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सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory

अंतरिक्ष विभाग, भारत सरकार
Department of Space, Government of India

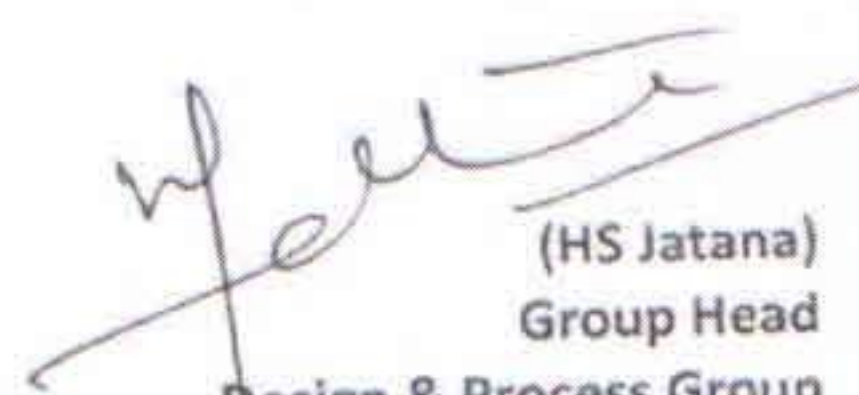
सेक्टर-72, सा. अ. सि. नगर - 160071
Sector 72, S.A.S. Nagar - 160 071
(चण्डीगढ़ के समीप) पंजाब, भारत
(Near Chandigarh) Punjab, India
फोन / PHONE : 0172-2237401-09
फैक्स / Fax : 0172

HS Jatana,
Sci/Engr 'SG'

Dated 13th July 2016

CERTIFICATE

This is certify that **Mr. Satyam Shukla** of **G. N. E. college** has done his thesis work at SCL from 23rd Nov 2015 to 13th July 2016. During this period, he has completed the project work title 'Impact of radiation on CMOC voltage Controlled Oscillator'. His performance has been outstanding. I wish him all success in future endeavours.


(HS Jatana)
Group Head
Design & Process Group
एच.एस. जटाना/H.S. Jatana
ग्रुप प्रमुख/Group Head
डिजाइन एवं प्रक्रिया समूह
Design & Process Group
सेमी-कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
अंतरिक्ष विभाग, भारत सरकार
Deptt. of Space, Government of India
सेक्टर-72, सा.अ.सि. नगर-160071
Sector-72, S.A.S. Nagar-160071

TITLE: Workshop on VLSI Design (foundation course)**Place: GNDEC Ludhiana, ECE Dept****Date: 14th-15th October, 2015.**

Objective: To incite passion amongst participants to take career in most exciting field of engineering – Space Technology and Microelectronics. In this brief course, some glimpses of space technology and foundation course on Integrated Circuit Design is planned.

Instructors: Sh HS Jatana, Sci/Engr 'G'; Group Director – Design & Process Group, SCL / ISRO, DoS

Sh Munish Malik, Sci/Engr 'E' Design & Process Group / VDD

Schedule:

DAY 1 (14 th October, 2015)				
Sr. No	TOPIC	Instructor	Contents	Start Time
LECT1	Space and Avionics	HSJ	Brief about ISRO, Space technology, satellites and launch Vehicles, use of microelectronics in space	11:00AM
LECT2	VLSI Industry Overview	HSJ	Semiconductor market, process attributes, trends and issues, challenges in VLSI	12:00 Noon
BRK1	Lunch	Light food only around 45 mins break		
			01:00PM	
LECT3	Foundations of analog design - I	HSJ	Non linear circuits, small signal analysis	01:45PM
LECT4	Foundations of analog design - II	HSJ	2-port NL network, y-parameters,	02:45PM
BRK2	Tea	Brief break of 15 mins		
			03:45PM	
LECT5	Foundations of analog design - III	HSJ	Amplifier basics, maximum intrinsic gain achievable, characteristics	4:00PM
BRK	Closing at 5:00PM or based on participants convenience.			
	<i>Participants staying in College campus are free to interact, raise queries with us in the evenings/during dinner.</i>			
DAY 2 (15 th October, 2015)				

LECT6	CMOS Analog Design – I	HSJ	Single Tx configuration, CS, small signal and large signal analysis	9:00AM
LECT7	CMOS Analog Design –II	HSJ	Finding swing limits, gain stability	10:00AM
BRK1	Tea	Break for 15 Mins 11:00AM		
LECT8	CMOS Analog design –III	HSJ	Frequency response analysis, effect of poles and zeroes	11:15AM
LECT9	CMOS Analog design – IV	HSJ	Controlled sources, Design of Voltage Buffer, small signal and large signal analysis	12:15PM
BRK2	Light Lunch	1:00 - 1:45PM		
LECT10	Analog Simulations – I	MM	Analog Simulations, simulations of CS stage with Resistive load	1:45PM
LECT 11	Analog Simulations – II	MM	Analysis with active load, gain maximization, frequency response depiction through simulations	2:45PM
BRK3	Tea	15 mins break 3:45PM		
LECT12	Analog Simulations – III	MM	Voltage buffer, circuit and its analysis	4:00PM
LECT13	Analog Simulations – IV	MM	Test case as an example	4:45PM
BRK	Windup at 5:30PM or based on participants convenience			

Note:

1. Each lecture to be around one hour duration.
2. Multimedia and white board is required.
3. Soft copy of material would be provided by instructors.
4. Emphasis on learning design concepts and fundamentals in this course.
5. Participants and organizers are requested to provide feedback on this course.







FEEDBACK ANALYSIS

Event: Short Term Course- 'Workshop on VLSI Design

Place: GNDEC Ludhiana

Speaker: H S Jatana, Sci 'G'; GD - DPG, SCL/ Dept of Space (hjatana@yahoo.com)

Date 14th-15th Oct, 2015

No. of Participants - 55

S. No.	Parameter	Outstanding		V. Good		Good		Fair		Poor	
		No. of Participants	%age	No. of Participants	%age	No. of Participants	%age	No. of Participants	%age	No. of Participants	%age
1	Choice of Subject/Topic	22	40%	28	51%	5	9%	0	0%	0	0%
2	Presentation content	25	45%	24	44%	5	9%	1	2%	0	0%
3	Depth of subject knowledge	44	80%	11	20%	0	0%	0	0%	0	0%
4	Communication skills / Interaction with audience	41	75%	12	22%	2	3%	0	0%	0	0%
5	Quality of presentation material	24	44%	27	49%	4	7%	0	0%	0	0%
6	Usefulness/ Relevance of subject to you	25	45%	23	42%	6	11%	1	2%	0	0%

Rating of the talk given by participants: 94 (Avg.) out of 100 Marks

Comments given by the Participants:

- Very Informative sessions.
- Very Knowledgeable lectures.
- Such an expert talk is surely a stepping stone to the field of VLSI Design.

Shas
(Workshop coordinator)

Speaker: **Munish Malik, Sci/Engr É' SCL / Dept of Space**

Date **14th-15th Oct, 2015**

No. of Participants - 55

S. No.	Parameter	Outstanding		V. Good		Good		Fair		Poor	
		No. of Participants	%age	No. of Participants	%age	No. of Participants	%age	No. of Participants	%age	No. of Participants	%age
1	Choice of Subject/Topic	13	24%	32	58%	9	16%	1	2%	0	0%
2	Presentation content	15	27%	28	51%	11	20%	1	2%	0	0%
3	Depth of subject knowledge	12	22%	32	58%	10	18%	1	2%	0	0%
4	Communication skills / Interaction with audience	10	18%	27	49%	17	31%	1	2%	0	0%
5	Quality of presentation material	15	27%	29	53%	10	18%	1	2%	0	0%
6	Usefulness/ Relevance of subject to you	17	31%	30	54%	7	13%	1	2%	0	0%

Rating of the talk given by participants: **87 (Avg.)** out of 100 Marks

Ahan
(Workshop coordinator)

Certificate

This is to certify that Jaspreet Singh, 4th year students of the Department of Electronics and Communication Engineering, Guru Nanak Dev Engineering College, Ludhiana have successfully completed their 6 months internship (from July, 2016 to Dec, 2016) at Semi-Conductor Laboratory, Department of Space, Government of India, Mohali and have submitted their report on Ethernet Controller Design.

Guided By:


Rajat Atri

Headed By:


11/12/16

H. S. Jattana

(Group Head, DPG)

मुख.प्रम. जटाना/H.S. Jattana
ग्रुप प्रमुख/Group Head
डिजाइन एवं प्रोसेस समूह
Design & Process Group
सेमी-संयोजक प्रयोगशाला
Semi-Conductor Laboratory
अंतरिक्ष विभाग, भारत सरकार
Dept. of Space, Government of India
ब्लॉक-72, एन.ए.डी. नगर-150071
Sector-72, S.A.S. Nagar-150071

31 May 2017

Training and Placement Officer

GNDEC, LUDHIANA

Sub: Industrial Training (Provisional Certificate)

Dear Sir/Madam,

This is to certify that PUNEET SAINI student of your Institute is undergoing Industrial Training in our Network Department from 04 Jan 2017 to 30 Jun 2017.

This Internship Training is on non-stipendiary basis and the intern is reporting to Mr. PAWAN KUMAR.

This is a provisional certificate.

Training Completion Certificate shall be issued upon completion of internship.

For Quadrant Televentures Limited

This document is system generated, therefore does not require any signature.

QUADRANT TELEVENTURES LIMITED
Corporate Identification Number : L00000MH1946PLC197474
Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India
Tel : +91-172-5090000 Fax : +91-172-5090125
Regd. Office : Autocare Compound, Adalat Road, Aurangabad - 431005(Maharashtra) India
Tel : +91-240-2320754, www.connectzone.in

31 May 2017

Training and Placement Officer

GNDEC, LUDHIANA

Sub: Industrial Training (Provisional Certificate)

Dear Sir/Madam,

This is to certify that RAGHAV WAHI student of your institute is undergoing Industrial Training in our Network Department from 04 Jan 2017 to 30 Jun 2017.

This Internship Training is on non-stipendary basis and the intern is reporting to Mr. PAWAN KUMAR.

This is a provisional certificate.

Training Completion Certificate shall be issued upon completion of internship.

For Quadrant Televentures Limited



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Tel : +91-240-2320754, www.connectzone.in

31 May 2017

Training and Placement Officer

GNDEC, LUDHIANA

Sub: Industrial Training (Provisional Certificate)

Dear Sir/Madam,

This is to certify that RAHUL RAI student of your Institute is undergoing Industrial Training in our Network Department from 04 Jan 2017 to 30 Jun 2017.

This Internship Training is on non-stipendary basis and the intern is reporting to Mr. PAWAN KUMAR

This is a provisional certificate.

Training Completion Certificate shall be issued upon completion of internship.

For Quadrant Televentures Limited



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सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
Department of Space, Government of India
अंतरिक्ष विभाग, भारत सरकार

SCL-HRDD, 8002:1617:01
June 29, 2017

सेक्टर-72, सा. अ. नि. नगर - 160071
Sector 72, S.A.S. Nagar -160 071
(चण्डीगढ़ के समीप) पंजाब, भारत
(Near Chandigarh) Punjab, India
टेलीफोन/Phone : (0172)-229-6000, 6100, 6200, 6300, 6400
फैक्स/Fax : 0172-2237410
वेबसाइट / Website : www.scl.gov.in

CERTIFICATE

This is to certify that Mr. Pulkit Jain (Roll No. 1508517), M.Tech-
Electronics and Communication Engineering student of Guru Nanak
Dev Engineering College, Ludhiana has completed his Project Work
successfully, as part of his M.Tech curriculum, on the topic of "HDL
Implementation and ASIC Design of 4096-Point Radix-2 FFT in
0.18 μ m CMOS Technology" from January 20, 2017 to June 29, 2017
at Semi-Conductor Laboratory.


29/06/17

Sanjay Bhatnagar
Group Head
Project Planning Group

ग्रुप प्रमुख-परियोजना नियोजन ग्रुप
Group Head-Project Planning Group
सेमी-कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
अंतरिक्ष विभाग, भारत सरकार
Department of Space, Government of India

Internship Confirmation Letter

ARSHIYA DHINGRA,
GNDEC, LUDHIANA,

Sub: Industrial Training.

Dear ARSHIYA DHINGRA,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 01 Jul 2017 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- You Internship shall be on non-stipendiary basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

6th Floor Surya Towers The Mall,
Ludhiana-141001,
Phone No :- +91-161-5010083 / 5010106

You are advised to bring One Copy of this Letter along with your Passport size Color Photograph at the time of your reporting for Internship Commencement.

With all best wishes,
For Quadrant Televentures Limited,
CC: Training and Placement Officer

QUADRANT TELEVENTURES LIMITED
Corporate Identification Number : L00000MH1946PLC197474
Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India
Tel : +91-172-5090000 Fax : +91-172-5090125
Regd. Office : Autocars Compound, Adalat Road, Aurangabad - 431005(Maharashtra) India
Tel : +91-240-2320754, www.connectzone.in

8

Internship Confirmation Letter

Jagveer Singh,
Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Jagveer Singh,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,
B-71 Industrial Area Phase-7,
Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

**Kindly send your acceptance via mail by 18th Jan 18 to mail
id neelakshi.sood@infotelconnect.com**

With all best wishes,

Neelakshi Sood
Human Resources
Quadrant Televentures Ltd
+91 9653019704

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Internship Confirmation Letter

Jaskaran Singh,

Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Jaskaran Singh,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,

B-71 Industrial Area Phase-7, Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

Internship Confirmation Letter

Jatinder Singh,
Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Jatinder Singh,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
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- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,
B-71 Industrial Area Phase-7,
Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

**Kindly send your acceptance via mail by 18th Jan 2018 to mail
id neelakshi.sood@infotelconnect.com**

With all best wishes,

Neelakshi Sood
Human Resources
Quadrant Televentures Ltd
+91 9653019704

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Internship Confirmation Letter

Shubham Yadav,
Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Shubham Yadav,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 25th Jan 2018 to 20th July 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,
B-71 Industrial Area Phase-7,
Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

Kindly send your acceptance via mail by 24th Jan 2018 to mail
id neelakshi.sood@infotelconnect.com

With all best wishes,

Neelakshi Sood
Human Resources
Quadrant Televentures Ltd
+91 9653019704

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Internship Confirmation Letter

Taranjot Singh,
Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Taranjot Singh,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 25th Jan 2018 to 20th July 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

**Quadrant Televentures Ltd,
B-71 Industrial Area Phase-7,
Mohali**

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

**Kindly send your acceptance via mail by 24th Jan 2018 to mail
id neelakshi.sood@infotelconnect.com**

With all best wishes,

Neelakshi Sood
Human Resources
Quadrant Televentures Ltd
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Internship Confirmation Letter

Pankaj,
Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Pankaj,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 25th Jan 2018 to 20th July 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

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Quadrant Televentures Ltd,
B-71 Industrial Area Phase-7,
Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

Kindly send your acceptance via mail by 24th Jan 2018 to mail
id neelakshi.sood@infotelconnect.com

With all best wishes,

Neelakshi Sood
Human Resources
Quadrant Televentures Ltd
+91 9653019704

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Internship Confirmation Letter

Simran Hallan,
Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Simran Hallan,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,
B-71 Industrial Area Phase-7,
Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

Kindly send your acceptance via mail by 18th Jan 2018 to mail id neelakshi.sood@infotelconnect.com

With all best wishes,

Neelakshi Sood
Human Resources
Quadrant Televentures Ltd
+91 9653019704

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Internship Confirmation Letter

Prasant Chaudhary

Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Prasant Chaudhary,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,

B-71 Industrial Area Phase-7,

Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.
With all best wishes,

Neelakshi Sood

Human Resources

Quadrant Televentures Ltd

+91 9653019704

Internship Confirmation Letter

Raman Lal ,

Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Raman Lal,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 25th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,

B-71 Industrial Area Phase-7,

Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

With all best wishes,

Neelakshi Sood

Human Resources

Quadrant Televentures Ltd

+91 9653019704

Internship Confirmation Letter

Satish Kumar ,

Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Satish Kumar,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

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- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,

B-71 Industrial Area Phase-7,

Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

With all best wishes,

Neelakshi Sood

Human Resources

Quadrant Televentures Ltd

+91 9653019704

Internship Confirmation Letter

Shubham Shanti ,

Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Shubham Shanti,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,

B-71 Industrial Area Phase-7,

Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

With all best wishes,

Neelakshi Sood

Human Resources

Quadrant Televentures Ltd

+91 9653019704

Internship Confirmation Letter

Yashita Ratra,

Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Yashita Ratra,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 19th Jan 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- Your Internship shall be on non-stipend basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

Quadrant Televentures Ltd,

B-71 Industrial Area Phase-7,

Mohali

You are advised to bring One Copy of this Letter along with your Stamp size Color Photograph at the time of your reporting for Internship Commencement.

With all best wishes,

Neelakshi Sood

Human Resources

Quadrant Televentures Ltd

+91 9653019704

Internship Confirmation Letter*

Baljot Kaur,

Guru Nanak Dev Engineering College, Ludhiana,

Sub: Industrial Training.

Dear Baljot Kaur,

- > With reference to your request for Internship Training in our organization
- > as a part of your curriculum, we are pleased to inform you that your
- > application has been accepted. Your Internship shall start from 25th Jan
- > 2018 to 20th July 2018 subject to your agreement to abide by the rules &
- > regulations of the Organization.

>

>

>

> Please Note:

Your Internship shall be on non-stipend basis

You shall not be eligible for any allowance and benefit

- > applicable to the regular employees of the organization.

>

- > You are required to maintain the norms of discipline and work
- > practice of the company while undergoing Internship Training.

>

- > You are required to maintain minimum of 70% Attendance during
- > the period of your Internship.

- > You need to report to the HR Department for the commencement of your
- > Internship at the following address:

> *Quadrant Televentures Ltd,*

> *B-71 Industrial Area Phase-7

> <<https://maps.google.com/?q=71+Industrial+Area+Phase-7&entry=gmail&source=g>>,*

>

> *Mohali *

- > You are advised to bring One Copy of this Letter along with your Stamp
- > size Color Photograph at the time of your reporting for Internship
- > Commencement.



सेमी - कंडक्टर लेबोरेटरी Semi-Conductor Laboratory

Department of Space, Government of India
अंतरिक्ष विभाग, भारत सरकार

SCL:HRDD:8001:2018:01
December 20, 2018

सेक्टर - 72, सा. अ. सि. नगर - 160071
Sector 72, S.A.S. Nagar - 160 071
(चण्डीगढ़ के समीप) पंजाब, भारत
(Near Chandigarh) Punjab, India
टेलीफोन / Phone : (0172)-229-6000, 6100, 6200, 6300, 6400
फैक्स / Fax : 0172- 2237410
वेबसाइट / Website : www.scl.gov.in

CERTIFICATE

This is to certify that Mr. Amit Kumar (Roll No.1507798), B.Tech. Electronics & Communication Engineering student of Guru Nanak Dev Engineering College, Ludhiana has completed his Internship Training successfully, as part of his B.Tech. curriculum, on the topic of "Design and Development of Internet-Security Gate Switch" from July 05, 2018 to December 20, 2018 at Semi-Conductor Laboratory.

Sanjay Bhatnagar
20/12/18
Sanjay Bhatnagar
Group Head
Project Planning Group

ग्रुप प्रमुख-परियोजना नियोजन ग्रुप
Group Head-Project Planning Group
सेमी-कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
अंतरिक्ष विभाग, भारत सरकार
Department of Space, Government of India

14 Dec 2018

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that AMRITPAL SINGH student of your Institute has undergone Industrial Training in our Network Department from 04 Jun 2018 to 30 Nov 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited



QUADRANT TELEVENTURES LIMITED
Corporate Identification Number : L00000MH1946PLC197474
Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India.
Tel : +91-172-5090000 Fax : +91-172-5090125
Regd. Office : Autocars Compound, Adalat Road, Aurangabad - 431005(Maharashtra) India.
Tel : +91-240-2320754 www.connectzone.in



14 Dec 2018

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that HANINDER SINGH student of your Institute has undergone Industrial Training in our Network Department from 04 Jun 2018 to 30 Nov 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

A handwritten signature in dark ink, appearing to be "J. Singh", is written over a faint, circular purple stamp.

QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

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Tel : +91-240-2320754. www.connectzone.in

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that HARAMPREET SINGH student of your Institute has undergone Industrial Training in our Network Department from 04 Jun 2018 to 30 Nov 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited



QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

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Tel : +91-240-2320754, www.connectzone.in

25 Jan 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that HEMANT KUMAR TIWARI student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

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Tel : +91-240-2320754. www.connectzone.in

25 Jan 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that GHANSHYAM student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



QUADRANT TELEVENTURES LIMITED

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Tel : +91-240-2320754, www.connectzone.in



04 Feb 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that AMIT SINGH DHANOA student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

A handwritten signature in black ink, appearing to be "J. Singh", is written over the text "For Quadrant Televentures Limited".

QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

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05 Feb 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that ABHISHEK KUMAR student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

A handwritten signature in blue ink, appearing to be "Anurag", is written over a faint, circular official stamp.

QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India.

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Tel : +91-240-2320754, www.connectzone.in



25 Jan 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that AKHILESH KUMAR student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

A handwritten signature in blue ink, appearing to be "Anurag Singh", is written over a red circular stamp.

QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India.

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Tel : +91-240-2320754, www.connectzone.in

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04 Feb 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that ANKIT KUMAR student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

A handwritten signature in blue ink, appearing to read "J. Singh", is written over a horizontal line.

QUADRANT TELEVENTURES LIMITED

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Tel : +91-240-2320754, www.connectzone.in



25 Jan 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Industrial Training (Completion Certificate)

Dear Sir/Madam,

This is to certify that MANISH KUMAR student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

A handwritten signature in blue ink, appearing to be "J. Singh", is written over a faint purple circular stamp.

QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

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Tel : +91-240-2320754, www.connectzone.in

To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that SWAPNIL VERMA student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

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Tel : +91-240-2320754, www.connectzone.in

To Whom It May Concern

13 May 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that JASMEET SINGH SAINI student of your Institute has undergone Industrial Training in our Network Department from 18 Jul 2018 to 31 Dec 2018.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



QUADRANT TELEVENTURES LIMITED

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Tel : +91-240-2320754, www.connectzone.in

Internship Confirmation Letter

PARGAT SINGH,
GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA,

Sub: Industrial Training.

Dear PARGAT SINGH,

With reference to your request for Internship Training in our organization as a part of your curriculum, we are pleased to inform you that your application has been accepted. Your Internship shall start from 18 Jul 2018 subject to your agreement to abide by the rules & regulations of the Organization.

Please Note:

- You Internship shall be on non-stipendiary basis
- You shall not be eligible for any allowance and benefit applicable to the regular employees of the organization.
- You are required to maintain the norms of discipline and work practice of the company while undergoing Internship Training.
- You are required to maintain minimum of 70% Attendance during the period of your Internship.

You need to report to the HR Department for the commencement of your Internship at the following address:

**6th Floor Surya Towers The Mall,
Ludhiana-141001,
Phone No :- +91-161-5010083 / 5010106**

You are advised to bring One Copy of this Letter along with your Passport size Color Photograph at the time of your reporting for Internship Commencement.

With all best wishes,
For Quadrant Televentures Limited,
CC: Training and Placement Officer

QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India.

Tel : +91-172-5090000 Fax : +91-172-5090125

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Tel : +91-240-2320754, www.connectzone.in



सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory

अंतरिक्ष विभाग, भारत सरकार

Department of Space, Government of India



सेक्टर-72, सा अ सि नगर - 160 071

Sector 72, S.A.S. Nagar - 160 071

(चण्डीगढ़ के नगीचे) पंजाब, भारत

(Near Chandigarh) Punjab, India

टेलीफोन / Phone : (0172)-229-6000, 6100, 6200, 6300, 6400

फैक्स / Fax : 0172-2237410

वेबसाइट / Website : www.scl.gov.in

SCL:HRDD:8002:Jan.2019:01
July 31, 2019

CERTIFICATE

This is to certify that Ms. Kiranjeet Kaur (Roll No. 1707227) M. Tech.—
Electronics & Communication Engineering student of Guru Nanak Dev
Engineering College, Ludhiana has completed her Project work successfully
as part of her M. Tech. curriculum, on the topic of "A Programmable
Frequency Multiplier for DLL Based Clock Generator with 417.558μW
power and 46.0533ps jitter" from January 24, 2019 to July 31, 2019 at
Semi-Conductor Laboratory.

(Ashwani Kumar Tuknayat)
Head-HRDD

अश्वनी कुमार तुक्नायत
Ashwani Kumar Tuknayat
प्रमुख-मानव संसाधन विकास विभाग
Head-Human Resource Development Division
सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
अंतरिक्ष विभाग, भारत सरकार
Dept. of Space, Government of India
सेक्टर-72, मोहली-160071 (पंजाब)
Sector-72, Mohali-160071 (Punjab)



सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
Department of Space, Government of India
अंतरिक्ष विभाग, भारत सरकार



सेक्टर-72, सा. अ. सि. नगर - 160071
Sector 72, S.A.S. Nagar -160 071
(चण्डीगढ़ के समीप) पंजाब, भारत
(Near Chandigarh) Punjab, India
टेलीफोन / Phone : (0172)-229-6000, 6100, 6200, 6300, 6400
फैक्स / Fax : 0172- 2237410
वेबसाइट / Website : www.scl.gov.in

SCL:HRDD:8001:Jan.2019:01
July 01, 2019

CERTIFICATE

This is to certify that Ms. Sameeksha Munjal (Roll No. 1707232) M. Tech. - Electronics & Communication Engineering, student of Guru Nanak Dev Engineering College, Ludhiana, Punjab, has completed her Project work successfully as part of her M. Tech. curriculum, on the topic of "Development of Memory Testing Modules for Synchronous 2MB SRAM for NI-PXIE Testing platform" from January 21, 2019 to June 28, 2019 at Semi-Conductor Laboratory.

(Ashwani Kumar Tuknayot)
Head-HRDD

अश्वनी कुमार तुक्नायत
Ashwani Kumar Tuknayot
प्रमुख-मानव संसाधन विकास विभाग
Head-Human Resource Development Division
सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
अंतरिक्ष विभाग, भारत सरकार
Dept. of Space, Government of India
सेक्टर-72, मोहा-160071 (पंजाब)
Sector-72, Mohali-160071 (Punjab)



सेमी - कंडक्टर लेबोरेटरी

Semi-Conductor Laboratory

Department of Space, Government of India

अंतरिक्ष विभाग, भारत सरकार

SCL:HRDD:8001:May2019:Prov:01

May 24, 2019

Head of Department

Electronics & Communication Engineering

Guru Nanak Dev Engineering College,

Ludhiana

सेक्टर-72, सा. अ. सि. नगर - 160071

Sector 72, S.A.S. Nagar -160 071

(चण्डीगढ़ के समीप) पंजाब, भारत

(Near Chandigarh) Punjab, India

टेलीफोन / Phone : (0172)-229-6000, 6100, 6200, 6300, 6400

फैक्स / Fax : 0172- 2237410

वेबसाइट / Website : www.scl.gov.in

Dear Sir/ Madam,

This is for your information that Ms. Parul Sharma, B. Tech student of your college having Roll No. 1607060 for internship at SCL from January 2019 to June 2019. Her internship is continuing and shall be completing by end of June 28, 2019.

Thanking You,

Ashwani
24/05/2019

(Ashwani Kumar Tuknayot)

Head-HRDD

अश्वनी कुमार तुक्नायत

Ashwani Kumar Tuknayot

प्रमुख-मानव संसाधन विकास प्रभाग

Head-Human Resource Development Division

सेमी - कंडक्टर लेबोरेटरी

Semi-Conductor Laboratory

अंतरिक्ष विभाग, भारत सरकार

Dept. of Space, Government of India

सेक्टर-72, मोहाली-160071 (पंजाब)

Sector-72, Mohali-160071 (Punjab)



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सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
Department of Space, Government of India
अंतरिक्ष विभाग, भारत सरकार



सेक्टर-72, सा. अ. सि. नगर -160071
Sector 72, S.A.S. Nagar -160 071
(चण्डीगढ़ के समीप) पंजाब, भारत
(Near Chandigarh) Punjab, India
टेलीफोन/Phone : (0172)-229-6000, 6100, 6200, 6300, 6400
फैक्स/Fax : 0172- 2237410
वेबसाइट / Website : www.scl.gov.in

SCL:HRDD:8001:Jan.2019:02
July 02, 2019

CERTIFICATE

This is to certify that Ms. Harleen Kaur (Roll. No. 1607050)
B. Tech.- Electronics & Communication Engineering student of
Guru Nanak Dev Engineering College, Ludhiana has completed her
Internship Training successfully as part of her B. Tech. curriculum,
on the topic of "Low Voltage First Order Temperature
Compensated CMOS Current Reference" from January 24, 2019
to June 28, 2019 at Semi-Conductor Laboratory.

(Ashwani Kumar Tuknayot)
Head-HRDD

अश्वनी कुमार तुक्नायत
Ashwani Kumar Tuknayot
प्रमुख-मानव संसाधन विकास विभाग
Head-Human Resource Development Division
सेमी - कंडक्टर लेबोरेटरी
Semi-Conductor Laboratory
अंतरिक्ष विभाग, भारत सरकार
Dept. of Space, Government of India
सेक्टर-72, मोहा-160071 (पंजाब)
Sector-72, Mohali-160071 (Punjab)

To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that SUKHDEEP KAUR student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India.

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Tel : +91-240-2320754, www.connectzone.in

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To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that SHUBHAM GOYAL student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

[Signature]

QUADRANT TELEVENTURES LIMITED

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To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that PRABHSIMRAAN KAUR student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.

QUADRANT TELEVENTURES LIMITED

Corporate Identification Number : L00000MH1946PLC197474

Corporate Office : B-71, Phase-VII, Industrial Focal Point, Mohali - 160055(Punjab) India

Tel : +91-172-5090000 Fax : +91-172-5090125

Regd. Office : Autocars Compound, Adalat Road, Aurangabad - 431005(Maharashtra) India

Tel : +91-240-2320754, www.connectzone.in

To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that SANCHI KAUSHIK student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



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To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that SIMRAN MALHOTRA student of your Institute has undergone Industrial Training in our Network Department from 10 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



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To Whom It May Concern

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Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that TARANPREET KAUR student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



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To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that ARTI KUMARI student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



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To Whom It May Concern

07 May 2019

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Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Provisional Letter

Dear Sir/Madam,

This is to certify that GURDEEP SINGH student of your Institute is undergoing Industrial Training in our Network Department from 21 Jan 2019 to 30 Jun 2019.

This Internship Training is on non-stipendiary basis and the intern is reporting to Ms. PREETI SOOD.

This is a provisional certificate.

Training Completion Certificate shall be issued upon completion of internship.

For Quadrant Televentures Limited.



QUADRANT TELEVENTURES LIMITED

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Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that MANJINDER KAUR student of your Institute has undergone Industrial Training in our Systems Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited,



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To Whom It May Concern

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Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that ROBIN SHARMA student of your Institute has undergone industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited



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To Whom It May Concern

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30 May 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that SANJAY KUMAR student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 28 Jun 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



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To Whom It May Concern

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30 May 2019

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that SHIVANI RANA student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 28 Jun 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited



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To Whom It May Concern

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Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that RAVNEET SINGH UBHI student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited,



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To Whom It May Concern

S3

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that CHANPREET SINGH student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited



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To Whom It May Concern

Training and Placement Officer

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

Sub: Internship Training Completion Letter

Dear Sir/Madam,

This is to certify that RAVINDERDEEP student of your Institute has undergone Industrial Training in our Network Department from 18 Jan 2019 to 14 May 2019.

His/Her conduct and performance during the training has been found to be very good.

We wish him/her all success.

For Quadrant Televentures Limited.



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COURSE OBJECTIVE

Wireless and optical communication has emerged as a principal theme in today's telecommunication industry. Innovations in optical fiber technology are revolutionizing the world communication by allowing direct transmission of high-speed signals over long distances. Optical fiber communication (OFC) has found numerous applications in Telecommunications, Local area networks, High precision material processing, Sensors, Medicine etc. It is one of the fastest growing technological markets because of relatively compact size of fiber, cost-effective, high efficiency and their stable operation. Wireless Communication is by measure, the fastest expanding segment of the communication industry. Broadband wireless access is supporting rates in excess of 100 Mbps. Subsequently this led to the development of 3G through Code Division for Multiple Access (CDMA) Orthogonal Frequency Division Multiplexing (OFDM) and Multiple Input Multiple Output (MIMO). Representatives of industries and academia have started to look into the technological developments toward the next generation (5G), as the rollout of 4G mobile communication networks takes place. This course will address the latest trends and future challenges that must be met to develop high performance systems.

COURSE CONTENTS

- Fundamentals of Wireless Communication
- Recent Advances In Wireless Communication
- Introduction to Cognitive Radio and Spectrum Sensing
- Software Defined Radio
- Intelligent Networks
- Fundamentals of Optical Communication
- WDM/DWDM Techniques & Components
- Non Linear Effects In Optical Fibers
- Optical Networks-Overview and Recent Trends
- Future in Home Optical Network using POF
- Software Tools for Research
- Visit to Videocon Telecom Limited Ludhiana

IMPORTANT DATES

Submission of Registration form by
31.05.2019

Acceptance Notification by
04.06.2019

DATE & VENUE FOR REGISTRATION
10.06.2019 (SAB) at TCC Seminar Hall,
GNDEC, Ludhiana

CONTACT DETAILS
Dr. Baljeet Kaur

Assistant Professor, Department of Electronics &
Communication Engineering

Guru Nanak Dev Engineering College
Gill Park, Ludhiana.

Punjab - 141006

E-mail: gndec.ece.fdp@gmail.com
Phone: 0161-5064768 (O)

CHIEF PATRON

Dr. Sehijpal Singh (Principal)
Guru Nanak Dev Engineering
College, Ludhiana

PATRON

Prof. Ameeta Seehra
Head,

Department of Electronics &
Communication Engineering

ORGANISING COMMITTEE

Prof. Sandeep Thakur
(ABVGIE, Pragatinagar)
Prof. Anjali Bharti
(ABVGIE, Pragatinagar)
Dr. Narwant Singh
Dr. Balwinder Singh
Dr. Munish Rattan
Prof. Navneet Kaur
Prof. Gurpreet Kaur
Prof. Chahat Jain
Prof. Kuldeep Singh
Prof. Harminder Kaur Aulakh

Prof. Daljit Singh
Prof. Simranjit Kaur
Prof. Tarandeep Singh
Prof. Preeti Pannu
Prof. Shivmanmeet Singh
Prof. Harshmanjit Singh
Prof. Gurinder Singh
Prof. Kirandeep Kaur
Prof. Shyna Kalra
Prof. Harleen Kaur

ONE WEEK TEQIP- III SPONSORED FACULTY DEVELOPMENT PROGRAMME ON

**"Enabling Technologies for
Wireless and Optical
Networks"**

(10th-14th June, 2019)



TEQIP-3



Coordinator
Dr. Baljeet Kaur

Co-Coordinator
Prof. Harminder Kaur

Organized by
Department of Electronics and
Communication Engineering

Guru Nanak Dev Engineering College
Gill Park, Ludhiana, Punjab - 141006
E-mail: gndec.ece.fdp@gmail.com
Phone: 0161-5064768(O)

&
Atal Bihari Vajpayee Govt. Institute of
Engineering and Technology Pragatinagar,
Shimla (H.P.) -171202

ABOUT THE INSTITUTES

Guru Nanak Dev Engineering College (An Autonomous College under UGC Act), established in 1956, has been striving persistently in the field of education by comprehending the need for upliftment of rural youth in highly competitive, technologically-elevated society, in particular, and understanding the thirst for knowledge of students and quenching it in general. The College has been declared an Autonomous College by UGC, New Delhi on 17.8.2012. Apart from offering various accredited graduate level B.Tech courses, the institute also imparts thirteen Postgraduate courses both on regular and part time basis. This college has the privilege of starting Ph.D degree under Quality Improvement Programme (QIP) by AICTE, New Delhi.

Atal Bihari Vajpayee Government Institute of Engineering and Technology, a premier engineering institution was established in the year 2011 under the Society Registration Act by the Government of Himachal Pradesh. This institution is situated at Pragatinagar in beautiful apple growing valley on the bank of river Gini Ganga about 60 Km from Shimla ABVGIT offers technical education in three disciplines B.Tech., Polytechnic and ITI. Presently, CSE and ECE courses are offered in B.Tech. and CSE, ECE and EE in polytechnic. ITI is running five courses i.e. Electrical, Electronics, Fitter, Draughtsman and Motor Vehicle Mechanic.

ABOUT THE DEPARTMENTS

The Department of Electronics and Communication Engineering, established in 1981, is one of the most dynamic departments of Guru Nanak Dev Engineering College. It was the first diversification initiative by the college, 25 years after its establishment. The department is currently running UG and PG (NBA Accredited) courses in Electronics and Communication Engineering and has around 15 scholars enrolled for doctorate. Ever since its inception, the department has been the hub of academic excellence through some great teachers who have spread their wings all over the globe. The alumni of the department are not only excelling in India but also in the Silicon Valley and other hubs of Electronics Technology. They are at the forefront of the Telecom revolution since the last 20 years. In the last two years, as a part of an academically autonomous system, the department has been taking numerous quality initiative including revamping of syllabi so that it is in tune with the outcome based system as proposed in the Washington Accord of Accreditation.

The department is exhibiting a very good pass percentage of students usually above 95% for UG/PG Courses. ECE Department is continuously maintaining strong International collaboration with outside world in form of joint research publications, editorial board memberships of reputed International journals.

The department of Electronics and Communication Engineering (ECE) at Atal Bihari Vajpayee Government Institute of Engineering and Technology offers a 4-year B.Tech programme in Electronics and Communication Engineering. The department has well experienced and dynamic faculty members.

REGISTRATION

There is no registration fee for participants from academic institutes. All short-listed candidates are required to confirm their participation by sending the scanned copy of duly filled Registration form by Email to gndec.ecc.fdp@gmail.com, latest by 31.05.2019.

Shortlisting and confirmation of eligible candidates will be on a first come first served basis. Incomplete application forms will not be entertained.

ELIGIBILITY

Faculty members of degree level engineering colleges recognized by AICTE are eligible to attend the course. Applications from various fields like ECE / EE / CSE / IT / Applied science and other related disciplines are invited.

Course Completion Certificate will be given if the attendance criterion is satisfied.

ACCOMMODATION

Accommodation will be provided in the students Hostels or Guest House on sharing basis. No TA/DA will be paid.

ONE WEEK TEQIP- III SPONSORED FACULTY DEVELOPMENT PROGRAMME ON

"Enabling Technologies for Wireless and Optical Networks"

(10th-14th June, 2019)

REGISTRATION FORM

Name (BLOCK LETTERS): _____

Gender: _____

Qualification: _____

Designation/Department: _____

Organization: _____

Address: _____

Mobile: _____

Email: _____

Accommodation in Campus: YES / NO _____

Signature of Participant _____

Signature of _____

Head of the College / Institute (with date & seal).

(Important: By signing above, Head of the College/Institute

certifies that applicant is a faculty member of degree level

engineering college recognized by AICTE)

Report of FDP

(TEQIP-III sponsored one week faculty development programme)

Name: "Enabling Technologies for Wireless and Optical Networks"

Date: 10th – 15th June, 2019

Venue: Testing and Consultancy seminar Hall

Course content:

- Fundamentals of Wireless Communication
- Recent advances in wireless communication
- Introduction to Cognitive Radio and spectrum sensing
- Software Defined Radio
- Intelligent networks
- Necessity of optical communication and
- WDM/DWDM Techniques & Components
- Non Linear Effects in Optical fibers
- Optical networks-Overview and Recent Developments
- Future in home optical network using POF
- Software tools for research
- Visit to Videocon Telecom Limited Ludhiana

Nothing in the world gives us more power and confidence than having information. The ability to communicate information is essential to achieve the successful advancement of humankind. In today's world the most vital source of transferring information worldwide are optical and wireless communication media. So keeping in view the same, this FDP was organized in Twinning with Atal Bihari Vajpayee Govt. institute of engineering and technology Pragatinagar, Shimla.

The FDP was planned for six days from 10th to 15th june. The programme was divided into 20 + technical sessions, which were engaged by the guest speakers from reputed institutes like IIT ropar, iit jammu, nit delhi, nit kurukshetra, nitttr Chandigarh besides neighbouring institutes like thapar , gndu , and Punjabi university,patiala to give insight about the trends in this field. The main topics covered in the course were Fundamentals of Wireless and optical Communication, Recent Advances in Wireless and optical networks, SDR, Optical Computing with Network of Coupled Lasers, wireless sensor networks, MIMO and Cognitive Radio and spectrum sensing.

Lab sessions were also scheduled to give the idea about latest research software tools to the participants, a field visit to Videocon telecom limited was also a one of the impactful session of this course.


Participants from many institutes of repute. host institutes and other institutes like NIT jalandhar, Punjabi University Patiala, SLIET Longowal, LPU Phagwara, LGC Chownkimaan, MIMIT Malout. KCET Amritsar , HIET Shahpur, Himachal Pradesh.

Course coordinator



Dr. Baljit Kaur

Course co-coordinator



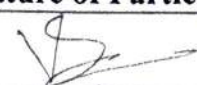

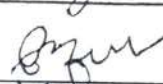
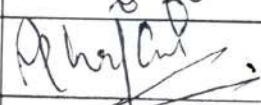
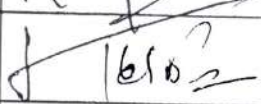
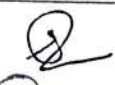

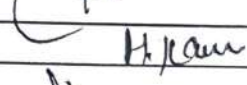

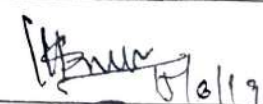


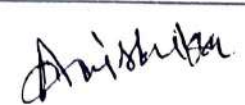
Prof. Harminder Kaur

One week TEQIP-III sponsored Faculty Development Programme on
"Enabling Technologies for Wireless and Optical Networks"
June 10-15, 2019

Organized by Department of Electronics and Communication Engineering
Guru Nanak Dev Engineering College, Ludhiana

CD / Certificate Receiving

Date 15-06-2019

S.No.	Name	Institute	Signature of Participant
✓ 1	Dr. Vikas Singla	MIMIT, Malout	
2	Gurinder Singh	GNDEC, Ludhiana	
3	Dr. Harsimranjit Singh Gill	GNDEC, Ludhiana	
✓ 4	Monika Rani	PTU, Jalandhar	
✓ 5	Kanwaljeet Singh	LPU, Phagwara	
6	Sukhwinder Singh	GNDEC, Ludhiana	
7	Karan Bhalla	GNDEC, Ludhiana	
8	Harminder Kaur	GNDEC, Ludhiana	
✓ 9	Loveleen Kaur	Khalsa College of Engg. & Technology, Amritsar	
✓ 10	Harminder Kaur	Khalsa College of Engg. & Technology, Amritsar	
11	Harleen Kaur	GNDEC, Ludhiana	
✓ 12	Akanksha Sharma	ABVGIET, Pragati Nagar, Shimla	
✓ 13	Anshika Salaria	ABVGIET, Pragati Nagar, Shimla	

✓ 14	Nivedita Kashyap	ABVGIET, Pragati Nagar, Shimla	Nived
✓ 15	Anjali Bharti	ABVGIET, Pragati Nagar, Shimla	Anjali
✓ 16	Navdeep Sharma	ABVGIET, Pragati Nagar, Shimla	Nav
✓ 17	Sidharth Pandit	HIET, Shahpur	Sidharth
✓ 18	Gurjot Singh	LPU, Phagwara	Gurjot
19	Kuldeepak Singh	GNDEC, Ludhiana	KS
20	Daljit Singh	GNDEC, Ludhiana	D
21	Kuldeep Kaur	GNDEC, Ludhiana	K
22	Preeti Pannu	GNDEC, Ludhiana	Preeti
23	Simranjit Kaur	GNDEC, Ludhiana	Simran
24	Gurpurneet Kaur	GNDEC, Ludhiana	Gurpurneet
25	Kirandeep Kaur	GNDEC, Ludhiana	Kirandeep
✓ 26	Harmandar Kaur	GNDU, RC, Jalandhar	Harmandar
✓ 27	Dr. Kulwinder Singh Malhi	Punjabi University, Patiala	Kulwinder
28	Tarandeep Singh	GNDEC, Ludhiana	Tarandeep

✓ 29	Dr. Balwinder Raj	NIT, Jalandhar	B. Raj
30	Gagandeep Kaur	GNDEC, Ludhiana	G. Kaur
31	Dr. Balwinder Singh Dhaliwal	GNDEC, Ludhiana	B. Singh
✓ 32	Dr. Vijay Kumar Samyal	MIMIT, Malout	V. Samyal
33	Harmandeep Kaur	LGC-Polytechnic, Chaukimann	H. Kaur
34	Dr. Narwant Singh Grewal	GNDEC, Ludhiana	N. Singh
35	Bhawna	GNDEC, Ludhiana	B. Bhawna
36	Arshdeep Kaur	GNDEC, Ludhiana	A. Kaur
37	Gagandeep Kaur Gill	GNDEC, Ludhiana	G. Gill
38	Harleen Kaur	GNDEC, Ludhiana (EE)	H. Kaur
39	Daljeet Singh	GNDEC, Ludhiana (CSE)	D. Singh
40	Dr. Baljeet Kaur	(Coordinator) GNDEC, Ludhiana	B. Kaur
41	Harminder Kaur	(Co-coordinator) GNDEC, Ludhiana	H. Kaur



Universiti
Malaysia
PAHANG
Engineering - Technology - Creativity

MEMORANDUM OF AGREEMENT

BETWEEN

UNIVERSITI MALAYSIA PAHANG

AND

GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

(INDIA)

(AICTE PERMANENT ID: 1-3286931)

GROUP OF RESEARCHERS

(shall be formed as part and parcel of the Agreement)

1. **Professor Dr. Rupinder Singh**
Department of Production Engineering
Guru Nanak Dev Engineering College, Ludhiana, Punjab, India
2. **Professor Dr. Md Mustafizur Rahman**
Faculty of Mechanical Engineering and Manufacturing Engineering,
Universiti Malaysia Pahang, Pekan, Malaysia

सी.एस.आई.आर.-सी.एम.ई.आर.आई.

कृषि मशीनरी उत्कृष्टता केन्द्र

सामने जी एन ई कालेज, गिल रोड, लुधियाना - 141 006

CSIR-CMERI

Centre of Excellence for Farm Machinery

Opp. GNE College, Gill Road, Ludhiana - 141 006



Under the Aegis of CSIR & CMERI, Durgapur

CSIR - CMERI CoEFM

Date: 04/01/2018

Ref. CoEFM/DFM/ST/2017-18/10

TO WHOMSOEVER IT MAY CONCERN

It is certified that **Mr. Rasanpreet Singh** has completed a research project on the topic "Design and Simulation for cotton boll transport mechanism of a cotton picker". This project is sponsored and funded by Department of Science and Technology (Govt. of India).

Mr. Rasanpreet Singh was a member of project team consisting of four students that worked under my supervision from July 2017 to December 2017 in our organization.

I have found him most sincere, diligent and curious student and I wish him bright future.

(Dr. Pradeep Rajan)

Principal Scientist & Head
Department of Farm Machinery

डा. प्रदीप राजन

प्रधान वैज्ञानिक

सी.एस.आई.आर. - सी.एम.ई.आर.आई.

कृषि मशीनरी उत्कृष्टता केन्द्र

गिल रोड, लुधियाना - 6

Dr. Pradeep Rajan

Principal Scientist

CSIR - CMERI

CoE for Farm Machinery

Gill Road, Ludhiana - 6

Formerly Known as Mechanical Engineering Research and Development Organization (MERADO)

Tel : 0161-3046302, 3046331 Fax : 0161-3046300 Web : www.cmeri.res.in Store & Purchase 0161-3046228 Tele-Fax : 0161-2502889 E-mail : merado@cmeri.res.in

DESIGN OF COTTON BOLL TRANSPORT SYSTEM FOR A COTTON PICKER

MAJOR PROJECT REPORT

SUBMITTED IN PARTIAL FULFILMENT OF REQUIREMENTS FOR THE AWARD OF THE
DEGREE OF

BACHELOR OF TECHNOLOGY

(Mechanical)

SUBMITTED BY

Rasanpreet Singh Khangura (1411486)

Sahibjot Singh Sra (1411494)

Suraj Singh Gill (1411523)

Gagan Garg (1508449)

UNDER GUIDANCE

Prof. Amrinder Singh Pannu



DEPARTMENT OF MECHANICAL ENGINEERING
GURU NANAK DEV ENGINEERING COLLEGE, LUDHIANA

DECEMBER, 2017



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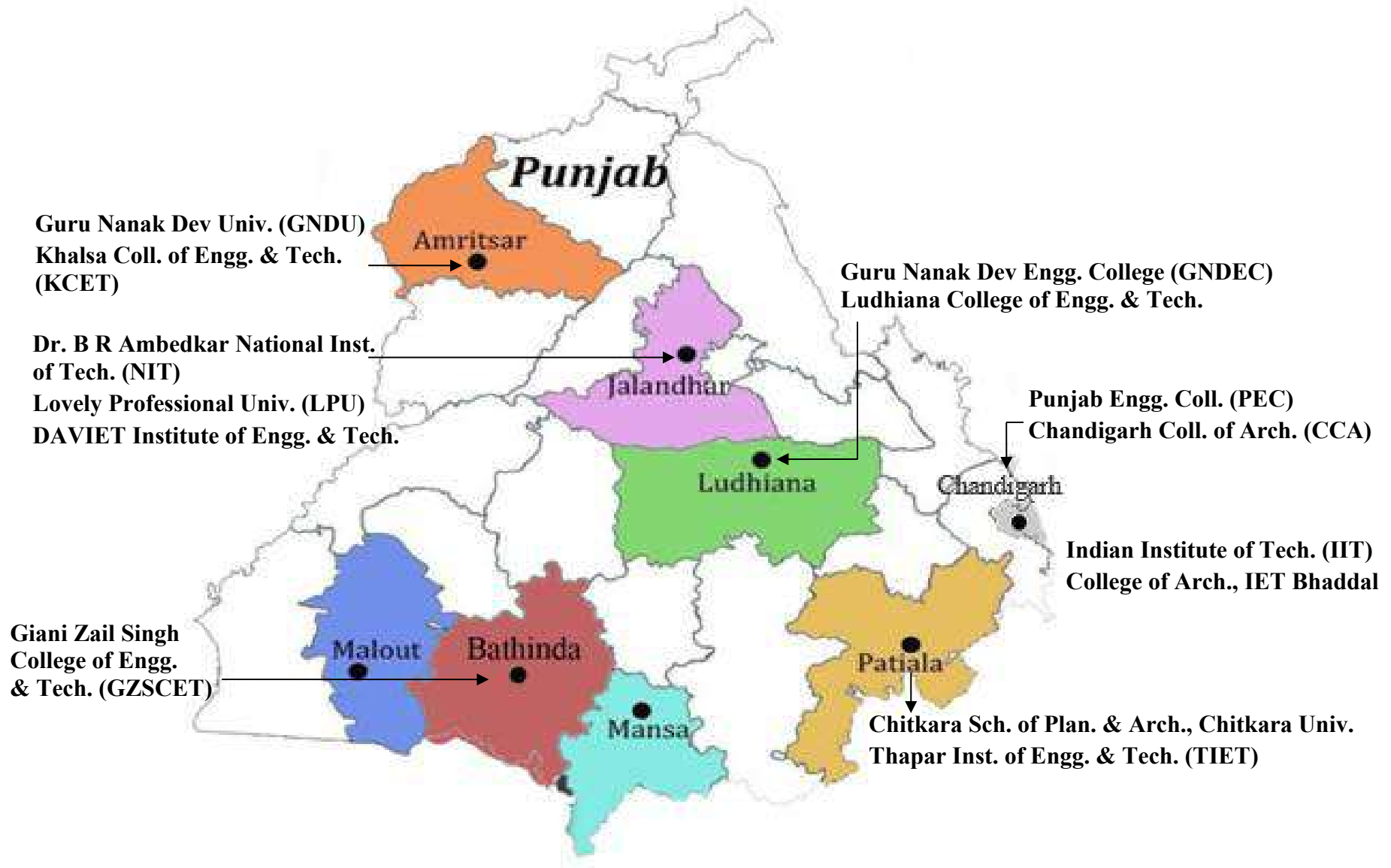
***Built Structures -
Skill Up-Gradation Training
PUNJAB***

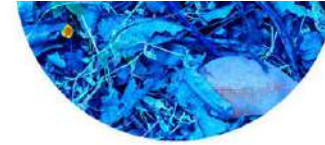
Certified by
Guru Nanak Dev Engineering College, Ludhiana





Locations for Training in the State of Punjab

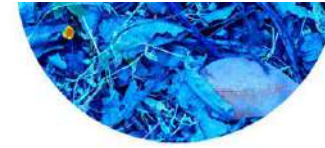




Objectives of the Programme

Upgrade existing skill of Engineers through a Certified Training Program conducted in reputed institutes across various states in India.

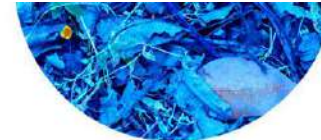
- Upgrade & Strengthen existing knowledge base of practicing Civil Engineers / Architects, on Building Construction.
- Relate theory to practice in the regional context for Environment and Climate responsive Materials, Products & Services.
- Hone Computer application skills on technical interventions.
- Adopt new Technologies to address challenges in the existing and new built structures.



Outcome of the Programme

- A better understanding of new Products, Processes and Construction Techniques as well as Design & Construction Management.
- Academia - Industry connect with Interactive sessions focusing on challenges of work in real life situations, and on ground Experiences, with practical problem solving skills.
- Upgraded Design & Build skills relevant to modern requirements with use of information technology in a world of Global Warming & Climate Change.
- Hand holding support initiatives (post training) by both faculty & industry to build an ecosystem of professional excellence.

Need Assessment Form



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Page 1

- Name:
- Contact details:
 - Address (Office):
 - (Residence):
 - Telephone (Mobile):
 - Telephone (Landline):
 - Email:
- Gender: M ☐ F ☐
- Age:
- Academic Qualification:
- Institute:
- Year in which qualified:
- Any other Professional Training undertaken:
- Employment Details : Self employed ☐
- Working in a company or firm ☐
- Work Experience (in years):
- Projects undertaken with year of completion -

Residential				Commercial				Institutional			
No. of Projects				No. of Projects				No. of Projects			
✓ Completed Year				✓ Completed Year				✓ Completed Year			
G+ 1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Offices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hospitality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G+ 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Shops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Healthcare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G+ 3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Malls	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Resorts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G+ 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Hotels	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High rise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					Restaurants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Page 2

- Consultant involved in the project

	✓	Year	Project description in short
Structural	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
Electrical	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
Plumbing	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
HVAC	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>
Any other	<input type="checkbox"/>	<input type="text"/>	<input type="text"/>

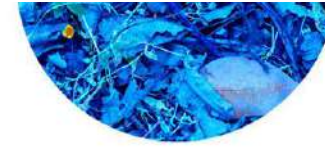
Expertise / Knowledge / Interest levels in fields of -

☒ Tick in the appropriate box:

	Most Interested	Interested	Less Interested	Existing Expertise
Construction				
▪ Rapid building construction and emerging technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Innovations in Concrete Construction: Prefabricated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Innovations in Steel Construction: Composite steel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Innovative Materials & Products: Glass, Paints, Surface Finish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Innovative Waterproofing Products & Solutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Retrofit Solutions for Existing Built Structures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Repair: Problems & Solutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regional				
▪ Use of locally available materials in building construction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Alternative Building Techniques: in the local context	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Disaster Proof Structures: Earthquake, Fire & Safety Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Sustainable Building techniques: Right Steps in Right Order	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sustainable Built Structures				
▪ Energy Management: Alternative energy systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Water Management: Water recycling, Phytoid system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Waste Water Management: STP, Grey water recycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Solid Waste Management: MSW, Demolition W, Composting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Building Integrated Management Systems - BIMS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
▪ Urban Farming Techniques in Buildings - Roof gardens	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Suggestions, (any other) for specific learning needs.

Key expectations from the training.



IGM: Interaction with Practicing Architects & Engineers for Need Assessment



Mansa, Punjab



Malout, Punjab



Patiala, Punjab



Jalandhar, Punjab



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Amritsar, Punjab
Oct. 6 to Dec. 1, 2018



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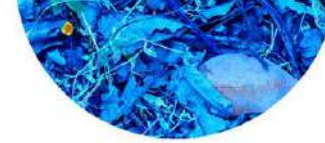
LAUNCH CEREMONY -1

Date: Oct. 6, 2018 at Hyatt Hotel, Amritsar



Lighting of the Lamp

Mr. Arun Hamda (MRH), Mr. Subramaniam (Tata Tiscon), Mr. Pradeep Malhotra (MRH), Dr. Harpal Singh (GNDEC), Dr. Behl (GNDU), Prof. Kulbir S Gill (GNDEC), Dr. H S Rai (GNDEC), Dr. Bikramjit Singh (KCET), Dr. Jagbir Singh (GNDEC), Ms. Sangita Kapoor (Blue Planet)



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Session -1: Oct. 6, 2018



***Architecture in a Warming World -
Good Building Design Practices for
Architects.***

Ms. Sangita Kapoor

Sustainability Consultant, Blue Planet.



***Good Building Practices - Building
Design & Construction.***

Dr. H S Rai

Professor - GNDEC Ludhiana

Session -2: Oct. 13, 2018

***Good Practices for Contemporary Climate Responsive Architecture in Punjab
Building Envelop, Orientation, Day Light & Ventilation.***

How a good building is supposed to do all this and more.....be resource efficient, consume less energy to build and run, low maintenance, long life, produce less Waste + Be Functional, Comfortable, Climate responsive, Cost effective, Aspirational & Aesthetic too !

Ar. Siddhartha Wig

B.Arch. SPA, Delhi, M.Tech.in Building Science & Construction Management



Session -3: Oct. 27, 2018



***Geotechnical Aspects in Building Construction -
The Indian Scenario & Scope for Improvement.
Soil & its behaviour, Soil Testing.***

Dr. Kulbir Singh Gill

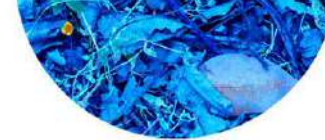
HoD - Civil Engg. Dept., GNDEC, Ludhiana



***Ground Improvement:
Problems & Approach for
Solutions.***

Dr. Charanjeet Singh

GNDEC, Ludhiana



Session -4: Nov. 3, 2018



Water & Waste Management Practices in Dwelling Units, Solid Waste Management, Water Conservation in Built Environment & Wastewater Treatment/Management: Technological Options.

Dr. Siby John

HoD - Civil Engg. Dept., PEC, Chandigarh



Right Steps in the Right Order for Systems Approach to Built Structures - Heating, Cooling, Lighting & Ventilation.

Ms. Sangita Kapoor

Session -5: Nov. 10, 2018



Building Information 3D Modeling Computer Application for Architecture, Engineering, Construction & Operations Industry.

Dr. H S Rai, TIET, Patiala

Session -6: Nov. 17, 2018



Practical Solutions, Innovations & Techniques for Building Construction to Reduce Costs, Ensure Quality & Efficacy through Selection of Materials.

Dr. Harvinder Singh

GNDEC, Ludhiana

Session -7: Nov. 24, 2018



Earth quake Resistant Design of Concrete Structures, Fatigue Behaviour, Technology & Recycling of materials in concrete.

Dr. S P Singh

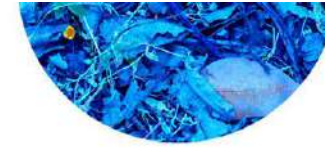
Dean - Plan. & Development, NIT Jalandhar



Hands on Training on Concrete Testing Structure Health Monitoring using Destructive & Non destructive Techniques.

Dr. Jagbir Singh

GNDEC, Ludhiana



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Concluding Session -8: Dec. 01, 2018
Natural & Artificial Lighting Space Planning:
Designing Inside Out Aesthetics & Language of Design
in Architecture.

Creating Aesthetic Impact through use of Lighting, Colours & Paints in Landscape, Exterior & Interior Spaces in Built Structures.

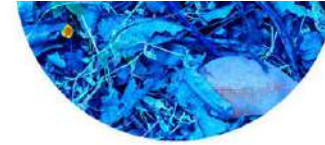
Ms. Sangita Kapoor



CLOSING CEREMONY

Date: Dec. 10, 2018 at Hyatt Hotel, Amritsar





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Faculty, Industry Experts and Practicing Architects & Engineers



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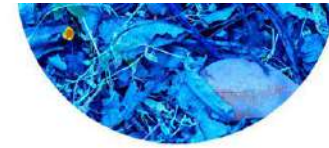
Mansa, Punjab

March 30 to April 27, 2019

1. Budhlada
2. Bareta
3. Barnala
4. Bhikhi
5. Bhoa
6. Dhanaula
7. Joga
8. Mansa
9. Rampura
10. Sangrur
11. Sardulghar
12. Sunam
13. Tapa
14. Talwandi



TISCON
DISCOVERY
FOCUS ON EXCELLENCE *Pro*



LAUNCH CEREMONY -1

Date: March 30, 2019



Lighting of the Lamp

Training Session in Progress

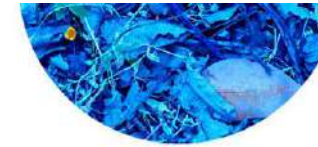


Session -1

Date: March 30, 2019

Principles of Architectural Planning & Design

Ms. Sangita Kapoor (Director, Blue Planet)

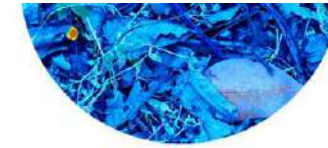


Session -2

Good Practices & Innovations in Concrete Construction

Dr. Jagbir Singh (Professor, GNDEC, Ludhiana)





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Date: April 6, 2019

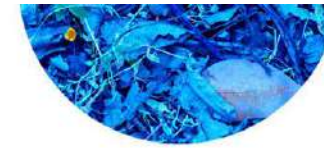


Session -3

***Practical Solutions to Reduce Cost, Improve Quality
through Innovative Techniques & Materials
for Good Building Construction: Steel & Concrete***

Prof. Harvinder Singh (GNDEC, Ludhiana)





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Session -4

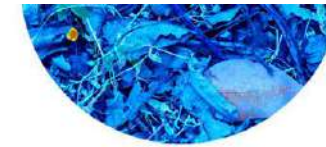
Date: April 6, 2019



HVAC for Single Dwelling Units
Prof. Gagandeep S Sodhi (GNDEC, Ludhiana)

Electrical Services for Single Dwelling Units
Dr. Arvind Dhingra (GNDEC, Ludhiana)





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Session -5

Date: April 13, 2019

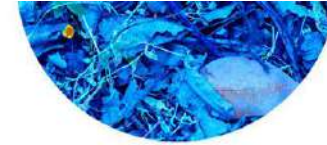
***Good Practices for Contemporary Climate
Responsive Architecture in Punjab***
Ar. Siddhartha Wig (Chandigarh)



Session -6

***Basics of Plumbing Design in
Low Rise Buildings***

*Mr. Sahil Kansal (Consultant,
Public Health Engg., Chandigarh)*



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Session -7

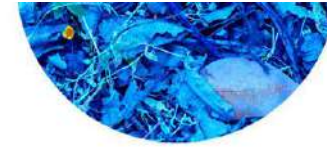
Date: April 19, 2019

Geotechnical Aspects in the Building Planning; Understanding Relationship of Soils & Foundation Techniques
Prof. Gurprit Bath (GZSCET, Bathinda)



Session -8

Testing: Concrete & Soil
Practical Demonstration
Dr. Jagbir Singh



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Session -9

Date: April 27, 2019

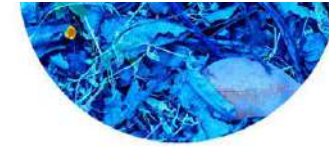
***Surface Finishes, Materials & Products:
Roofs, Ceilings, Walls & Floors***

Ms. Sangita Kapoor (Director, Blue Planet)



Session -10

***Bye-Laws for Architectural &
Engineering Practices***
Er. Kapil Arora

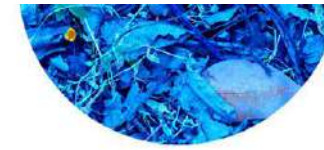


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CLOSING CEREMONY

Date: April 27, 2019





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Faculty, Industry Experts and Practicing Architects & Engineers