AT 31.3.2020**

S.No.	PARTICULARS	Rate %	GROSS BLOCK				DEPRECIATION				(Rs. In Lakhs) NET BLOCK			
			Cost/evaluation as at beginning of the year	Additions before 30.9.2019	Additions after 30.9.2019	Deductions during the year	cost/value at the year end	As at the beginning of the year	On Additions of the year	On Deduction of the year	Depreciation add back prior period	Total at the year end	As at the current year end	As at the previous year end
A	<b>Fixed Assets</b>													
i	Land - Free hold	0	15.68							15.68	0.00			15.68
ii	Land - Lease hold	0	18.90							18.90	0.52			15.84
iii	Buildings- Residential	2	1256.75	0.00	53.75					1310.50	17.49			883.98
iv	Buildings- Office Block	2	1539.47	85.75	55.46					1680.69	22.17			1114.24
v	Buildings- Hostel	2	1209.72							1209.72	13.90			528.52
vi	Equipments	7.5	5279.87	6.14	16.80					5302.81	188.55			681.21
vii	Computer	20	598.36	0.00						598.36	4.66			2343.63
viii	Books	10	126.97		0.00					126.97	0.82			31.00
ix	Electrical Installation	5	378.07							378.07	8.26			174.57
x	Furniture Fixture	7.5	2.44							2.44	0.06			0.71
xi	Vehicle	10	38.72	0.00						38.72	1.21			10.90
xii	Intangible Assets		197.88	19.35	0.87					218.10	50.86			76.73
xiii	Library E- Journal		14.91	6.26	8.15					29.31	8.30			151.50
	<b>Total - A</b>		<b>10677.74</b>	<b>117.49</b>	<b>135.03</b>	<b>0.00</b>	<b>10930.26</b>	<b>5268.45</b>	<b>316.81</b>	<b>0.00</b>	<b>5585.25</b>	<b>5345.01</b>	<b>3984.70</b>	

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Accounts Officer  
NITTR, Chandigarh

*[Signature]*  
NITTR, Chandigarh



Accounts Officer  
National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019

निदेशक/Director  
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH**  
**SECTOR 26, CHANDIGARH**  
**SCHEDULE - 4 FIXED ASSETS / NET BLOCK AS AT 31.03.2020**

S.No.	PARTICULARS	Rate %	GROSS BLOCK			DEPRECIATION			NET BLOCK				
			Cost/evaluation as at beginning of the year	Additions before 30.09.2019	Additions after 30.09.2019	Deductions during the year	Cost/value at the year end	As at the beginning of the year	On Addition of the year	On Deduction of the year	Depreciated Total at the year end	As at the current year end	As at the previous year end
<b>A</b>	<b>Fixed Assets</b>												
1	Institute Account												
i	Land - Free hold	0	15.68					15.68	0.00	0.00	0.00	15.68	15.68
ii	Land - Lease hold	0	18.90					18.90	0.52	0.00	0.00	19.42	16.35
iii	Buildings- Residential	2	1256.75		53.75			1310.50	17.49	0.00	0.00	1487.99	847.71
iv	Buildings- Office Block	2	1539.47	85.75	55.46			1680.69	22.17	0.00	0.00	1782.86	995.20
v	Buildings- Hostel	2	1209.72					1209.72	13.90	0.00	0.00	1223.62	695.11
vi	Equipments	7.5	5054.08	6.14	16.80			5077.02	186.05	0.00	0.00	5263.07	2466.10
vii	Computer	20	588.66					588.66	3.88	0.00	0.00	592.54	19.41
viii	Books	10	125.49					125.49	0.82	0.00	0.00	126.31	8.17
ix	Technical Journals	100	0.00					0.00	0.00	0.00	0.00	0.00	0.00
x	Electrical Installation	5	378.07					378.07	8.26	0.00	0.00	386.33	165.13
xi	Vehicle	10	31.96					31.96	0.96	0.00	0.00	32.92	9.62
xii	Intangible Assets	40	197.88	19.35	0.87			218.10	50.86	0.00	0.00	268.96	107.37
xiii	Library E Journal	40	14.84	6.26	8.15			29.24	8.30	0.00	0.00	37.54	10.43
2	<b>Continuation Education</b>												
i	Equipments	7.5	4.40					4.40	0.01	0.00	0.00	4.41	0.07
3	<b>Sponsored Projects</b>												
i	Equipments	7.5	12.63					12.63	0.14	0.00	0.00	12.77	1.74
ii	Vehicle	10	6.76					6.76	0.25	0.00	0.00	7.01	2.49
4	<b>Assets under OBC-OSC</b>												
i	Equipments	7.5	3.96					3.96	0.07	0.00	0.00	4.03	0.88
ii	Furniture	7.5	1.45					1.45	0.04	0.00	0.00	1.49	0.57
iii	Books	10	1.27					1.27	0.00	0.00	0.00	1.27	0.00
5	<b>RPS AICTE</b>												
i	Equipments	7.5	12.94					12.94	0.47	0.00	0.00	13.41	6.31
6	<b>Assets under 5.16 Comp. Sc.</b>												
i	Equipments	7.5	17.64					17.64	0.64	0.00	0.00	18.28	8.58
ii	Furniture	7.5	0.00					0.00	0.00	0.00	0.00	0.00	0.00



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH  
SCHEDULE - 4 FIXED ASSETS / NET BLOCK AS AT 31.03.2020**

S.No.	PARTICULARS	Rate %	GROSS BLOCK			DEPRECIATION			NET BLOCK					
			Cost/evaluation as at beginning of the year	Additions before 30.09.2019	Additions after 30.09.2019	Deductions during the year	cost/value at the year end	As at the beginning of the year	On Addition of the year	On Deducti of the year	Depreciatio add back prior period	Total at the year end	As at the current year end	As at the previous year end
iii	Computer	20	2.99				2.99	1.25	0.35	0.00	0.00	1.60	1.39	1.74
7	<b>Customised AICTE</b>													
i	Equipments	7.5	1.86				1.86	0.00		0.00	0.00	0.00	1.86	0.00
8	<b>Pb State Co-op bank-13 -Mech</b>													
i	Equipments	7.5	5.85				5.85	0.00		0.00	0.00	0.00	5.85	0.00
ii	Computer	20	3.72				3.72	1.55	0.43	0.00	0.00	1.98	1.74	2.17
9	<b>IFD-14</b>													
i	Equipments	7.5	2.02				2.02	0.00	0.00	0.00	0.00	0.00	2.02	0.00
ii	Computer	20	2.99				2.99	0.30		0.00	0.00	0.30	2.69	2.69
	<b>Total - A</b>		<b>10511.98</b>	<b>117.49</b>	<b>135.03</b>	<b>0.00</b>	<b>10764.50</b>	<b>5118.57</b>	<b>315.62</b>	<b>0.00</b>	<b>0.00</b>	<b>5434.19</b>	<b>5330.31</b>	<b>5393.40</b>

*Rsm*

Accounts Officer

NITTTR, Chandigarh

Accounts Officer

National Institute of Technical Teachers' Training and Research

Sector-26, Chandigarh-160 019



*[Signature]*

Director,

NITTTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH  
FIXED ASSETS UNDER GOI PROJECTS AS AT 31.3.2020**

**SCHEDULE -4A FIXED ASSETS / NET BLOCK**

PARTICULARS	Rate %	GROSS BLOCK				DEPRECIATION		NET BLOCK			
		Cost/evaluation as at beginning of the year	Additions before 30.09.2019	Additions after 30.09.2019	Deductions during the year	cost/value at the year end	As at the beginning of the year	On Additions of the year	Total at the year end	As at the current year end	As at the previous year end
<b>Fixed Assets</b>											
i Equipments	7.5	164.49	-	-	-	164.49	148.80	1.18	149.98	14.51	15.69
ii Furniture	7.5	0.99	-	-	-	0.99	0.79	0.01	0.81	0.18	0.20
iii Books	10	0.21	-	-	-	0.21	0.21	-	0.21	-	-
Gifted equipment	7.5	0.07	-	-	-	0.07	0.07	-	0.07	-	-
<b>Grand Total</b>		<b>165.76</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>165.76</b>	<b>149.87</b>	<b>1.19</b>	<b>151.06</b>	<b>14.70</b>	<b>15.89</b>

(Rs. In Lakhs)

*R. S. N. D.*

**Accounts Officer  
NITTTTR, Chandigarh  
Accounts Officer  
National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019**



*R. S. N. D.*

**Director  
NITTTTR, Chandigarh**

निदेशक/Director  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

**SCHEDULE 5 - INVESTMENTS FROM EARMARKED / ENDOWMENT FUNDS**

		(Rs. In Lakhs)	
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
	<b><u>LONG TERM</u></b>		
1	In Central Government Securities		-
2	In state Government Securities		-
3	Other approved Securities - UTI GILT Fund	113.61	-
4	Shares		-
5	Debentures and Bonds		-
6	<b>Term Deposits with Banks</b>		-
	- FDR's GPF/CPF- with Scheduled Bank - Restricted Fund	2069.73	2136.36
7	Others (to be specified)		
	<b><u>SHORT TERM</u></b>		
1	Others (to be specified)		
	- GPF/CPF- with Scheduled Bank S/A - Earmarked fund	83.31	68.39
	<b>Total</b>	<b>2266.65</b>	<b>2204.75</b>

**SCHEDULE 6 INVESTMENTS-OTHERS**

S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
1	In Central Government Securities		-
2	In state Government Securities		-
3	Other approved Securities		-
4	Shares		-
5	Debentures and Bonds		-
6	Others (to be specified)		-
	<b>Total</b>		-

*Rsm*

**Accounts Officer**

**NITTR, Chandigarh**

Accounts Officer

National Institute of Technical Teachers'  
Training and Research

Sector-26, Chandigarh-160 019

*[Signature]*

**Director**

**NITTR, Chandigarh**

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
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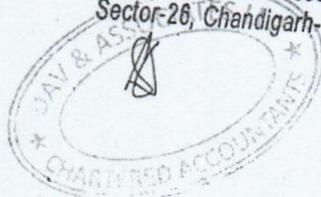


**SCHEDULE 7 - CURRENT ASSETS**

		(Rs. In Lakhs)	
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
1	<b>Stock</b>		
	(a) Stores & Spares	6.96	8.35
	(b) Loose tools		
	(c) Publications	5.16	5.16
	(d) Laboratory Chemicals, consumables and glass ware		
	(e) Building Material		
	(f) Electrical Material		
	(g) Stationary		
	(h) Water supply material		
2	<b>Sundry Debtors</b>		
a	Debts o/s for a period exceeding six months		
b	Others		
	CPF/GPF - Earmarked Fund	1.55	1.46
3	<b>Cash and Bank Balances</b>		
	Cash balances in hand (including cheques/ drafts and earmarked fund or otherwise)	3.71	3.72
	Cash & Bank Balances - GOI - Restricted Fund	0.56	0.54
	Cash & Bank Balances - TEQIP - Restricted Fund		
	Bank balances (to be further classified as pertaining to earmarked fund or otherwise)		
a	<b>With Scheduled Banks</b>		
	* in current accounts		
	* in term deposit accounts	2312.98	2594.48
	* in savings accounts	1924.20	342.46
b	<b>With non- Scheduled bank</b>		
	* in current accounts		
	* in term deposit accounts		
	* in savings accounts		
4	<b>Post Office savings Accounts</b>		
	<b>Total</b>	<b>4255.13</b>	<b>2956.18</b>

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Accounts Officer  
NITTR, Chandigarh  
Accounts Officer  
National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*

Director  
NITTR, Chandigarh

निदेशक/Director  
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**SCHEDULE 8 - LOANS ,ADVANCES & DEPOSITS**

(Rs. In Lakhs)

S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
1	<b>Advances to employees (non-interest bearing)</b>		
a	salary		
b	festival	0.01	0.01
c	Medical advance		
d	Others - Advance Loading Money in Cards (Permanent & Temporary Imprest)	0.60	0.60
e	Interest Receivable		0.02
2	<b>Long term advances to employees (interest bearing)</b>		
a	Vehicle loan	2.82	3.24
b	Home loan	0.19	1.34
c	Others	0.83	0.64
3	<b>Advances &amp; other amounts recoverable in cash or in kind or for value to be received. Annexure - 6</b>		
a	On Capital Account	225.91	260.88
b	to Suppliers		
c	Others	63.30	28.84
4	<b>Prepaid expenses</b>		
a	Insurance	0.10	0.10
b	Other expenses		
5	<b>Deposits</b>		
a	Telephone	0.15	0.15
b	Lease rent		
c	Electricity	0.03	0.03
d	AICTE, if applicable		
e	Others (to be specified)	0.53	0.53
6	<b>Income Accrued</b>		
a	On investments from earmarked/endowment funds GPF/CPF	91.35	48.24
b	On investments - FDR's	117.93	134.19
c	On Loans and Advances		
d	Others (includes income due unrealized) GOI - Restricted Fund		
7	<b>Other - Current aassets receivable from UGC / Sponsored Projetscs</b>		
a	Debit balances in Sponsered projects	11.85	9.99
b	Debit balances in Sponsored Fellowship & scholarship		
c	Grants Receivable		
d	Others receivables from UGC		
8	<b>Claim receivable</b>		
	<b>Total</b>	<b>515.59</b>	<b>488.80</b>

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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

**Schedule 9 - Academic Receipts**

(Rs. In Lakhs)

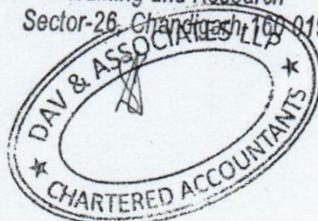
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
	<b>FEE FROM STUDENTS</b>		
	<b>Academic</b>		
1	Tuition Fee		-
2	Admission Fee - ME & Phd (C01 ME)	107.71	138.59
3	Enrolment Fee		-
4	Library Admission fee		-
5	Library Fee		-
6	Art & Craft fee		-
7	Registration fee - under various courses		-
8	Syllabus fee		-
9	STC Course Fee		-
	<b>Total (A)</b>	<b>107.71</b>	<b>138.59</b>
	<b>Examinations</b>		
1	Admission test fee		
2	Annual Examination fee		
3	Mark sheet, certificate fees		
4	Entrance examination fee		
	<b>Total (B)</b>		
	<b>Other fees</b>		
1	Identity card fee		-
2	Fine/ Miscellaneous fee		
3	Medical Fee		
4	Transportation fee		
5	Hostel fee		
	<b>Total (C)</b>		-
	<b>Sale of publications</b>		
1	Sale of Admission forms		
2	sale of syllabus and question paper, etc		-
3	Sale of prospectus including admission forms		-
	<b>Total(D)</b>		-
	<b>Other Academic Receipts</b>		
	1. Registration fee for workshops, programmes		
	2. Registration fees (Academic Staff College)		
	<b>Total(E)</b>		
	<b>Grand Total (A+B+C+D+E)</b>	<b>107.71</b>	<b>138.59</b>

*Rsm*

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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

**SCHEDULE - 10 GRANTS & DONATIONS**

S.No.	Particulars	(Rs. In Lakhs)		
		Current Year 2019-2020		Previous Year 2018-2019
1	Central Government			
	a) Grant in Aid Capital (OH 35)			
	b) Grant in Aid General(OH31)			
	Opening Balance	85.43	407.84	977.80
	Add:- Grant During the Year	1030.00	643.50	
	Add:- Receipt under OH 31	9.25	11.89	
	Less :- Unutilised Grant at the end of Year	-44.57	85.43	
	c) Grant Salary OH-36			
	Opening Balance	9.30	324.84	2005.54
	Add:- Grant During the Year	2800.00	1690.00	
	Less :- Unutilised Grant at the end of Year	763.62	9.30	
	d) Institute Receipt Grants (Salary and Non Salary)			
	Opening Balance			
	Add :			
	Less Unutilised IRG Funds			
2	State Government(s)			
3	Government Agencies			
4	Institutions/Welfare Bodies			
5	International Organisations			
6	Others (Specify)			
	<b>Total</b>		<b>3214.93</b>	<b>2983.34</b>

**SCHEDULE 11- INCOME FROM INVESTMENTS**

S.No.	Particulars	(Rs. In Lakhs)		
		Earmarked / Endowment		Previous Year 2018-2019
		Current Year 2019-2020		
1	1. Interest			
	a. On Government Securities			
	b. Other Bonds/Debentures			
2	2. Interest on Term Deposits			
3	3. Income accrued but not due on Term Deposits /			
4	Interest bearing advances to employees			
5	4. Interest on Savings Bank Accounts			
	5. Others (Specify)			
	<b>Total</b>			
	Transferred To Earmarked / Endowment Funds			
	<b>Balance</b>			
			167.88	143.12
			167.88	143.12
			0.00	0.00

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*[Signature]*  
6.2.2020  
Director

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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

**SCHEDULE 12: INTEREST EARNED**

(Rs. In Lakhs)			
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
1	On Savings Accounts with scheduled banks		
	a) On Saving Account	19.86	25.17
	b) On Grant PFMS		-
2	<b>On Loans</b>		
	a. Employees/ Staff	2.64	0.79
	b. Others		1.63
3	On Fixed Deposits	177.22	194.89
4	On Income Tax Refund	1.83	-
5	On Debtors and Other Receivables		-
	<b>Total</b>	<b>201.55</b>	<b>222.47</b>

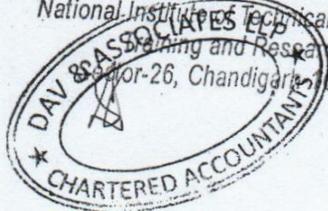
**SCHEDULE 13 - OTHER INCOME**

(Rs. In Lakhs)			
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>A</b>	<b>Income from land &amp; building</b>		
	Hostel room rent/ Ground Rent/ Dining Hall Rent/ Guest		
1	House Rent	63.18	40.87
2	Licence fee - Residential Houses & AICTE		
3	Hire Charges of Auditorium/ Board Room/ Conference	3.94	2.57
	Hall/ Examination Hall Sydicate Room/ IT Hall		
4	Electricity charges recovered		
5	Water charges recovered		
<b>B</b>	<b>Sale of Institute `s publications</b>	0.09	0.13
<b>C</b>	<b>Income from holding events</b>		
1	Gross Receipts from annual function/sports carnival		
	less: Direct expenditure incurred		
	on the annual function/ sports carnival		
2	Gross Receipts from fetes		
	less: Direct expenditure incurred on the fetes		
3	Gross Receipts for educational tours		
	less: direct expenditure incurred on the tours		
4	Others (to be specified and separately disclosed)		
<b>D</b>	<b>Others</b>		
	1. Income from Consultancy (Receipt of Institute		
	Share)	87.69	115.90
	2. RTI fees	0.01	0.01
	3. Income from Royalty		
	4. Sale of application form (recruitment)		
	5. Misc. Receipts (Sale of tender form, waste paper		
	etc.)	61.57	77.20
	Annexure - 7		
	6. Profit on sale/ disposal of Assets		
	a) Owned Assets		
	b) Assets received free of cost		
	and International Organisations		
	8. Others		
	a) C06		
	b) Food Charges		
	9. Net Increase In Store	-1.39	1.92
	<b>GRAND TOTAL (A+B+C+D)</b>	<b>215.09</b>	<b>238.60</b>

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**NATIONAL INSTITUTE OF TECHNICAL TEACHER'S TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

**SCHEDULE 14 - PRIOR PERIOD INCOME**

(Rs. In Lakhs)

S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
1	Academic Receipts		
2	Income from Investments		
3	Interest Earned		
4	Other Income		
	<b>Total</b>		

**SCHEDULE 15 - STAFF PAYMENTS AND BENEFITS (ESTABLISHMENT EXPENSES)**

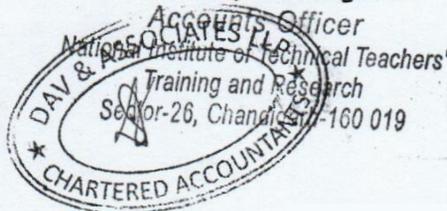
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
a	Salaries & wages Annexure - 8	2758.48	2393.08
b	Allowances and Bonus		
c	Contribution to Provident Fund		
d	Contribution to Other fund - NPS, Gratuity, Leave Enc. Annexure - 9	301.58	375.38
e	Contribution to CPF	5.32	
f	Staff Welfare Expenses		
g	Retirement and Terminal Benefits to Retirees	5.25	26.24
h	LTC facility	10.30	20.47
i	Medical facility	26.82	34.38
j	Children Education Allowance	14.87	17.94
k	Honorarium	1.84	9.68
k	Others (Cont. to Reserve Fund Out of IRG)	64.28	59.64
l	TA/DA expenses Annexure - 10	22.42	33.90
	<b>Total</b>	<b>3211.16</b>	<b>2970.71</b>

**SCHEDULE 16 - ACADEMIC EXPENSES**

S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
a	Laboratory expenses		
b	Field work/ participation in conferences		
c	Expenses on Seminar/Workshop Annexure - 11	9.18	7.36
d	Expenditure on STC Annexure - 12	170.77	170.07
e	<b>Examination (ME students)</b>		
f	Student Welfare Expenses		
g	Admission expenses		
h	Convocation expenses		
i	Publications		
j	Stipend/means- cum-merit scholarship		-
k	Subscription expenses		
l	Others (specify)		0.02
	<b>Total</b>	<b>179.95</b>	<b>177.45</b>

*Rand*

**Accounts Officer  
NITTR, Chandigarh**



*[Signature]*  
24.6.2020  
**Director**

**NITTR, Chandigarh**

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**SCHEDULE 17 - ADMINISTRATIVE AND GENERAL EXPENSES**

		(Rs. In Lakhs)	
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
	<b>A. Infrastructure</b>		
a	Electricity and Water Charges	56.70	54.29
b	Insurance		
c	Property Taxes	5.56	5.47
	<b>B. Communication</b>		
d	Postage & stationary	1.22	1.51
e	Telephone, Fax and internet charges	3.00	3.07
	<b>C. Others</b>		
f	Printing & stationary (consumption)	8.84	6.05
g	Travelling and Conveyance Expenses		
h	Hospitality (Medicine)	0.10	0.05
i	Audit & Legal Fees	2.38	1.77
j	Professional charges	3.04	2.43
k	Advertisement and publicity	3.22	4.80
l	Newspaper and Periodicals	0.02	0.23
m	Loss on sale of assests		
n	Others (specify) <span style="float: right;">Annexure - 13</span>	22.41	50.09
	<b>Total</b>	<b>106.51</b>	<b>129.76</b>

**SCHEDULE 18 - TRANSPORTATION EXPENSES**

S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
1	Vehicles (owned by educational institution)		
	a) Running expenses		
	b) Repairs & maintenance	4.25	4.64
	c) Insurance expenses		
2	Vehicles taken on rent/lease		
	a) Rent/lease expenses		
3	Vehicle (Taxi) hiring expenses		
	<b>Total</b>	<b>4.25</b>	<b>4.64</b>

*Rsm*

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**SCHEDULE 19 - REPAIRS & MAINTENANCE**

(Rs. In Lakhs)

S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
a	Building	30.41	30.61
b	Furniture & fixture	0.88	1.15
c	Plant & Machinery	1.41	2.23
d	Office Equipments	8.85	7.60
e	Computers		
f	Laboratory and Scientific equipments		
g	Audio Visual equipment		
h	Cleaning material & services		
i	Book binding charges		1.12
j	Gardening		
k	Estate maintenance		
l	Others (specify) Annexure - 14	12.29	23.53
<b>Total</b>		<b>53.84</b>	<b>66.23</b>

**SCHEDULE 20 - FINANCE COSTS**

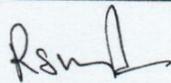
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
a	Bank charges		
b	Others (specify) Income tax penalty, Late payment TDS etc.		-
<b>Total</b>			-

**SCHEDULE 21 - OTHER EXPENSES**

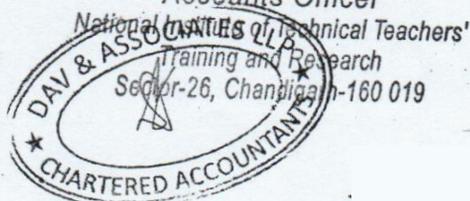
S.No.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
a	Provision for Bad & doubtful debts/ advances		
b	Irrecoverable balances written- off		
c	Grants/ subsidies to other institutions/ organizations		
d	Others (consumption of stores and spares)		-
<b>Total</b>			-

**SCHEDULE 22 - PRIOR PERIOD EXPENSES**

S.NO.	Particulars	Current Year 2019-2020	Previous Year 2018-2019
1	Establishment expenses		
2	Academic expenses		
3	Administrative expenses		
4	Transportation expenses		
5	Repairs & Maintenance		
6	Other expenses		
<b>Total</b>			-



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**1 Annexure 1 (Schedule 3)**  
**Sundry Creditors-Others**

Particulars	(Rs. In Lakhs)	
	Current Year 2019-2020	Previous Year 2018-2019
Sec - AICTE QIP POLY	2.11	2.11
Sec Arup India	0.25	0.25
Sec- Blue Star	0.20	0.20
Sec- Comparex	0.00	0.41
Sec- Design Tech	0.00	1.43
Sec- HILTI India Pvt. Ltd.	0.00	0.89
Sec- Invas Tech	0.09	0.09
Sec- Kalra Enterprises	1.17	1.17
Sec- Mapple Outright	0.07	0.07
Sec- Metagear infra	0.03	0.03
Sec- Metatech Industries	1.48	1.48
Sec -Neotel System and Service	0.22	0.97
Sec- New generation technology	0.06	0.06
Sec- Rohan Educational Solutions	0.47	0.47
Sec- SISL Infotech Pvt Ltd	0.00	0.16
Sec- Telerad	0.00	2.59
Sec Tequip Bank Garantee Jeol	3.75	3.75
Sec- V.R. Suppliers & Exporters	0.13	0.13
Sec-Aimco Solutions	0.07	0.07
Sec-Aimil Ltd	0.06	0.76
Sec-Akadmika Lab Solutions	0.10	0.10
Sec-Amigo Optima	0.31	0.31
Sec-Aryahi Traders	0.00	0.51
Sec-Avantech Enngineering	0.74	1.12
Sec-Bahuchar Traders	0.17	0.17
Sec-Benchmark Electronic	0.02	0.02
Sec-Broadways Mkt	0.15	0.15
Sec-Chana Brothers	0.00	2.03
Sec-Engineer group	0.12	0.12
Sec-Fore Solutions	2.68	2.68
Sec-Gigabyte	0.10	-
Sec-Kadkraft System Pvt Ltd	0.46	0.46
Sec-Lakshya Enterprise	0.09	0.09
Sec-M.O India Ltd	0.02	0.02
Sec-Mohindra Documentation Centre(Lib)	0.01	0.01
Sec-Saini Enterprises	0.21	0.21
Sec-Sehajta air conditioner	0.23	0.23
Sec-Shree Rapid Tech	0.00	16.09
Security from ME Students	58.11	56.48
Security of Advance Technology	0.02	0.02
Security of Binder	0.06	0.03
Security of BSNL	0.02	0.02
Security of Daksh Detective & security	2.83	5.83
Security of Golden Eagle	0.41	0.41
Security of Kamal Kumar Builder	0.42	0.42
Security of Krishan Kumar Washerman	0.04	0.04
Security of krishan Stationers	0.05	0.05
Security of Mann Electricals	0.10	0.10
Security of Nand Kishore	0.07	0.07
Security of National Small Industries	0.15	0.15
Security of Project Associates	0.15	0.15



Security of Punj	0.25	0.25
Security of Sanchi	0.03	0.03
Security of Sanjay Goyal	0.54	0.54
Security of Satish Aggarwal	0.14	0.14
Sec-Secure Guard	10.00	-
Sec-Sponsored Project	0.09	-
Security of Tech Info Ltd.	0.16	0.16
Security of Vijay Garg - FDR	36.36	36.36
Security/Retention money of Vijay Garg	0.96	0.96
Sec-V Instruments	0.93	0.93
Sec-Zen Exim	0.85	0.85
Service tax on Examination Fee	0.04	0.04
Sundry Creditors	3.68	2.25
<b>Total</b>	<b>132.02</b>	<b>147.68</b>

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**Accounts Officer**

**NITTTR, Chandigarh**

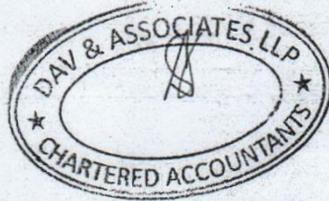
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2 Annexure 2 (Schedule 3)

**Current Liabilities - Statutory Liabilities- others**

(Rs. In Lakhs)

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Income tax firms (tds)	0.14	0.82
Income tax firms (tds) from experts	0.24	1.25
GST Withheld of BSBL(Renovation)	4.14	-
Income tax Staff	0.66	3.21
CGST	2.46	0.82
IGST	1.36	2.27
UTGST	2.46	0.82
Interest IGST	0.00	0.00
Income Tax Retirees		
TDS -CGST	-0.04	0.87
TDS-IGST	0.05	14.31
TDS-UTGST	-0.04	0.87
<b>Total</b>	<b>11.43</b>	<b>25.25</b>

3 Annexure 3 (Schedule 3)

**Current liabilities - Other current liabilities  
- Other funds**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Distribution fund	26.96	36.07
CREST Chd- Solar Plant	3.90	3.90
Earnest Money	46.78	80.64
Royalty to Authors	0.43	0.41
Consultancy Projects	355.44	154.98
Welfare fund ME students	6.20	7.95
Tequip Grant	0.10	0.10
GIS	0.07	-
<b>Total</b>	<b>439.87</b>	<b>284.04</b>

4 Annexure 4 (Schedule 3)

**Current Liabilities - Other current Liabilities**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Dead Account - Earmarked fund - GPF/CPF		
<b>Total</b>		-

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Accounts Officer

NITTR, Chandigarh  
Accounts Officer

*[Signature]*  
24-6-2019

Director

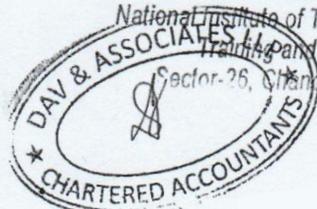
NITTR, Chandigarh

निदेशक/Director

National Institute of Technical Teachers'

Training and Research

Sector-26, Chandigarh-160 019



राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

3 Annexure 5 (Schedule 3)

Provisions

(Rs. In Lakhs)

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Maintenance Student Centre/Electrical/Building/Elect & Water Charges	5.14	0.78
Salaries	162.54	125.69
Dearness Allowance	0.00	9.41
CPF- Employer Share	1.52	1.52
Children Education Allowance	14.33	12.96
Audit Fee & Legal & Professional Charges	1.55	1.63
<b>Total</b>	<b>185.08</b>	<b>151.97</b>

6 Annexure 6 (Schedule 8)

Loans, Advances & Deposits

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>A. On Capital Account</b>		
Adv ETV Media Building	0.39	0.69
Staff Qtrs 1995-96	2.23	2.23
Staff Qtrs 1996-97	7.78	7.78
Advance to BSNL	201.67	236.34
Advance to CPWD	13.85	13.85
<b>Sub Total (A)</b>	<b>225.91</b>	<b>260.88</b>
<b>B. Others</b>		
TDS	48.28	26.16
Advance to Firms/Tax Appeal	1.00	1.00
Advance to Firms/Tax 2011-12	9.98	9.98
Temporary Advance	0.65	(10.25)
Recoverable from Bank - Earmarked fund NPS	3.39	1.94
<b>Sub Total (B)</b>	<b>63.30</b>	<b>28.84</b>
<b>Total</b>	<b>289.21</b>	<b>289.71</b>

*Rsm*

Accounts Officer

NITTR, Chandigarh  
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National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*

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7 **Annexure 7 (Schedule 13)**

**Other income - Misc. Receipts**

(Rs. In Lakhs)

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Misc. Receipt	29.32	9.85
Overhead Charges	46.10	56.40
Recruitment Fee	(25.49)	0.00
Projector Charges	0.51	0.12
Recovery against salary	0.00	1.48
Sale of Old Newspaper and Magazine	0.04	8.91
IFD-01		0.44
IFD 10 Sale of Publication		0.00
STC Regd Fee	8.48	0.00
NC-4(RD)	0.77	
Students Training	1.84	
<b>Total</b>	<b>61.57</b>	<b>77.20</b>

8 **Annexure 8 (Schedule 15)**

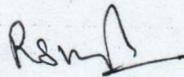
**Staff Payments & benefits - Salaries & Wages**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Leave Salary		
Pension and commutations	854.85	777.57
PDA	6.27	23.79
Faculty	975.54	723.97
Non Faculty	657.66	690.51
Outsource Salary	264.16	177.25
<b>Total</b>	<b>2758.48</b>	<b>2393.08</b>

9 **Annexure 9 (Schedule 15)**

**Contribution to Other fund - NPS, Gratuity, Leave Encashment**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
GRATUITY	85.74	238.76
NPS	(0.06)	18.94
LEAVE ENCASHMENT	8.55	73.83
LEAVE ENCASHMENT TO RETIREES	140.47	2.03
NPS INSTITUTE SHARE	66.88	41.82
<b>Total</b>	<b>301.58</b>	<b>375.38</b>



Accounts Officer

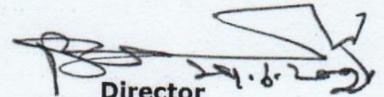
NITTR, Chandigarh  
Accounts Officer

National Institute of Technical Teachers'

Training and Research

Sector 26, Chandigarh, Punjab - 160 019





Director

NITTR, Chandigarh

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10 **Annexure 10 (Schedule 15)**  
**Staff Payments & benefits - TA/DA**

(Rs. In Lakhs)

Particulars	Current Year 2019-2020	Previous Year 2018-2019
DA	15.79	13.58
TA	6.56	16.78
Over Time Allowance and Stipend	0.07	3.54
<b>Total</b>	<b>22.42</b>	<b>33.90</b>

11 **Annexure 11 (Schedule 16)**  
**Academic Expenses - Seminar/Workshop**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Annual day/ cultural prog.	2.48	5.91
Annual sports	5.84	0.81
Teacher Day	0.18	0.00
Hindi day	0.68	0.64
<b>Total</b>	<b>9.18</b>	<b>7.36</b>

12 **Annexure- 12 (Schedule 16)**  
**Expenditure on STC/ICT**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
TA- Academic	128.98	122.85
Honourium -Academic	38.61	43.97
Academic Contengencies	3.18	3.24
<b>Total</b>	<b>170.77</b>	<b>170.07</b>

*Rsm*

Accounts Officer

NITTTR, Chandigarh  
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Sector-26, Chandigarh-160 019



*[Signature]*

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**13 Annexure 13 (Schedule 17)**  
**ADMINISTRATIVE & GENERAL EXPENSES**  
**OTHERS (SPECIFY)**

Particulars	(Rs. In Lakhs)	
	Current Year 2019-2020	Previous Year 2018-2019
BOG MEETING	9.65	0.00
EDC Machine Charges(Axis)	0.62	0.78
Golden Jublie of Institute	0.00	(1.00)
Ground Rent	0.00	0.59
IFDI A.Cell	0.10	0.00
Independence day	0.00	0.10
Liveries	3.70	0.00
Office Contg.	7.94	49.58
Service Charges NPS	0.06	0.04
Lib E-Journals	0.34	0.00
<b>Total</b>	<b>22.41</b>	<b>50.09</b>

**14 Annexure 14 (Schedule 19)**  
**REPAIRS & MAINTANENCE - OTHERS (SPECIFY)**

Particulars	Current Year		Previous Year	
	2019-2020		2018-2019	
Mtc. Applied Science	0.41	0.24		
Mtc. Civil	6.66	3.70		
Mtc. Computer	1.90	3.25		
Mtc ECE	0.24	0.65		
Mtc. EDIC	0.12	0.04		
Mtc. Electrical	4.86	7.70		
Mtc EMGT	0.07	0.09		
Mtc ETV	(6.23)	3.32		
Mtc. IMCO	0.75	0.70		
Mtc ISO	0.24	0.66		
Mtc. Media	3.08	2.94		
Mtc. R/D	0.08	0.09		
Mtc. Sports	0.02	0.00		
Mtc. CDC	0.10	0.14		
<b>Total</b>	<b>12.29</b>	<b>23.53</b>		

*Rswd*

**Accounts Officer**  
**NITTR, Chandigarh**  
*Accounts Officer*



National Institute of Technical Teachers'  
 Training and Research  
 Sector-26, Chandigarh-160 019

*[Signature]*

**Director**  
**NITTR, Chandigarh**

निदेशक/Director  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
Sector – 26, Chandigarh**

**ACCOUNTING POLICIES**

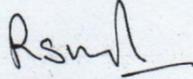
**SCHEDULE 23**

1. The Accounts have been maintained in the format as prescribed by the Government of India, Ministry of Human Resource Development; vide their letter No. 29-4/2012-FD dated 17<sup>th</sup> April 2015, issued by the Under Secretary to the Govt of India.
2. The Accounts have been prepared on accrual basis.
3. Depreciation on fixed Assets has been provided on Straight Line Method on the rates specified as per Formats of Financial Statements for Central Higher Educational Institutions of India.
4. The Fixed Assets are stated at cost of acquisition including inward freight, duties and taxes and incidental and direct expenses related to acquisition, installation and commissioning. The fixed assets purchased out of sponsored projects and restricted projects are booked by credit to Capital fund and merged with Fixed Assets of the Institution.
5. Expenditure on purchase of stores is accounted as revenue expenditure, except that the value of closing stock held on 31<sup>st</sup> March is set up as inventories by reducing the corresponding Revenue Expenditure on the basis of information obtained from Departments. They are valued at cost
6.
  - (i) The Institute receives grants-in-aid from Government of India under Capital & Revenue schemes to meet the expenditure on salaries of employees, pension to retirees, traveling expenses for training of technical teachers and purchase of store/equipments etc. against Institute's annual budget approved by the Board of Governors. The funds, if remained unutilized at the end of the financial year, are carried over to the following financial year with the approval of the Government of India.
  - (ii) For specific projects, unspent balance/funds, if any, are refunded to the concerned sponsoring agencies/departments after the completion of the respective Project.
7. Institute receives funds against Sponsored Projects and Consultancy Project which are shown as deposits in Schedule 3a. The Institute recognizes its income on completion of project/consultancy.



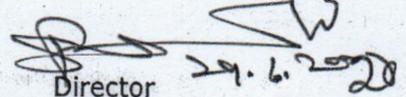
8. Institute makes provision of employee benefits such as Leave Encashment and Gratuity on estimation basis.

9. The Board of Governors delegated powers jointly to the Director and the Accounts Officer of the Institute to approve and sign the Annual Accounts of the Institute before submission to Audit Officer vide Item No. B.4.4.8 in their meeting held on 27.1.2006.



Accounts Officer  
NITTTTR, Chandigarh  
Accounts Officer

National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



Director  
NITTTTR, Chandigarh

निदेशक/Director  
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
Sector – 26, Chandigarh**

**NOTES ON ACCOUNTS**

**SCHEDULE 24**

1. This is a non-commercial organization and Income Tax is not applicable as in the case of Universities or other Educational Institutions existing solely for education purpose and not for the purpose of profit and which are wholly or substantially financed by the Government under Section 10(23C)(iiiab).

2. The details of funds maintained by Institute:

**1. Corpus Fund**

(Amount in Lakhs)

<b>Particulars</b>	<b>Current Year</b>	<b>Previous Year</b>
Opening Balance	8042.00	7302.19
Add: Addition in Fund	312.93	739.81
Less: Utilization of Fund	-	-
Closing Balance	8354.94	8042.00

The addition to Corpus fund is on account of Grant received from Ministry for Capital expenditure.

**2. General Fund**

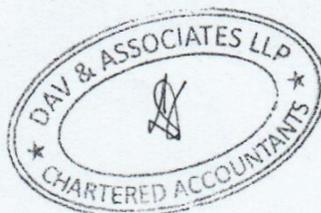
(Amount in Lakhs)

<b>Particulars</b>	<b>Current Year</b>	<b>Previous Year</b>
Opening Balance	(2574.77)	(1625.06)
Add: Addition in Fund		
Less: Utilization of Fund	(133.24)	(949.71)
Closing Balance	(2708.01)	(2574.77)

**3. Designated/ Earmarked Fund**

(Amount in Lakhs)

<b>Particulars</b>	<b>Current Year</b>	<b>Previous Year</b>
Opening Balance	2256.54	2094.17
Add: Addition in Fund	593.78	552.82
Less: Utilization of Fund	487.23	390.45
Closing Balance	2363.08	2256.54



3. TDS deducted by the various firms as confirmed on website amounting to Rs. 22.12 Lakhs has been given effect in the Balance Sheet.

4. This is to certify that there is an unspent balance of Rs. 2448.49 Lakhs (which includes OH36 – Rs. 763.62 Lakhs, OH31 - Rs. (-) 44.57 Lakhs, OH35 Rs. 171.24 Lakhs and IRG Rs. 1558.20 Lakhs).

5. Institute is in possession of land measuring 17.98 acres out of which 15.00 acres is held as free hold.

6. The Security towards ME students of Rs. 58.11 Lakhs is outstanding as on 31<sup>st</sup> March 2020.

7. Schedule one to Twenty Four are annexed to and form an integral part of the Balance Sheet as on 31.3.2020.

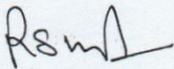
**8. Detail of Capital Work in Progress including capital advance of Rs.260.88 lakhs till 31.03.2019 is as follows:**

Purpose of Advance	Year	Amount (Rs in Lakhs)
Capital Work in Progress with Chd Admin (ETV Media Building)	2019-20	10.39
Advance for Renovation of Building (CPWD)	2019-20	13.85
Expenditure on Building Work In Progress (BSNL)	2019-20	201.67
	<b>Total</b>	<b>225.91</b>

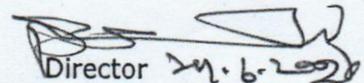
9. Amortization of lease premium on the basis of period of lease has been charged under rules.

**Building Account**

1. An advance of Rs. 10.69 Lakhs out of the advance amount deposited with Chandigarh Administration for construction of Staff Quarters is awaiting adjustment in Institute Accounts. The work has since been completed and buildings handed over to the Institute. The certificate for having received the final payment from this Institute has been obtained from the Sub Divisional Engineer, W/s Sub Div. -3 Chandigarh. However, accounts in support of this expenditure are awaited from the concerned quarter.



Accounts Officer  
NITTR, Chandigarh  
Accounts Officer  
National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



Director  
NITTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH**

**Sector - 26, Chandigarh**

**Receipts and Payment Account for the Period Ended 31.03.2020**

**A. RECEIPTS**

**(Rs In Lakhs)**

S.No.	Particulars	Annexure	Current Year 2019-2020	Previous Year 2018-2019
I	<b>Opening Balance</b>			
	A) Cash Balance		3.72	6.94
	B) Bank Balance			
	- In Current Account			
	- In Deposit Account		2594.48	2389.64
	- In Saving Account		342.46	1392.04
II	<b>Grant Received</b>			
	A) From Government of India	1	4888.30	4160.92
	B) From State Government			
	C) From Other Sources			
III	Academic Receipts	2	168.38	183.98
IV	Receipts against Earmarked Endowment Funds	3	67.00	377.08
V	Receipts against Sponsored Projects / Schemes	4	323.73	267.55
VI	Receipts against Sponsored Fellowships & Scholarships	-	0.00	0.00
VII	Income on Investments from	-	0.00	0.00
	A) Earmarked / Endowment Fund			
	B) Other Investments			
VIII	Interest Received on	5	217.83	167.23
	A) Bank Deposit			
	B) Loan & Advances			
	C) Savings Bank Accounts			
IX	Investment Encashed	-	0.00	0.00
X	Term Deposit with Scheduled Bank Encashed	-	0.00	0.00
XI	Other Income (Including Prior Period Income)	6	216.48	235.20
XII	Deposits & Advances	7	584.27	504.76
XIII	Miscellaneous Receipts including Statutory Receipts	8	778.85	694.59
XIV	Any Other Receipts	9	74.03	178.51
	<b>TOTAL</b>		<b>10259.52</b>	<b>10558.41</b>

Dated

Place :- Chandigarh

*Rswm*  
**Accounts Officer**  
**NITTR, Chandigarh**  
*Accounts Officer*

*[Signature]*  
**NITTR, Chandigarh**



National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019

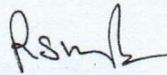
निदेशक/Director  
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**B PAYMENTS**

S.No.	Particulars		Current Year	Current Year
I	<b>EXPENSES</b>			
	- Establishment Expenses	9	3214.93	2985.12
	- Academic Expenses	10	60.67	42.90
	- Administrative Expenses	11	131.75	173.42
	- Transportation Expenses			
	- Repair & Maintenance	12	110.43	132.82
	- Prior Period Expenses			
II	Payment against Earmarked / Endowment Funds	13	725.64	1324.17
III	Payments against Sponsored Project / Scheme	14	213.12	184.94
IV	Payments against Sponsored Fellowships / Scholarships	-	0.00	0.00
V	Investments and Deposit Made	-	0.00	0.00
	A) Out of Earmarked / Endowment Fund			
	B) Out of Own Funds (Investment Other)			
VI	Term Deposits with Scheduled Bank	-	0.00	0.00
VII	Expenditure on Fixed Assets and Capital Work In Progress	-	0.00	0.00
	A) Fixed Assets	15	217.55	1317.44
	B) Capital Work In Progress			
VIII	Other Payments Includings Statutory Payments	16	817.74	756.56
IX	Refunds of Grants		0.00	0.00
X	Deposits and Advances	17	393.32	434.71
XI	Other Payments	18	133.48	265.67
XII	<b>Closing Balances</b>			
	A) Cash In Hand		3.71	3.72
	B) Bank Balances		0.00	0.00
	- In Current Accounts		0.00	0.00
	- In Saving Accounts		1924.20	342.46
	- In Deposits Accounts		2312.98	2594.48
	<b>TOTAL</b>		<b>10259.52</b>	<b>10558.41</b>

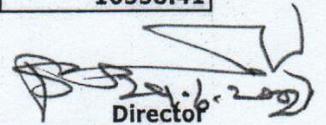
Dated

Place :- Chandigarh



Accounts Officer  
NITTTR, Chandigarh  
Accounts Officer

National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



Director  
NITTTR, Chandigarh

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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH**  
Sector - 26, Chandigarh

(Rs In Lakhs)

**1. Grants Received**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Grant in Aid Capital OH 35	330.00	1000.00
Grant in Aid General (OH31)	1030.00	643.50
Interest Income on Grant (OH31)	9.25	0.00
Grant Salary OH-36	2800.00	1690.00
Unutilised Grant (OH 36+OH31)	624.32	94.74
Opening Grants 36	9.30	324.84
Opening Grants 31	85.43	407.84
	<b>4888.30</b>	<b>4160.92</b>

**2. Academic Receipts**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
C01 ME	168.38	181.49
Fees under various courses	0.00	2.49
	<b>168.38</b>	<b>183.98</b>

**3. Receipts against Earmarked Endowment Funds**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Corpus Fund	16.07	14.91
Equipment Replacement Fund	18.79	14.91
Faculty Development Fund	16.07	14.91
Maintenance Fund	16.07	14.91
OH 35		317.44
	<b>67.00</b>	<b>377.08</b>

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Accounts Officer

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*[Signature]*

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**4. Receipts against Sponsored Projects / Schemes**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
AICTE QIP POLY	0.05	25.20
FELLOWSHIP BY Abb BENGLAURE INDIA	0.00	0.60
Inspire Fellowship by SC and Tech	9.33	12.66
MO 18 (MOOCS)	16.45	16.73
PDA-08	75.00	0.00
PDA-21(Solar PV System)	7.15	0.00
Ph.D Scholar Chandni Devi (ECE)	0.30	0.00
PDA-13 CSE	0.00	1.13
PDA-2(Electrical)AICTE	0.00	14.61
PDA-3(Computer)	0.00	2.72
SP-01 (SS Pattnaik -Coordinator)	1.41	146.04
SP-04	2.80	3.72
SP-05	0.00	5.00
SP-06(ETV)	20.80	13.75
SP-10	0.00	0.16
SP-11	0.16	3.50
SP-14 MECHANICAL	0.00	0.48
SP-2(Civil)	0.00	9.97
SP-7(EDIC)	0.00	2.00
SP-8 (EDIC)	0.00	0.26
SP-17 Civil	1.75	0.00
SP-18(CDC)	2.40	0.00
W-34 Unat Bharat Abyian(RD)	0.00	1.50
SP-19Unat Bharat Abhyian	12.50	7.52
SP-20(Computer)	14.60	0.00
SP-21(Computer)	3.10	0.00
SP-22 (Elect)	2.08	0.00
SP-23(ETV)	78.00	0.00
SP-24	1.62	0.00
SP-25(Computer)	27.03	0.00
SP-26(Atal)	1.62	0.00
SP-27	10.00	0.00
SP-28(Computer)	6.38	0.00
SP-29	1.62	0.00
SP-30	1.62	0.00
SP-31	10.02	0.00
SP-32	1.62	0.00
SP-33	1.21	0.00
SP-34	2.50	0.00
SP-35	10.63	0.00
	<b>323.73</b>	<b>267.55</b>

**5. Interest Received on**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>A. Bank Deposits</b>		
Interest From Bank	213.36	157.03
<b>B. Loan &amp; Advances</b>		
Interest on Advances	2.64	0.79
<b>C. Loan &amp; Advances - Others</b>		
Grant Interest PFMS	0.00	9.41
Interest on Refunds	1.83	0.00
	<b>217.83</b>	<b>167.23</b>



*Ramb*  
**Accounts Officer**  
**NITTTR, Chandigarh**  
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*[Signature]*  
**Director**  
**NITTTR, Chandigarh**  
 निदेशक/Director  
 राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**6. Other Income (Including Prior Period Income)**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
BOOKING OF AUDITORIUM	1.94	0.84
Booking of Board Room	0.04	0.04
Booking of Conference Hall	0.64	0.44
Rent From Dinning Hall	1.59	0.61
BOOKING OF EXAMINATION HALL	1.16	0.87
Booking of Syndicate Room	0.17	0.38
HRR	22.79	16.95
Receipt of Institute Share	87.69	115.90
Ground Rent CM Auto Sales	0.00	0.35
NC-4(RD)	0.77	0.00
IFD 10 Sale of Publication	0.09	0.26
Misc Receipt	29.32	9.85
Overhead Charges	46.10	56.40
Projector Charges	0.51	0.12
Recruitment Fee	-25.49	0.00
Rent From Guest House	12.53	19.80
Rent From Hostel Rooms	26.09	3.03
Rent From Mess/Canteen	0.18	0.12
RTI	0.01	0.01
Sale of Old Newspaper and Magazine	0.04	9.23
STC Regd Fee	8.48	0.00
Students Training	1.84	0.00
	<b>216.48</b>	<b>235.20</b>

**7. Deposits & Advances**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Consultancy Projects	582.37	328.59
TEMPORARY ADVANCE	0.00	50.09
Festival Advance	0.41	1.14
Loan for Car	0.00	0.41
Loan for Computer	0.31	0.31
Loan for HBA	1.15	2.07
Loan for Scooter	0.02	0.30
Advance Loading money in Cards	0.00	1.15
Advance to M/s Avantech Ltd	0.00	0.35
Loan Received from GPF	0.00	120.00
Advance Payment(EEM-2 EMGT)	0.00	0.35
	<b>584.27</b>	<b>504.76</b>



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**8. Miscellaneous Receipts including Statutory Receipts**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>Duties &amp; Taxes</b>		
CGST	28.85	9.27
IGST	42.46	65.05
UTGST	28.85	9.27
GST Withheld of BSBL(Renovation)	4.14	0.00
Income Tax Experts	7.09	8.53
Income Tax Firms	6.85	6.94
Income Tax Retirees	33.18	20.34
Income Tax Staff	262.98	214.47
TDS -CGST	5.86	3.15
TDS -SGST	1.02	16.00
TDS-IGST	5.86	3.15
<b>Recovery &amp; Deduction From Salary</b>		
GIS	15.24	12.93
GPF	317.68	302.93
LIC	8.25	8.81
R&FW	0.06	0.06
Staff Welfare Fund	10.48	13.69
	<b>778.85</b>	<b>694.59</b>

**9. Any Other Receipts**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
Advance Payment Mtc- Civil	0.00	0.35
Alumini Association	1.25	1.74
Distribution Fund	26.86	36.03
Earnest Money	24.85	97.12
Royalty to Authors	0.02	0.02
Security of Firms	19.67	40.76
Sundry Creditors	1.38	0.00
Golden Jubilee of the Institute	0.00	1.00
Recovery From Salary	0.00	1.48
	<b>74.03</b>	<b>178.51</b>

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Director

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**9. Establishment Expenses**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>REVENUE (NON SALARY)</b>		
<b>OH-31 (TRAINING &amp; PENSION)</b>		
Academic Cont	3.18	3.24
Honorarium (Training)	38.61	43.97
TA (Training)	128.98	122.85
Advance Payment(EEM-2 EMGT)	0.00	0.35
Regular Pension	754.42	630.48
Outsource Salary	244.05	0.00
<b>OH-36 (SALARY)</b>		
Retirement Benefits		
Commutation	93.61	137.36
Gratuity	101.61	103.51
Leave Encashment to Retirees	65.92	96.11
TA to Retirees	5.25	25.07
<b>SALARY PART-A</b>		
Salary Faculty	954.28	712.34
Salary Non Faculty	662.17	695.42
Outsource Salary	0.00	177.25
DA	25.20	10.37
Arrears	0.00	0.00
Interest on Pension	0.00	1.17
Recovery From Salary	0.00	0.00
<b>SALARY PART-B</b>		
Children Education Allowance	13.50	12.39
Leave Encashment	8.55	73.83
LTC	10.30	20.47
Medical	26.82	34.38
NPS both Share	66.87	60.76
PDA	6.27	23.79
CPF Institute share	5.32	0.00
Leave Salary & Pension Contribution	0.00	0.00
	<b>3214.93</b>	<b>2985.12</b>

**10. Academic Expenses**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
C01 ME	60.67	42.90
	<b>60.67</b>	<b>42.90</b>



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### 11. Administrative Expenses

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>REVENUE (NON SALARY)</b>		
OTA	0.00	0.00
Stipend	0.07	3.54
Contribution to reserve Fund	64.28	59.64
<b>NON SALARY</b>		
<b>Contingency</b>		
Advertisement	3.22	4.80
Annual Day	2.48	5.91
Annual Sports	5.84	0.81
Cont RMCT and Bog Meeting	9.65	0.02
EDC Machine Charges	0.62	0.78
Hindi Day	0.68	0.64
Independence Day	0.00	0.10
Library Journal	0.34	0.00
Livery	3.70	0.00
Medicine	0.10	0.05
Newspaper & Periodicals	0.02	0.23
Office Contingency	7.94	49.58
Postage	1.22	1.51
Property Tax	5.56	5.47
Service Charges NPS	0.00	0.04
Printing & Stationary	8.84	6.05
TT Charges	3.00	3.07
Professional & Audit Fees	5.49	4.13
Ground Rent	0.00	0.59
Teacher Day	0.18	0.00
Honorarium	1.84	9.68
TA -Non Salary	6.56	16.78
IFDI A CELL	0.10	0.00
	<b>131.75</b>	<b>173.42</b>

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29.6.2020

Director  
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## 12. Repair & Maintenance

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>Maintenance</b>		
Mtc Applied Sc	0.41	0.24
Mtc Building	16.38	18.40
Mtc Campus	0.79	1.74
Mtc Cdc	0.10	0.14
Mtc Civil	6.66	3.70
Mtc Computer	1.90	3.25
Mtc ECE	0.24	0.65
Mtc EDIC	0.12	0.04
Mtc Electrical	4.86	7.70
Mtc Electrical Lab	0.91	0.29
Mtc EMGT	0.07	0.09
Mtc ETV	-6.23	3.32
Mtc Furniture	0.88	1.15
Mtc Guest House	7.51	5.25
Mtc Hostel	5.73	5.23
Mtc IMCO	0.75	0.70
Mtc ISO	0.24	0.66
Mtc Lib	0.00	1.12
Mtc Mechanical	1.41	1.94
Mtc Media	3.08	2.94
Mtc R/D	0.08	0.09
Mtc Refrigeration & A.C	6.76	5.94
Mtc Sports	0.02	0.00
Mtc Telephone	1.18	1.66
Mtc Vehicle	4.25	4.64
Mtc Water & Electricity Charges	52.33	61.95
	<b>110.43</b>	<b>132.82</b>

## 13 Payment against Earmarked / Endowment Funds

Particulars	Current Year 2019-2020	Previous Year 2018-2019
CORPUS FUND	1.65	0.16
Equipment Replacement Fund	1.65	0.00
FACULTY DEV FUND	1.65	0.00
MAINTENANCE FUND	1.65	0.00
GENERAL FUND	0.00	887.24
Grant OH Capital	0.00	48.88
Utilised Grant OH 35	0.00	293.16
Unutilised Grant OH 31	-44.57	85.43
Unutilised Grant OH 36	763.62	9.30
	<b>725.64</b>	<b>1324.17</b>



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**Training and Research**  
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*[Signature]*  
**Director**  
**NITTTR, Chandigarh**

**निदेशक/Director**  
**राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान**  
**National Institute of Technical Teachers Training & Research**  
**सेक्टर/Sector 26, चण्डीगढ़/Chandigarh**

14. Payments against Sponsored Project / Scheme

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>SPONSORED PROJECTS</b>		
AICTE QIP POLY	13.04	12.70
FELLOWSHIP BY Abb BENGLAURE INDIA	0.00	0.60
MO 18 (MOOCS)	14.77	4.48
PDA-13 CSE	0.00	1.06
PDA-2(Electrical)AICTE	0.00	12.40
PDA-22	0.14	0.00
PDA-3(Computer)	2.72	0.00
Ph.D Scholar Chandni Devi (ECE)	0.30	0.00
SP-01 (SS Pattnaik -Coordinator)	33.42	114.03
SP-06(ETV)		1.78
INSPIRE FELLOWSHIP BY SC & TECH GOI	11.50	10.49
SP-04(Mech	2.80	5.40
SP-06(ETV)	24.37	0.00
SP-09	0.00	3.63
SP-10(Edic)	0.16	0.00
Sp-11(Edic)	2.60	1.73
SP-12	0.00	0.34
Sp-13(Edic)	0.00	0.34
SP-14	0.19	0.00
SP-16 (5.17 COMP SC , PWD)	20.92	0.00
SP-17 Civil)	3.01	0.30
SP-18(CDC)	0.00	0.77
SP-19	7.42	7.52
SP-20(Computer)	0.83	0.00
SP-21(Computer)	2.78	0.00
SP-22 (Elect)	2.08	0.00
SP-23(ETV)	46.25	0.00
SP-24	1.62	0.00
SP-25(Computer)	0.26	0.00
SP-26(Atal)	1.42	0.00
SP-27	6.27	0.00
SP-28(Computer)	2.48	0.00
SP-29	0.96	0.00
SP-30	1.03	0.00
SP-31	1.53	0.00
SP-32	1.44	0.00
SP-33	0.85	0.00
SP-34	0.39	0.00
SP-35	1.39	0.00
TDS SP 18	0.24	0.00
SP-2(Civil)	3.96	6.01
SP-8 (EDIC)	0.00	0.15
SP-ICT-50(EDIC) DST	0.00	0.80
W-34 Unat Bharat Abyian(RD)	0.00	0.39
	<b>213.12</b>	<b>184.94</b>



*Rswb*  
**Accounts Officer**  
**NITTR, Chandigarh**  
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*[Signature]*  
**Director** 24.6.2020

**NITTR, Chandigarh**  
 निदेशक/Director  
 राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**15. Expenditure on Fixed Assets and Capital Work In Progress**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>Equipments</b>		
Equipment -Academic Cell	0.00	1.76
Equip - CIVIL	0.00	32.46
Equip - Mechanical	0.00	387.57
Equipment-Applied Sc	0.00	7.21
Equipment-Building	0.57	4.70
Equipment-Campus	0.38	0.00
Equipment-CDC	0.04	2.55
Equipment-Civil	0.27	0.00
Equipment-Computer	6.94	147.80
Equipment-ECE	0.02	22.58
Equipment-Elect Mtc	0.49	0.61
Equipment Electrical Deptt	0.00	335.48
Equipment-ESC	0.00	3.25
Equipment-ETV	0.00	78.57
Equipment -Guest House	0.00	0.60
Equipment Hostel	5.19	19.32
Equipment-IMCO	1.82	14.85
Equipment-Mechanical	4.02	0.00
Equipment-Media	2.24	14.81
Equipment-Office	0.71	0.52
Equipment- Ref & Aircondining	0.24	0.46
Equipment-Rural Dev	0.00	1.58
Equipment Telephone	0.00	0.59
Advance Renovation (BSNL)	-34.67	0.00
Renovation- Institute Building	194.97	190.93
Adv ETV Media Building	-0.30	0.00
Computer & Peripherel	0.00	0.09
Intangible Assets	20.22	24.36
Library Books	14.40	3.22
Lib E Journal	0.00	14.84
Vehicle	0.00	6.71
	<b>217.55</b>	<b>1317.44</b>



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*[Signature]*  
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**16. Other Payments Includings Statutory Payments**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
<b>Duties &amp; Taxes</b>		
CGST	27.22	8.77
IGST	43.37	73.64
UTGST	27.22	8.77
Income Tax Experts	8.11	8.11
Income Tax Firms	7.53	6.84
Income Tax Retirees	33.18	20.59
Income Tax Staff	265.53	288.47
TDS-CGST	6.77	2.28
TDS-SGST	15.27	2.28
TDS-IGST	6.77	1.69
Income Tax Receivable	22.12	5.90
<b>Recovery &amp; Deduction From Salary</b>		
CTD		
GIS	15.17	12.93
GPF	317.68	302.93
LIC	8.25	8.81
R&FW	0.06	0.06
STAFF WELFARE FUND	13.51	4.49
	<b>817.74</b>	<b>756.56</b>

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**Accounts Officer**

**NITTTR, Chandigarh**

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*National Institute of Technical Teachers'  
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*[Signature]*  
24.6.2020

**Director**

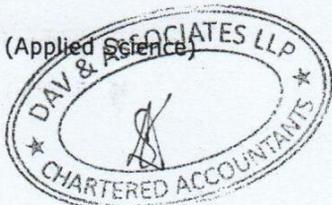
**NITTTR, Chandigarh**

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**17. Deposits and Advances**

Particulars	Current Year 2019-2020	Previous Year 2018-2019
5.20	0.00	4.35
CP-1	61.82	68.19
CP-1 TDS	0.17	0.00
CP-10 CP-5 (E)	0.00	0.89
CP-101 (Computer)	0.90	0.00
CP-102	44.55	0.00
CP-103	44.78	0.00
CP-104(Elect)	0.52	0.00
CP-106	1.58	0.00
CP-107(EMGT)	1.58	0.00
CP-11	0.38	0.11
CP-111(IMCO)	1.01	0.00
CP-112	0.19	0.00
CP-113(Elect)	0.62	0.00
CP-114	7.35	0.00
CP-115(Mech)	3.60	0.00
CP-116	1.03	0.00
CP-117 (AP)	2.00	0.00
CP-119	4.93	0.00
CP-120	5.47	0.00
CP-122	0.30	0.00
CP-123	0.69	0.00
CP-13 Mech	0.43	0.85
CP-15 Civil	7.42	8.60
CP-17	0.40	0.00
CP-2	1.70	0.00
CP-20	0.00	17.24
CP-22	0.00	0.40
CP-23	0.00	11.05
CP-3	0.00	0.22
CP-4	1.60	2.13
CP-41	0.00	5.43
CP-43	0.00	3.27
CP-50	0.00	19.14
CP-53	0.53	0.67
CP-57	0.00	18.41
CP-59	0.00	8.16
CP-6	0.66	0.00
CP-62	1.93	2.05
CP-66 CDC	0.00	0.24
CP-67	0.00	9.94
CP-70	0.00	1.32
CP-75(CDC)	0.00	0.54
CP-76	0.00	30.11
CP-77	0.00	82.05
CP-78	0.00	0.67
CP-8 COMP CP 5(C)	17.59	9.23
CP-81	0.00	2.52
CP-82 CDC	0.51	4.64
CP-83(ETV)	0.03	0.13
CP-85	1.18	3.59
CP-86	0.00	0.42
CP-87((Civil)	23.83	0.11
CP-9 ECE CP 5(D)	0.00	0.18
CP-91 CIVIL	0.00	0.60
CP-92	2.39	0.00
CP-93(CDC)	0.00	6.10
CP-94	66.10	34.67
CP-95	0.00	2.40
CP-96 (Applied Science)	1.74	1.31



CP-97	66.18	30.98
CP-98 (ECE Deptt)	0.05	0.42
CP-99	0.51	0.43
P-122	0.04	0.00
TDS CP-103	3.63	0.00
Extn-09(Katra)	0.00	0.20
IC-01 COMP SC.	0.00	3.93
SERVICE CHARGES OF DINNING HALL	0.00	0.13
CP-104(Elect)	0.00	0.15
TEMPORARY ADVANCE	10.90	34.30
Festival Advance	0.00	0.04
Interest Receivable	0.00	0.02
Prepaid Insurance	0.00	0.10
Advance Loading Money Card Cards	0.00	1.75
Loan for Computer	0.50	0.00
Advance Payment Mtc- Civil	0.00	0.35
	<b>393.32</b>	<b>434.71</b>

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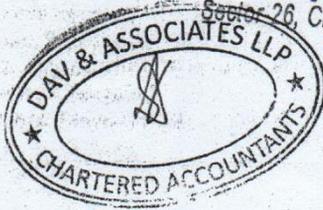
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*[Signature]*  
Director

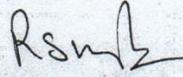
NITTTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**18. Other Payments**

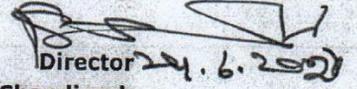
Particulars	Current Year 2019-2020	Previous Year 2018-2019
Alumini Association		0.46
DISTRIBUTION FUND	35.96	6.87
EARNEST MONEY	58.71	114.75
ROYALTY TO AUTHORS	0.00	0.00
WELFARE FUND ME STUDENTS	1.75	0.07
Security of Firms	36.75	23.52
Sundry Creditors	0.31	0.00
Secreterial Assistance	0.00	0.00
Repayment of loan from GPF	0.00	120.00
MISC DEPOSIT AUDITORIUM	0.00	0.00
DEPOSIT OF QIP POLY		
	<b>133.48</b>	<b>265.67</b>



Accounts Officer  
NITTTR, Chandigarh

Accounts Officer

National Institute of Technical Teachers  
Training and Research  
Sector-26, Chandigarh-160 019



Director  
NITTTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH  
SECTOR-26, CHANDIGARH  
BALANCE SHEET GPF/CPF AS AT 31.3.2020**

(Rs In Lakhs)

P.Y	LIABILITIES	C.Y.	P.Y	ASSETS	C.Y.
	<b>GPF</b>		2136.37	Investment	2183.34
	Opening Balance	1824.13	48.24	Int. accrued as on 31.03.20	91.35
	Add: Subscription in the year	305.67		Subscription due for march	
	Add: Sub for March			GPF	
	Add Interest credited	142.69		CPF	
	Add reconciliation GPF	0.00		UC due to CPF	
1824.13	Less: Subscription for			NPS-II	
	Less: Advance/ Withdrawal	364.59		Tax recoverd from interest on	
	Closing Balance	1907.91		Investments pending refund	
				Income Tax Department	
	<b>CPF</b>			<b>Cash at Bank</b>	
	Opening Balance	195.49	68.39	Indian Bank	83.31
	Add: Subscription in the year	4.64			
	Add: Sub for March 2018				
	Add Interest credited	16.83			
195.49	Less: Subscription for March		1.46	Sundry Recoverable	1.55
	Less: Advance/ Withdrawal	2.63			
	Closing Balance	214.32			
	<b>Institute Contribution (CPF)</b>				
	Opening Balance	104.45			
	Add: Subscription in the year	5.32			
	Add: Sub for March 2018	0.00			
	Add Interest credited	8.36			
	Add reconciliation CPF	0.00			
104.45	Less: Subscription for	0.00			
	Less: Advance/ Withdrawal	8.88			
	Closing Balance	109.25			
	<b>NPS Tier-II Account</b>				
	Opening Balance	0.00			
	Add: Subscription in the year	0.00			
	Add: Sub for March 2018	0.00			
	Add Interest credited	0.00			
0.00	Less: Subscription	0.00			
	Less: Advance/ Withdrawal	0.00			
	Closing Balance	0.00			
	<b>Interest Reserve</b>				
	Opening Balance	130.40			
	Add: Reconciliation				
	Add: Excess of Income over	-2.33			
130.40	expenditure				
	Closing Balance	128.07			
	Dead Account	0.00			
<b>2254.47</b>	<b>Total</b>	<b>2359.55</b>	<b>2254.47</b>	<b>Total</b>	<b>2359.55</b>

*Rswal*

Accounts Officer  
NITTTR, Chandigarh.

Accounts Officer

National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*

Director  
NITTTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH  
SECTOR-26, CHANDIGARH**

**Income And Expenditure Account  
For the Year ended 31.03.2020**

(Rs In Lakhs)

P.Y	Expenditure	C.Y	P.Y	Income	C.Y
131.38	<b>Interest Credited to:</b> GPF	142.69	175.97	Interest received on Investment	122.36
			-	Interest earned on Loan given	-
6.45	CPF	16.83	48.24	Add: Interest accrued on 31.03.20	91.35
				Add: Interest accrued on Advance	
5.29	University Contribution (CPF) NPS Tier-II	8.36		Add: Tax received on interest-m refund to be obtained	
	Dead Account W/off		0.08	Add Interest Accrued from CPF	0.09
5.48	Excess of Income over expend	(2.32)	-75.69	Less: Interest accrued for March	(48.24)
<b>148.60</b>		<b>165.57</b>	<b>148.60</b>		<b>165.57</b>

*Rsm*

**Accounts Officer  
NITTTR, Chandigarh.**

Accounts Officer  
National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*

**Director  
NITTTR, Chandigarh**

निदेशक/Director  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH  
SECTOR-26, CHANDIGARH  
CASH BOOK ACCOUNT GPF/CPF AS AT 31.3.2020**

		(Rs. In Lakhs)
P.Y.	Particulars	C.Y.
2015.06	Opeining Balance as on 01.04.2019	2204.76
	Subscription during the year	
	GPF as per ledger	305.67
	CPF as per ledger	4.64
	CPF Instt. Contribution	5.32
302.93	Investment	315.63
175.97	Add : Intt. On S/A & FDR	122.36
	Less :-	
	GPF Withdrawl	364.59
	CPF - Employer	8.88
	CPF - Employee	2.63
	Investment	0.00
289.20	Institute share	0.00
	GPF Loan from Main	0.00
<b>2204.76</b>	<b>Total</b>	<b>2266.65</b>

*Rsmf*

**Accounts Officer  
NITTR, Chandigarh.**  
*Accounts Officer*

National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*

**Director  
NITTR, Chandigarh**

निदेशक/Director  
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National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**Receipts and Payments Account  
For the Year ended 31.03.2020**

P.Y	Receipts	C.Y	P.Y	Payments	C.Y.
1983.10	Opening Balance	2194.98	238.99	GPF Adv./withdrawal	364.59
	SBI Branch-I		28.04	CPF Adv./withdrawal	2.63
	SBI Branch-II			NPS Tier-II Account	
	Bank			University Contribution	
				Withdrawal	8.88
301.37	GPF Subscription	305.67		Investment	
1.56	CPF Subscription	4.64	2194.98	Interest Paid on Loan	
	CPF University Contribution	5.32		<b>Closing Balance:</b>	2256.87
	NPS Tier-II Account			SBI branch-I	
	Investment Encashed			SBI branch-II	
175.97	Interest Received	122.36		Bank	
<b>2462.01</b>		<b>2632.98</b>	<b>2462.01</b>		<b>2632.98</b>

*Rsmh*

Accounts Officer  
NITTR, Chandigarh.  
Accounts Officer

National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019



*[Signature]*

Director  
NITTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, CHANDIGARH

BALANCE SHEET NEW PENSION SCHEME AS AT 31.3.2020

(Rs. In Lakhs)

LIABILITIES	Current Year 2019-2020	Previous Year 2018-2019	ASSETS	Current Year 2019-2020	Previous Year 2018-2019
<b>NPS Tier-I</b>			( Rupees in lakh) <b>NPS Tier-I</b>		
Opening Balance	(3.21)	(3.21)	Subscription and Contribution due for 31/03/2020		
Less: Sub. for 31/03/18		-	Investment		
Add: Sub + U Contribution	112.57	102.58	Interest accrued but not due		
Add: Interest Credited		-	Balance at SBOP		
Less: Transfer to NSDL	(111.12)	(102.58)	Recoverable from Main Account		
Add: Sub. + UC for 31/03/19	(1.76)	(3.21)			
<b>Balance with Main Accounts</b>					
Opening Balance	2.28	2.24	Amount Recoverale from bank	3.39	1.94
Add: During the year	0.06	0.04			
	2.34	2.28			
<b>Excess of Income over Expenditure</b>					
Balance as on 01.04.2018	2.87	2.91			
Add: During the year	-0.06	(0.04)			
	2.81	2.87			
<b>Total</b>	<b>3.39</b>	<b>1.94</b>	<b>Total</b>	<b>3.39</b>	<b>1.94</b>

*R.S.M.*

Accounts Officer  
NITTTR, Chandigarh.  
Accounts Officer

National Institute of Technical Teachers'  
Training and Research  
Sector 26, Chandigarh-160 019



*[Signature]*  
Director

NITTTR, Chandigarh

निदेशक/Director  
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, CHANDIGARH**  
**Inome and Expenditure Account**  
**For the Financial Year 2019-2020**

(Rs. In Lakhs)

Expenditure	Current Year 2019-2020	Previous Year 2018-2019	Income	Current Year 2019-2020	Previous Year 2018-2019
Interest Credited to subscribers Service Charges	0.06	-	Interest earned on Investments Less: Interest accrued Interest accrued but not due Interest earned		-
		0.04	Excess of Expenditure over Income	(0.06)	(0.04)
<b>Total</b>	<b>0.06</b>	<b>0.04</b>	<b>Total</b>	<b>(0.06)</b>	<b>(0.04)</b>

*Rsw*

**Accounts Officer**  
**NITTTR, Chandigarh.**

*Accounts Officer*  
*National Institute of Technical Teachers'*  
*Training and Research*  
*Sector-26, Chandigarh-160 019*



*[Signature]*

**Director**  
**NITTTR, Chandigarh**

निदेशक/Director  
 राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
 National Institute of Technical Teachers Training & Research  
 सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, CHANDIGARH**  
**Receipt And Payment Account**  
**For the Financial year 2019-2020**

(Rs. In Lakhs)

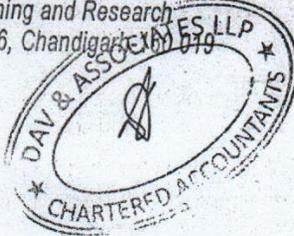
Receipts	Current Year 2019-2020	Previous Year 2018-2019	Payments	Current Year 2019-2020	Previous Year 2018-2019
Opening balance		-	Investments		-
NPS Tier -I A/c		-	Withdrawals	111.12	102.58
Own Sbscription	47.54	51.29	Service Charges	0.06	0.04
University Contribution	65.03	51.29	Paid to Tejwant		-
Refund from NSDL (Tejwant)		-	Closing Balance	1.45	-
Interest Received on Investment		-			
Interest on Savings bank Account		-			
Invstment encashed		-			
Paid From Main Accounts	0.06	0.04			
<b>Total</b>	<b>112.63</b>	<b>102.62</b>	<b>Total</b>	<b>112.63</b>	<b>102.62</b>

*Rsm*

Accounts Officer  
NITTR, Chandigarh.

Accounts Officer

National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh



*[Signature]*  
Director  
NITTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
सेक्टर/Sector 26, चण्डीगढ़/Chandigarh

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, CHANDIGARH**

**INTEREST ACCOUNT - NPS AS AT 31.03.2020**

<b>Particulars</b>	<b>Current Year 2019-2020</b>	<b>Previous Year 2018-2019</b>
Opening Balance	3.07	3.03
Interest	0	0
Less : Service Charges	0.06	0.04
<b>TOTAL</b>	<b>3.13</b>	<b>3.07</b>

*Rsmh*

Accounts Officer  
NITTR, Chandigarh.

Accounts Officer

National Institute of Technical Teachers' Training & Research  
Sector-26, Chandigarh-160 019



*[Signature]*  
24.6.2020

Director  
NITTR, Chandigarh

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
National Institute of Technical Teachers Training & Research  
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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH**

**BALANCE SHEET FOR THE PROJECTS SPONSORED BY THE GOVERNMENT  
OF INDIA- MHRD, NEW DELHI AS AT 31.3.2020**

PARTICULARS	Rs. In Lakhs	
	CURRENT YEAR	PREVIOUS YEAR
<b>LIABILITIES</b>		
<b>Capital/Corpus Fund</b>	16.32	17.60
Less excess of expenditure over income	(1.17)	(1.28)
Less : Prior Period Salary Expenditure	-	-
Add : Prior Period Intt. Accrued	-	-
Less : Prior Period FDR excess Shown	-	-
	<b>15.15</b>	<b>16.32</b>
<b>Current Liabilities &amp; Provisions</b>		
Salary Payable	0.11	0.11
<b>TOTAL LIABILITIES</b>	<b>15.26</b>	<b>16.43</b>
<b>ASSETS</b>		
<b>Fixed Assets</b>	14.69	15.88
<b>Current Assets</b>		
Advance payment	-	-
Cash & Bank Balance	0.57	0.55
FDR's	-	-
Interest accrued on FDR	-	-
<b>TOTAL ASSETS</b>	<b>15.26</b>	<b>16.43</b>

*Rsm*

Accounts Officer,  
NITTTR, Chandigarh  
Accounts Officer

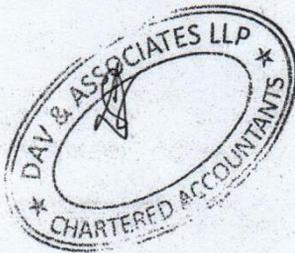
National Institute of Technical Teachers  
Training and Research  
Sector-26, Chandigarh-160 019

*[Signature]*  
Director, 24.6.2020

NITTTR, Chandigarh

निदेशक/Director

एन.टी.टी.टी.आर. संस्थान  
National Institute of Technical Teachers Training & Research  
सैक्टर/Sector 26, चण्डीगढ़/Chandigarh



**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH  
SECTOR 26, CHANDIGARH  
RECEIPTS AND PAYMENTS ACCOUNT FOR THE YEAR ENDED 31.3.2020  
FOR THE PROJECTS SPONSORED BY GOVT. OF INDIA, MHRD.**

RECEIPTS	Rs. In Lakhs	
	CURRENT YEAR	PREVIOUS YEAR
Opening Balance	0.55	0.53
Less : Prior period Intt. Accrued	-	-
Advance given received		
Interest receipt	0.02	0.02
<b>Total Receipts</b>	<b>0.57</b>	<b>0.55</b>
<b>PAYMENTS</b>		
Equipments	-	-
<b>Recurring Expenses</b>		
Establishment expenses	0.00	-
Contingencies/Consumables	0.00	-
T.A.	0.00	-
Honorarium	-	-
Advance Payment	-	-
<b>Total</b>	<b>0.00</b>	<b>0.00</b>
<b>Cash &amp; Bank Balance :-</b>		
Deposits (including interest accrued)	-	-
Cash and Bank Balance	0.57	0.55
<b>Total payments</b>	<b>0.57</b>	<b>0.55</b>



*Rsm*

**Accounts Officer  
NITTR, Chandigarh  
Accounts Officer**

National Institute of Technical Teachers'  
Training and Research  
Sector-26, Chandigarh-160 019

*[Signature]*

**Director,  
NITTR, Chandigarh**

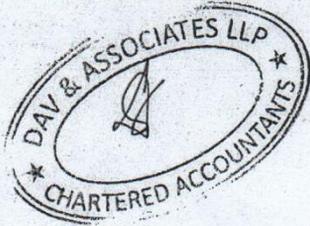
निदेशक/Director

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**NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH  
SECTOR -26, CHANDIGARH  
INCOME & EXPENDITURE ACCOUNT FOR THE YEAR ENDED 31.3.2020  
FOR THE PROJECTS SPONSORED BY THE MHRD, GOVT OF INDIA.**

Rs. In Lakhs

INCOME	CURRENT YEAR	PREVIOUS YEAR
	Grant/subsidies From Government of India	-
Interest receipts	0.02	0.02
<b>Total</b>	<b>0.02</b>	<b>0.02</b>
<b>EXPENDITURE</b>		
Establishment Expenses	-	-
Contingencies /Consumables	-	-
T.A.	-	-
Honorarium	-	-
Depreciation	1.19	1.30
<b>Total</b>	<b>1.19</b>	<b>1.30</b>
<b>Balance being deficit carried over</b>	<b>-1.17</b>	<b>-1.28</b>



*Rsw*

**Accounts Officer  
NITTTR, Chandigarh**

*[Signature]*

**Director,  
NITTTR, Chandigarh**

**Accounts Officer**  
National Institute of Technical Teachers Training and Research  
Sector-26, Chandigarh-160 019

निदेशक/Director

राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान  
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NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH, CHANDIGARH  
FIXED ASSETS UNDER GOI PROJECTS AS AT 31.3.2020

FIXED ASSETS- NET BLOCK AS PER SCHEDULE -4-A

Rs. In Lakhs

PARTICULARS	Rate %	GROSS BLOCK				DEPRECIATION			NET BLOCK		
		Cost/evaluation as at beginning of the year	Additions before 30.9.2019	Additions after 30.9.2019	Deductions during the year	cost/value at the year end	As at the beginning of the year	On Additions of the year	Total at the year end	As at the current year end	As at the previous year end
<b>Fixed Assets</b>											
i Equipments	7.5	164.49	-	-	-	164.49	148.80	1.18	149.98	14.51	15.69
ii Furniture	7.5	0.99	-	-	-	0.99	0.80	0.01	0.82	0.17	0.19
ii Books	10	0.21	-	-	-	0.21	0.21	-	0.21	-	-
Gifted equipment	7.5	0.07	-	-	-	0.07	0.07	-	0.07	-	-
<b>Grand Total</b>		<b>165.76</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>165.76</b>	<b>149.88</b>	<b>1.19</b>	<b>151.07</b>	<b>14.69</b>	<b>15.88</b>



Accounts Officer  
NITTR, Chandigarh

Director  
NITTR, Chandigarh

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Sector-26, Chandigarh-160 019

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भारतीय लेखापरीक्षा तथा लेखा विभाग  
कार्यालय प्रधान निदेशक लेखापरीक्षा (केन्द्रीय), चण्डीगढ़  
Indian Audit & Accounts Department  
Office of The Principal Director of Audit (Central),  
Chandigarh



म०/No: पी.डी.ए. (सी)/के. व्यय/SAR NITTTR Chd./ 2019-20/ 1933

दि०/Dated: 24-12-2020

सेवा मे,

सचिव,  
शिक्षा विभाग,  
मानव संसाधन विकास मंत्रालय,  
भारत सरकार  
नई दिल्ली - 110001

विषय: **National Institute of Technical Teachers Training and Research, Chandigarh**  
के वर्ष 2019-20 के लेखाओं पर पृथक लेखापरीक्षा प्रतिवेदन

महोदय,

कृपया National Institute of Technical Teachers Training and Research, Chandigarh के वर्ष 2019-20 के लेखाओं पर पृथक लेखापरीक्षा प्रतिवेदन (Separate Audit Report) संसद के दोनों सदनों के समक्ष प्रस्तुत करने हेतु सलग्न पायें। संसद में प्रस्तुत होने तक प्रतिवेदन को गोपनीय रखा जाए।

संसद में प्रस्तुत करने के उपरांत प्रतिवेदन की पांच प्रतियाँ इस कार्यालय को भी भेज दी जाएँ।

कृपया इस पत्र की पावती भेजें।

भवदीय,

संलग्न: उपरोक्त अनुसार

(हस्ता)   
प्रधान निदेशक

उपरोक्त की प्रतिलिपी वर्ष 2019-20 की पृथक लेखापरीक्षा प्रतिवेदन की प्रति सहित आवश्यक कार्यवाही हेतु निदेशक, National Institute of Technical Teachers Training and Research, Sector 26, Chandigarh को प्रेषित की जाती है।

भवदीया,

उप निदेशक (केन्द्रीय व्यय)

Separate Audit Report of the Comptroller & Auditor General of India on the Accounts of the National Institute of Technical Teachers Training and Research, Chandigarh for the year ended 31 March 2020

We have audited the Balance Sheet of the National Institute of Technical Teachers Training and Research, Chandigarh as on 31 March 2020, Income & Expenditure Account and Receipts & Payments Account for the year ended on that date under Section 20 (1) of the Comptroller & Auditor General's (Duties, Powers & Conditions of Service) Act, 1971. The audit has been re-entrusted for a period of five years from 2018-19 to 2022-23. These financial statements are the responsibility of the Institute's management. Our responsibility is to express an opinion on these financial statements based on our audit.

2. This Separate Audit Report contains the comments of the Comptroller & Auditor General of India (CAG) on the accounting treatment only with regard to classification, conformity with the best accounting practices, accounting standards and disclosure norms, etc. Audit observations on financial transactions with regard to compliance with the Law, Rules & Regulations (Propriety and Regularity) and Efficiency-cum-Performance aspects, etc., if any, are reported through Inspection Reports/ CAG's Audit Reports, separately.

3. We have conducted our audit in accordance with auditing standards generally accepted in India. These standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatements. An audit includes examining, on a test check basis, evidences supporting the amounts and disclosure in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of financial statements. We believe that our audit provides a reasonable basis for our opinion.

4. Based on our audit, we report that

i) We have obtained all the information and explanations, which to the best of our knowledge and belief were necessary for the purpose of our audit;

ii) The Balance Sheet and Income and Expenditure Account/Receipts and Payments Account dealt with by this Report have been drawn up in the format prescribed by the

Ministry of Human Resources Development, Government of India vide order No. 29-4/2012-FD dated 17 April 2015.

iii) In our opinion, proper books of accounts and other relevant record have been maintained by the National Institute of Technical Teachers Training and Research, Chandigarh, as required under Clause 19 (a) of the Memorandum of Association of the Institute, in so far as it appears from our examination of such books.

iv) We further report that:

**A. Receipt and Payment Account**

Grant received from Government of India ₹ 4888.30 lakh wrongly includes unutilised grant and opening grants of Object Head 31 and 36 amounting ₹ 719.05 lakh (₹624.32 + ₹ 9.30 lakh + ₹ 85.43 lakh). Similarly, "Payment against Sponsored Project/ Scheme" shown in Payments side as per Annexure 13 also include unutilised grants on account of OH 31 and OH 36 amounting ₹ 719.05 lakh (₹ 763.62 lakh + (-) ₹ 44.57 lakh). This has resulted in overstatement of Receipts as well as Payments by ₹ 719.05 lakh each.

**B. General**

**B.1** As per the Format of Accounts prescribed by the Ministry of Human Resource Development (MHRD), 100 *per cent* depreciation has to be provided in respect of Small Value Assets. However, no such accounting policy regarding Small Value Assets has been formulated by the Institute.

**B.2** As per the Format of Accounts prescribed by the Ministry of Human Resource Development (MHRD), Government of India and AS-15 of ICAI, provision for retirement benefits is to be made on Actuarial Valuation Method. However, as per Significant Accounting Policy at Sl. No. 8, the Institute is making the provision of employee benefits such as Leave Encashment and Gratuity on estimation basis, which is in contravention of AS-15 and prescribed Format of Accounts.

**B.3** Significant Accounting Policy at Sl. no. 3 states that depreciation on fixed assets has been provided on Straight Line Method on the rates specified as per Formats of Financial Statements for Central Higher Educational Institutions of India. However, in Schedule 4 depreciation has been charged on Written Down Value method, instead of Straight Line Method, resulting in non-compliance of the prescribed format.

#### **B.4 Overstatement of fixed assets and inventory**

As per MHRD instructions and guidelines, compliance of the Accounting Standards is mandatory for the institutions of higher education. According to Accounting Standard 10 related to Property, Plant and Equipment, items of property, plant and equipment retired from active use and held for disposal should be stated at the lower of their carrying amount and net realisable value. Any write-down in this regard should be recognised immediately in the statement of profit and loss.

The Board of Governors of the Institute, approved to declare fixed assets having value of ₹ 135.20 lakh (₹ 37.18 lakh on 29.03.2019 and ₹ 98.02 lakh on 13.02.2020) as obsolete.

No disposal was made by the Institute of the aforesaid item till 31.03.2020. In contravention to the Accounting Standard-10 and instructions contained in the prescribed format, the Institute has neither evaluated nor written-down the value of these unserviceable fixed assets.

#### **B.5 Cash and Bank Balances**

(i) The Institute maintains a single cash book for five different saving bank accounts (maintained with Axis bank, Indus Ind Bank, State Bank of India, ICICI bank and OBC). Thus, the balance held in each of these bank accounts as on 31.03.2020 was not casted. The Institute is also preparing a consolidated Bank Reconciliation Statement (BRS) in respect of six bank accounts (Canara Bank, Axis bank, Indus Ind Bank, State Bank of India, ICICI bank and OBC). Instead, Institute should have maintained separate cash book and separate BRS for each bank account. In view of this, the balance held in each of these individual bank accounts could not be verified.

(ii) The Consolidated bank reconciliation statement contains very old transactions pertaining to previous years 2015-16 to 2018-19 including Bank credits ₹ 19,53,312.04/- Autosweep Credits ₹ 20,44,59,386/-, interest credit ₹ 4,50,268/- and Autosweep debits ₹ 29.00 crore. Sweep Account transactions and bank interest could have been eliminated from BRS by making appropriate accounting entries.

(iii) Canara bank in its certificate of interest paid on deposits for the year 2019-20 has paid an interest of ₹ 14.43 lakh in respect of Savings deposit and three general deposits (i.e. FDRs vide Account No. 2452401002104, 2452401002115 and 2452401002154). Records and details relating to two General Deposits (Account Nos. 2452401002115 and

2452401002154) have not been shown. No entries in respect of aforesaid deposits was found in the FDR registers. Therefore, these could not be verified.

**B.6 Advances & Other Amounts recoverable in cash or in kind or for value to be received On Capital account: ₹ 225.91 lakh**

Above includes ₹ 13.85 lakh on account of balance of deposit held with CPWD. As per the “Schedule of Deposit works” of CPWD for the months of March 2019 and June 2020, the said balance of deposit was ₹ 11.47 lakh. Thus, there was a difference of ₹ 2.38 lakh between the balances shown by the Institute and the CPWD. The same needs to be reconciled and necessary adjustment entries should be made in the accounts.

**B.7 GPF/CPF Fund: ₹ 23.60 crore**  
**Subsidiary accounts**  
**Receipts and Payments Account GPF/CPF**  
**Closing Balance: ₹ 22.57 crore**

The closing balance of Investments and Cash at Bank as per Main Balance Sheet, Balance Sheet GPF/CPF and Cash Book of GPF/CPF maintained by the Institute was ₹ 22.67 crore, against the balance of ₹ 22.57 crore shown above. The difference of ₹ 0.10 crore needs to be reconciled.

**B.8 NPS Balance Sheet**

In the subsidiary accounts presented along with the Annual Accounts, the Institute has shown an opening balance of (-) ₹ 3.21 lakh which is being carried forward since the year 2015-16 due to non-adjustment of subscription paid in the ledger. The figures need to be reconciled and adjusted accordingly.

**C. Grant-in-aid**

The position of grant-in-aid during the year 2019-20 was as detailed below:-

Particulars	Amount in ₹ crore			
	OH-31	OH-35	OH-36	Total
Opening balance	0.85	3.20 <sup>1</sup>	0.09	4.14
Add: Grant Received during the year	10.30	3.30	28.00	41.60
<b>Total Funds Available</b>	<b>11.15</b>	<b>6.50</b>	<b>28.09</b>	<b>45.74</b>
Less: Utilisation during the year	11.15	2.53	20.45	34.13
Unutilised balance at the end of the year	Nil	3.97	7.64	11.61 <sup>v</sup>

<sup>1</sup> including capital advances of ₹ 2.61 crore

<sup>v</sup> Balance as per Schedule 3 is ₹ 11.16 crore, which does not include amount of ₹ 0.45 crore to be met from IRG as commented at Sl. no. A.1.1.

**D. Management Letter**

Deficiencies which have not been included in the Audit Report have been brought to the notice of the Management, through a management letter issued separately for remedial corrective action.

v) Subject to our observations in the preceding paragraphs, we report that the Balance Sheet, Income & Expenditure Account and Receipts & Payments Account dealt with by this report are in agreement with the books of accounts.

vi) In our opinion and to the best of our information and according to the explanations given to us, the said financial statements read together with the Accounting Policies and Notes on Accounts, and subject to the significant matters stated above and other matters mentioned in Annexure to this Audit Report give a true and fair view in conformity with accounting principles generally accepted in India:

- a. In so far as it relates to the Balance Sheet, of the state of affairs of the National Institute of Technical Teachers Training and Research, Chandigarh as at 31<sup>st</sup> March 2020; and
- b. In so far as it relates to Income & Expenditure Account, of the deficit for the year ended on that date.

**For and on behalf of the C & AG of India**



**Principal Director of Audit (Central), Chandigarh**

**Place: Chandigarh**

**Date: 24/12/20**

## Annexure to Audit Report

### 1. Adequacy of Internal Audit System:

The Institute has established an Internal Audit Wing headed by an independent Internal Auditor, reporting directly to the Director. Internal audit wing had conducted audit of the Institute during 2019-20 as per approved programme and submitted its reports to the Director.

### 2. Adequacy of Internal Control System:

Internal Control system was found to be inadequate to the extent that:

- i. The Institute is maintaining single cash book for five different saving bank accounts. Institute is also preparing consolidated Bank Reconciliation Statement (BRS) in respect of six bank accounts. Institute should have prepared separate BRS for each bank account.
- ii. The Institute has kept funds relating to Government Grants and one particular sponsored project in a single bank account.
- iii. Assets found unserviceable, condemned and disposed as per the previous years physical verifications were not written-off from the accounts.

### 3. System of Physical verification of Fixed Assets

Physical Verification of Fixed Assets for the year 2019-20 was under-progress.

### 4. System of Physical Verification of Inventory

Physical verification of inventory for the year 2019-20 was under-progress.

### 5. Regularity in payment of statutory dues

No irregularity was noticed in this regard.

  
Dy. Director

**“ Partnering builds Strength  
Networking creates Wealth  
Empowering leads Progress ”**

**“ United we Perform  
Together we Achieve  
Team we Win ”**

**Prof. S S Pattnaik  
Director  
NITTTR Chandigarh**





# **PARTNERING, NETWORKING, DIGITIZING & EMPOWERING FOR QUALITY TECHNICAL EDUCATION**

**NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING AND RESEARCH  
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( An ISO 9001 : 2015 Certified Institute )

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