Date: 24/11/2020

National Initiative Program (Student Exchange Program)

Report on Academic Exchange (Online Workshop and Collaborative Research Activity) (A.Y 20-21 Odd Semester)

As per the Initiatives of Ministry of Human Resource -Development and AICTE, Thakur College of Engineering and Technology started to conduct Students exchange programs. Student exchange program gives an opportunity for students to broaden their knowledge on their study of choice from a different institute. This gives them a chance to develop their work experience by seeing how the course/research domain they are studying is being practiced in another institute. It helps them to understand the working philosophy of the other institute and also enhances their ability to work in collaboration for project development and paper writing with students of other institute. The purpose is to learn the culture, living styles, social customs, food habits and such other aspects of the social and cultural affairs of each other's institute along with learning technical skills regarding a latest technology.

Objective:

1. To learn collaboratively the branch specific recent trends in form of hands on workshop with partner college students.
2. To encourage students and faculty members collaboration from our institute with Student Exchange Partner Institutes for collaborative project development and paper writing on branch specific recent trends.
3. To adopt the national initiative under EBSB: Students exchange program at institute level.

Student Exchange Program Tracks on Branch Specific Recent Trends:

- VLSI Development
- Building design using MidasGEN
- User Experience Design
- AWS Cloud Bootcamp
- IOT for Smart Solutions
- Leadership Development

- Basic of Solidworks

Target Participants:

Undergraduate Engineering students and Faculty mentors from Host College and partner colleges.

Host College:

(1) Thakur College of Engineering & Technology

Partner Colleges:

(1) Gandhi Institute of Engineering and Technology, Odisha
(2) Vardhaman College of Engineering, Hyderabad (Telangana)
(3) ISBM University, Chhattisgarh
(4) Government Engineering College Nawada, Bihar
(5) Kls Gogte Institute of Technology, Belagavi, Karnataka
(6) Maratha Vidya Prasarak Samaj's Karmaveer Baburao Ganpatrao Thakare College of Engineering, Nashik

Overall Coordinators:

- Dr. Lochan Jolly (Dean SSW)
- Dr. Megharani Patil (Activity Head- National Initiative Program)

Student Exchange Program Coordinators:

- Ms. Jalpaben D. Pandya: NIP-SPOC ELEX (VLSI Development)
- Mr. Arpit Vyas: NIP-SPOC CIVIL (Building design using MidasGEN)
- Mr. Rahul Neve: NIP-SPOC IT (User Experience Design)
- Mrs. Kalpana Gangwar: NIP –SPOC COMP (AWS Cloud Bootcamp)
- Mr. Sonali Singh: NIP-SPOC E&TC (IOT for Smart Solutions)
- Mr. Ashwin Pathak: NIP –SPOC ES&H (Leadership Development)
- Mr. Vaibhav Madane: NIP-SPOC Mech (Basic of Solidworks)

Student Exchange Program Faculty In charges:

- Mrs. Poorva waingankar & Ms. Jalpaben D. Pandya (VLSI Development)
- Dr. Sanjeev Chaudhari & Arpit Vyas (Building design using MidasGEN)
- Dr. Lochan Jolly, Dr. Megharani Patil & Mrs. Purvi Sankhe (User Experience Design)
- Dr. Anand Khandare (AWS Cloud Bootcamp)

- Mrs. Sukruti Kalgud and Mrs. Rupali Mane (IOT for Smart Solutions)
- Mr. Amol Dapkekar and Mr. Nivant Kambale (Leadership Development)
- Mr. Krishna Gaikwad (Basic of Solidworks)

Venue: Online Platform (Zoom)

Speakers: TCET Faculty members and Students, Alumni students and Invited Guests from Academia and Industry.

Student Exchange Program Details and Duration:

Student Exchange Program Specifications	Dates	Time duration
Branch specific Online workshops	12th, 19th and 26th September 2020	11.00 AM to 12.30 PM (Session) 4.00 PM to 5.00 PM (Group Discussion for Project and Paper writing)
Collaborative Project development	14th September -17th October 2020	Weekly follow up meetings with group members by deciding time slot according to group member's availability.
Paper Writing on recent trends	19th October - 7th November 2020	

Details of Event:

1) Online Workshops on Branch Specific Recent Trends:

a. Description of the event:

Various branch specific workshops were held on 12th, 19th and 26th of September, 2020 for the students of all department of not only Thakur College of Engineering and Technology but also from our partner college GIET, Odisha and other partner college students. The workshop was proposed for differ domains with different tracks by the suggested choice of interest. Due to pandemic situation, this event of TCET was conducted online where participants could learn in-depth about the specific track.

***Day 1*:** An inauguration programme was scheduled and organized by Dr. Megharani Patil and Mr. Amol Dapkekar. The inauguration took place at 10:30 a.m. starting with a welcome speech by Ms. Ayushi Sarda, a student of TCET. This was followed by Saraswati Vandana by Ms. Sayantani Das, student of TCET. Next, Dr. Lochan Jolly (Dean SSW, TCET) introduced the programme with its objectives, the various workshops

under NIP to our participants where she talked about the complete flow of the workshop and its conduction over 3 days on Saturdays. This was then followed by an address by Dr. B. K. Mishra, Principal where he talked about the AICTE and MHRD initiative and its organization by TCET. The inauguration ended with a vote of thanks proposed by Dr. Megharani Patil where she expressed her gratitude to management, Principal, Vice Principal, Deans, Faculty members, staff and students attending the workshop.

The first session was a theoretical session from 11.00 am to 12:30 pm. A basic introduction of the track was given the speakers to all the participants. The evening session was from 4pm to 5 pm and consisted of doubt solving session and discussion on project development and paper writing.

Day 2: - Similar to Day 1, two sessions (morning and evening) were held from 11am to 12:30 and 4pm to 5 pm respectively. The first session comprised of a littler deeper knowledge of the track and the second session consisted of doubt solving session and further discussion on project development and paper writing.

Day 3: - In the first session, from 11am to 12:30 pm, a complete in-depth knowledge was provided to the participants. The evening session (that was from 4pm – 5pm) was conducted for group discussion on project development and paper writing. Also, all the doubts were cleared by the speakers.

This session was followed by valedictory function from 5:00 pm to 6:00 pm. It started with the institute's video, welcome to all dignitaries, faculties and the participant. There was a program report share by Dr. Megharani Patil, followed by sharing live feedback by one participant of each track, views about the program were shared by the faculties from partner colleges. Lastly was delivered by, a speech was delivered by Principal of TCET, Dr. B.K. Mishra regarding the upcoming events by TCET to promote collaborative learning. The event concluded with vote of thanks from Dr. Lochan Jolly.

The various workshops that were conducted:

1. VLSI Development – Day 1 comprised of 'introduction to VLSI'. Day 2 was about the 'VLSI Design Rules'. On day 3, the speaker talked about the 'Recent Trends in VLSI'.
2. Building design using MidasGEN – Day 1 was about Introduction and design guidelines for Building design. On day 2 the speaker gave a brief introduction about the building design process, the salient features of design and various types of analytical methods to evaluate the design. Also, further career opportunities in structural design were also discussed with the

students. Day 3 comprised of elaboration of design of building's frame (Beam, Columns collectively), a healthy interaction with participants and a Q&A session through polls.

3. User Experience Design - Day 1 consisted of introduction of UXD and its goals, discussion on UI design cycle. Day 2 was all about karmic design thinking, Customer Journey Map and Comparing and Contrasting different UI design of the same brand. On day 3 the speaker gave an introduction to UX Capstone and demonstration of figma software.
4. AWS Cloud Bootcamp – Day 1 consisted of brief introduction about cloud computing in terms of its features, advantages and the basic concepts that should be known before diving into AWS cloud. On Day 2 a a brief introduction was given about AWS with respect to simple terms like Regions, Availability zones and EC2 and about the creation of an instance of EC2 and various other configuration settings using which one can host his/her website on the cloud. On Day 3 the participants learned about two important concepts related to AWS Cloud i.e. Elastic Load Balancing and Auto Scaling Group where they elaborated on types of elastic load balancing families, its architecture, and Application Load Balancer. Also, Auto-scaling basics, launch configurations, and various concepts related to auto-scaling were demonstrated through live examples through AWS account.
5. IOT for Smart Solutions - Day 1 was Introduction to IoT. On Day 2 the speakers talked about various IoT Projects and software used for IoT projects. Day 3 was about "How to execute IoT Projects: Tips".
6. Leadership Development – On day 1 the speaker talked about 'Managing Self and Other'. Day 2 was about 'Target/Goals Setting as the leader and Team Member'. On Day 3 the session revolved around the topic 'Leadership Development and Styles of leadership'.
7. Basic of Solid works – Day 1 consisted of Importance of Solid works in drawing and basic commands. Day 2 was about 'Assembly in Solid works and how different mates are required for the same. On Day 3 the speaker discussed about disassembly of mechanical bearings using software and hardware requirements to use Solidworks were also discussed.

b. Day wise detailing of each track with topic covered by speaker : -

Tracks	**Day 1**		**Day 2**		**Day 3**	
	Speaker	Topic covered	Speaker	Topic covered	Speaker	Topic covered

VLSI Development	Ms. Poorva Waingankar	• Basics of VLSI, the technology for VLSI. • Crystal growth and silicon wafer preparation method. • DSCH software.	Ms. Poorva Waingankar	• CMOS Design	Mr. Yadnesh Samant	• Latest Trends in VLSI
					Ms. Poorva Waingankar	• project development and paper writing
	Ms. Jalpaben Pandya	• Fabrication of CMOS inverter. • Basics of MOSFET. • TCAD software on Nanohub.	Ms. Jalpaben Pandya	• VLSI design rules	Ms. Jalpaben Pandya	
Building design using MidasGEN	Dr. Sanjeev Chaudhari	• Brief introduction to building design process • Salient features of design • Various types of analytical methods • Design of Burj Khalifa using MidasGEN software	Dr. Sanjeev Chaudhari	• Understanding of Design guidelines. • Hands on design in MidasGen.	Dr. Sanjeev Chaudhari	• Design of Building frame • Project Development
User Experience Design	Dr. Megharani Patil	• User Experience Design and its different parameters • Goals of UXD • Discussion of UI Design Cycle	Dr. Lochan Jolly	• Explaination on methods such as Empathize, Analyze, Solve and Test.	Mr. Atharva Tendulkar (Alumni)	• Demonstration of figma software
			Dr. Megharani Patil	• Compare and Contrast different UI design of the same brand	Dr. MegharaniPatil	• Introduction to UX Capstone
	Mrs. Purvi Sankhe	• Different Prototyping Techniques and User Recognition • Preventive measures.	Mrs. Purvi Sankhe	• Customer Journey Map	Dr. Manish Rana	• Panel Discussion
					Mrs. Purvi Sankhe	

AWS Cloud Bootcamp	Dr. Anand Khandare	• Introduction to Cloud. • Job profiles as an AWS architect.	Dr. Anand Khandare	• AWS Global Infrastructure • AWS Elastic Compute Cloud (EC2)	Dr. Anand Khandare	• Elastic Load Balancing • Paper writing
					Mr. Anand Vishwakarma	• Timeline for developing projects
	Mr. Kaustubh Shete	• Introduction to AWS. • What is AWS Educate.	Mr. Kaustubh Shete	• Hands-on EC2 web server creation	Mr. Kaustubh Shete	• Practical demonstration of EBS and Auto-scaling
					Mr. Shivam Raisharma	• Which papers to refer and how to filter out papers based on quality
IOT for Smart Solution	Ms. Sukruti Kaulgud	• Introduction to IOT, • Why we need IoT and its benefits of IoT, • Architectures of IoT. • Advanced project based on IoT • Future of IoT • IoT Building Blocks • Brief idea on Arduino device • Bluetooth component in IoT	Mr. Ashwin Nair	• Introduction to IOT, • Pin diagram of Arduino • Flow chart for IoT based projects. • Types of Controller Board • IoT development Platforms. • IoT Domains • Comparison of various platforms • Steps to execute the IoT	Prof.Dr.Saurabh N. Mehta	• Introduction to IOT, • Types of Projects • Key points in Out House Projects • How to select Projects • Key points when making projects • How to do survey • Few important projects in the field of IoT
					Ms. Sukruti Kaulgud	
	Ms. Rupali Mane		Ms. Rupali Mane		Ms. Rupali Mane	
	Ms. Aarti Dharmani		Ms. Aarti Dharmani		Ms. Aarti Dharmani	

				projects.		
Leadership Development	Mr. Amol Dapkekar	• Importance of soft skills. • Need to know yourself and others for successful professional. • Strengths and weaknesses.	Mr. Amol Dapkekar	• Discussion on project development and paper writing.	Dr. Lochan Jolly	• Leadership Development
					Mr. Amol Dapkekar	• Discussion on project development and paper writing
	Mr. Nivant Kambale	• Interpersonal skills • Solved doubts regarding team building and group.	Mr. Nivant Kambale	• Target/Goals setting as the leader and team member	Mr. Nivant Kambale	• Styles of leadership'
Basic of Solidworks	Mr. Krishna Gaikwad	• project development	Mr. Krishna Gaikwad	• project development	Mr. Krishna Gaikwad	• Basics of Solidworks
	Mr. Balaji Bokka and Ms Niharika Rane	• Importance of software in drawing. • Basic commands in Solidworks	Mr. Hardik Padia and Ms Niharika Rane	• Assembly in solidworks	Mr. Balaji Bokka and Ms Niharika Rane	• hardware requirements to use solidworks. • Discussion on project development and paper writing.

c. No. of registrations (College-wise): -

College	No of registrations
Gandhi Institute of Engineering and Technology, Odisha	3
Thakur College of Engineering and Technology	208
Vardhaman College of Engineering	67
Maratha Vidya Prasarak Samaj's Karmaveer Baburao Ganpatrao Thakare College of Engineering	134
Kls Gogte Institute of Technology	83
Government Engineering College	64
Total Registrations	**559**

d. No. of participants: -

Track	Registered	Day 1 Morning	Day 1 Evening	Day 2 Morning	Day 2 Evening	Day 3 Morning	Day 3 Evening
UXD	49	33	23	30	24	24	20
AWS	108	88	87	93	75	80	68
MidasGEN	107	103	30	69	11	35	15
Solidworks	78	34	26	27	15	24	17
VLSI	35	19	16	14	12	22	9
IOT	134	123	107	91	63	72	72
LD	48	21	14	18	14	20	18
Total	**559**	**421**	**303**	**342**	**214**	**277**	**219**

2) Collaborative Project Development

a. Description of the event:

The event encouraged students' and faculty members' collaboration from our institute with Student Exchange Partner Institutes all over the India for collaborative project development on branch specific recent trends. The students were given a platform to survey on the recent trends, propose a problem definition and thereby work to develop a solution in form of a mini-project on branch specific recent trends for any real time problem like societal, environmental or industry. A weekly follow up meeting with student-groups by deciding time slot according to group member's availability was initiated by faculty mentors.

b. Track wise Faculty mentors involved:

Track	Faculty mentors for Publications
UXD	Dr. Megharani Patil
	Mrs. Purvi Sankhe
	Mr. Rahul Neve
AWS	Dr. Anand Khandare
	Ms. Kalpana Gangwar
MidasGEN	Mr. Arpit Vyas
	Dr. Sanjeev Choudhary
	Mr. Ninad Khandare
Solidworks	Mr. Krishna Gaikwad
VLSI	Ms. Jalpaben Pandya
	Mrs. Poorva Waingankar
IOT	Mrs. Sukruti Kaulgud
	Dr. Payel Saha
	Mr. Niket Amoda

	Mrs. Sonali Singh
	Ms. Aarti Dhamanni
	Mrs. Rupali Mane
LD	Mr. Ashwin Pathak
	Mrs. Naina Kakad
	Mr. Nivant Kambale
	Mr. Harsh Rajan
	Mrs. Shobharani
	Mr. Amol Dapkekar

c. Number of students participated:

Track	Groups	TCET	KLS	VCE	NDMVP	GCE	GIET
UXD	4	14	2	0	5	0	2
AWS	3	9	2	0	2	0	1
MidasGEN	1	4	0	0	0	1	-
Solidworks	2	6	2	0	0	0	-
VLSI	4	10	0	0	2	1	-
IOT	12	16	9	7	17	0	-
LD	4	7	0	1	2	4	-
Total	30	66	15	8	28	6	3

3) Paper Writing on recent trends

a. Description of the event:

The event encouraged students' and faculty members' collaboration from our institute with Student Exchange Partner Institutes all over the India for paper writing on branch specific recent trends. The students were encouraged to write a technical paper on the project developed on branch specific latest technology. Faculty mentors ensured that any/all obscurity faced by the students while writing the paper were cleared. This event provided a platform for publishing collaborative research works in our institute E-Conference 2020 and Multicon-W 2021.

b. Track wise Faculty mentors involved:

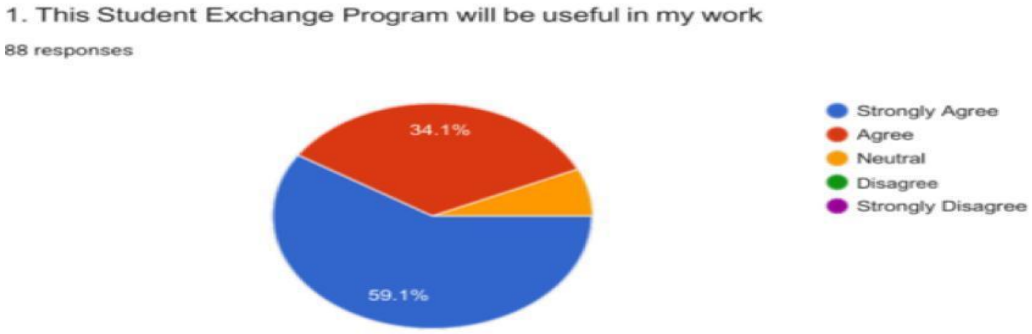
Track	Faculty mentors for Publications
UXD	Dr. Megharani Patil
	Mrs. Purvi Sankhe
	Mr. Rahul Neve
AWS	Dr. Anand Khandare
	Ms. Kalpana Gangwar
MidasGEN	Mr. Arpit Vyas
	Dr. Sanjeev Choudhary
	Mr. Ninad Khandare
Solidworks	Mr. Krishna Gaikwad
VLSI	Ms. Jalpaben Pandya
	Mrs. Poorva Waingankar

IOT	Mrs. Sukruti Kaulgud
	Dr. Payel Saha
	Mr. Niket Amoda
	Mrs. Sonali Singh
	Ms. Aarti Dhamanni
	Mrs. Rupali Mane
LD	Mr. Ashwin Pathak
	Mrs. Naina Kakad
	Mr. Nivant Kambale
	Mr. Harsh Rajan
	Mrs. Shobharani
	Mr. Amol Dapkekar

c. Number of students participated:

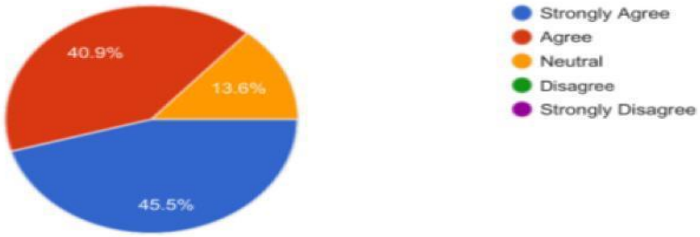
Track	**Groups**	**TCET**	**KLS**	**VCE**	**NDMVP**	**GCE**	**GIET**
UXD	4	14	2	0	5	0	2
AWS	3	9	2	0	2	0	1
MidasGEN	1	4	0	0	0	1	0
Solidworks	2	6	2	0	0	0	0
VLSI	4	10	0	0	2	1	0
IOT	12	16	9	7	17	0	0
LD	4	7	0	1	2	4	0
Total	30	66	15	8	28	6	3

Feedback:



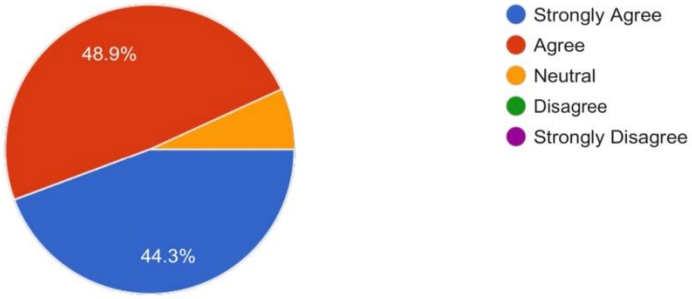
2. The time allotted for the Student Exchange Program was sufficient

88 responses



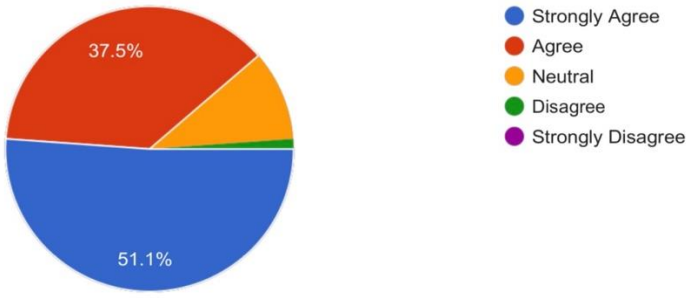
3. The content was organized and easy to follow

88 responses



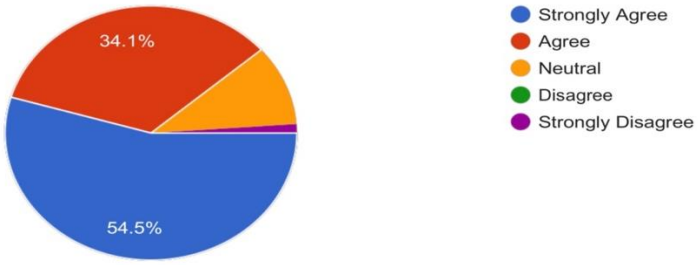
4. The Trainer was knowledgeable about training topics.

88 responses



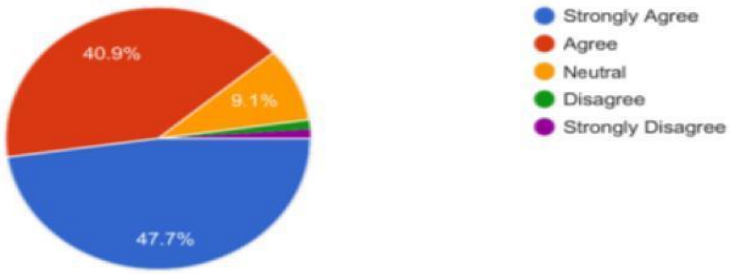
5. Exposure to new methodology, tools, and technologies.

88 responses



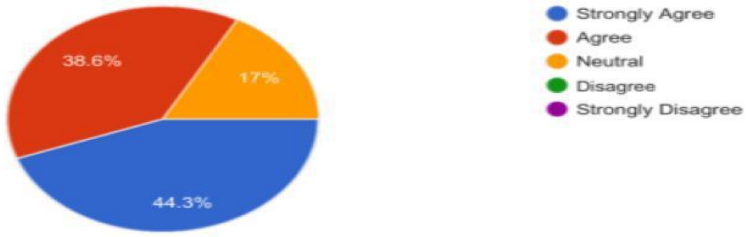
6. Was your Student Exchange Program experience related to your major area of study?

88 responses



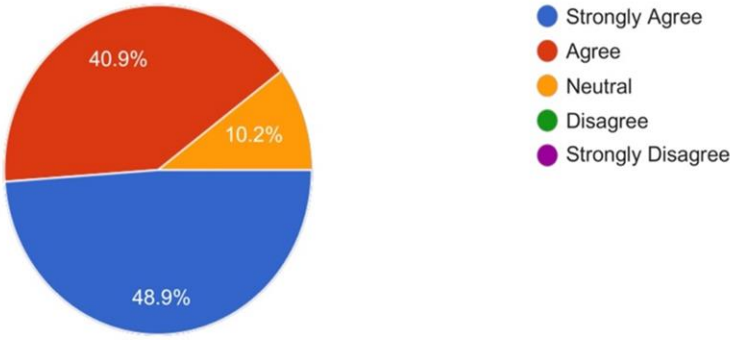
7. This Student Exchange Program allowed You to apply classroom theory to practice?

88 responses



8. Helped you in developing new interests and abilities?

88 responses



9. In what areas did you most develop and improve?

88 responses

Arduino

-

Web development

Coding

Yes

Nothing

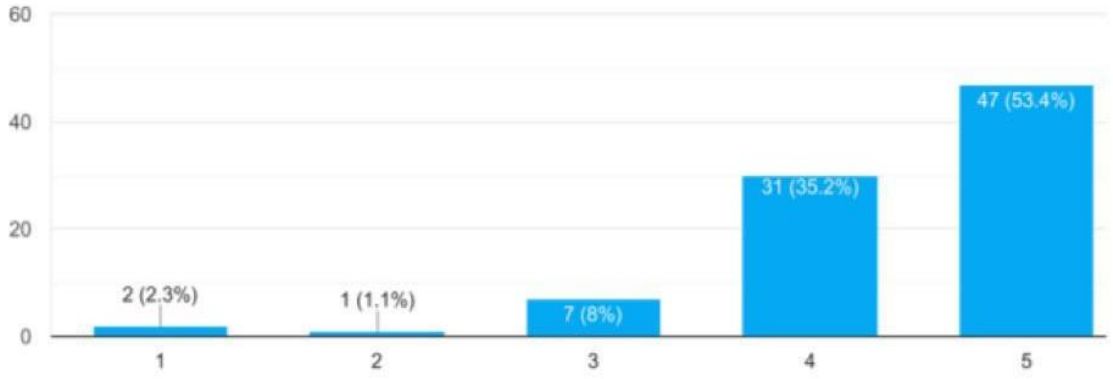
In 3D

All area it was used my knowledge

Front end part

10. Considering your overall experience, how would you rate this Student Exchange Program?

88 responses



11. Give suggestions as to how your Student Exchange Program experience could have been improved

Good

No

Nothing

None

Nil

.

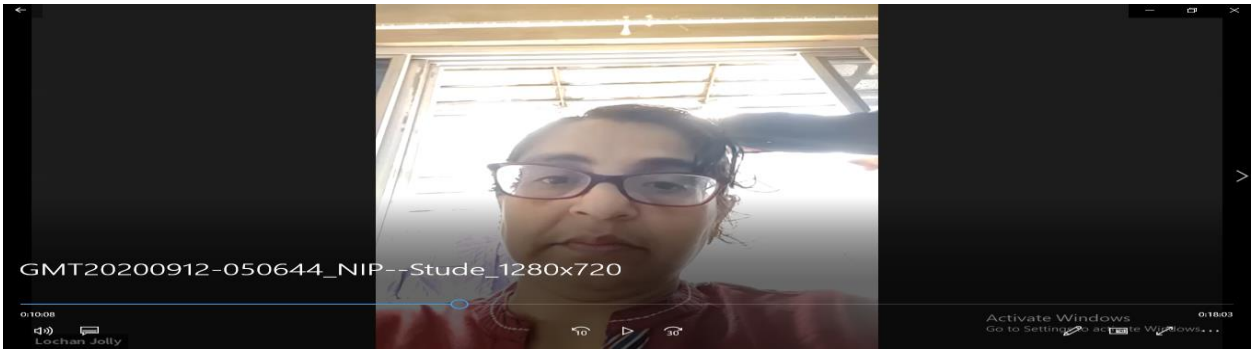
Good as it is

Yes

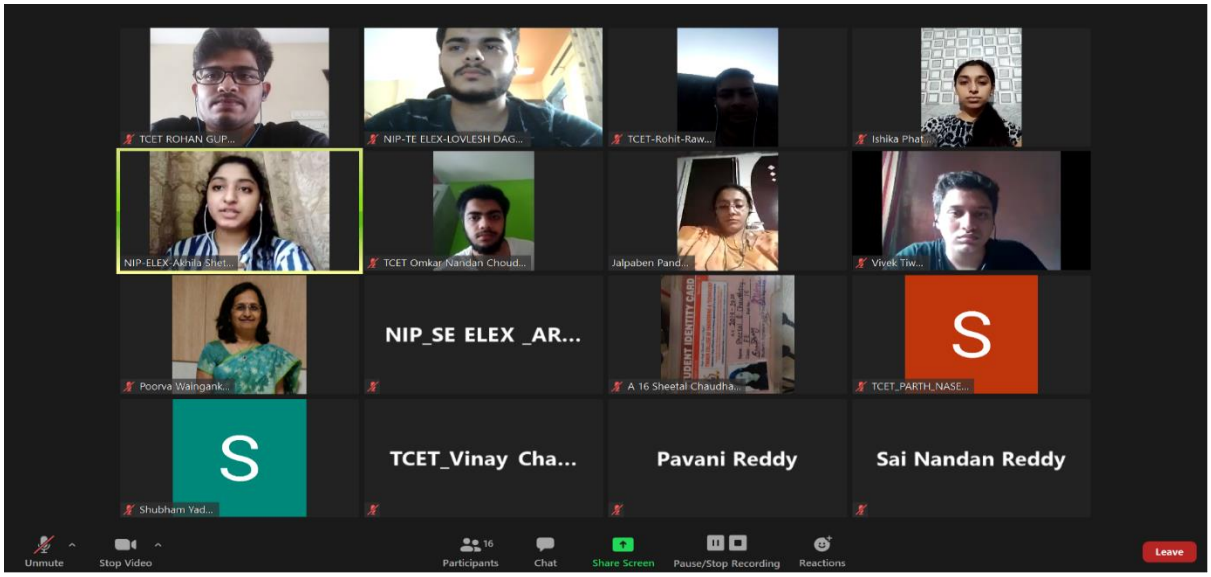
Great

Glimpse of Program:

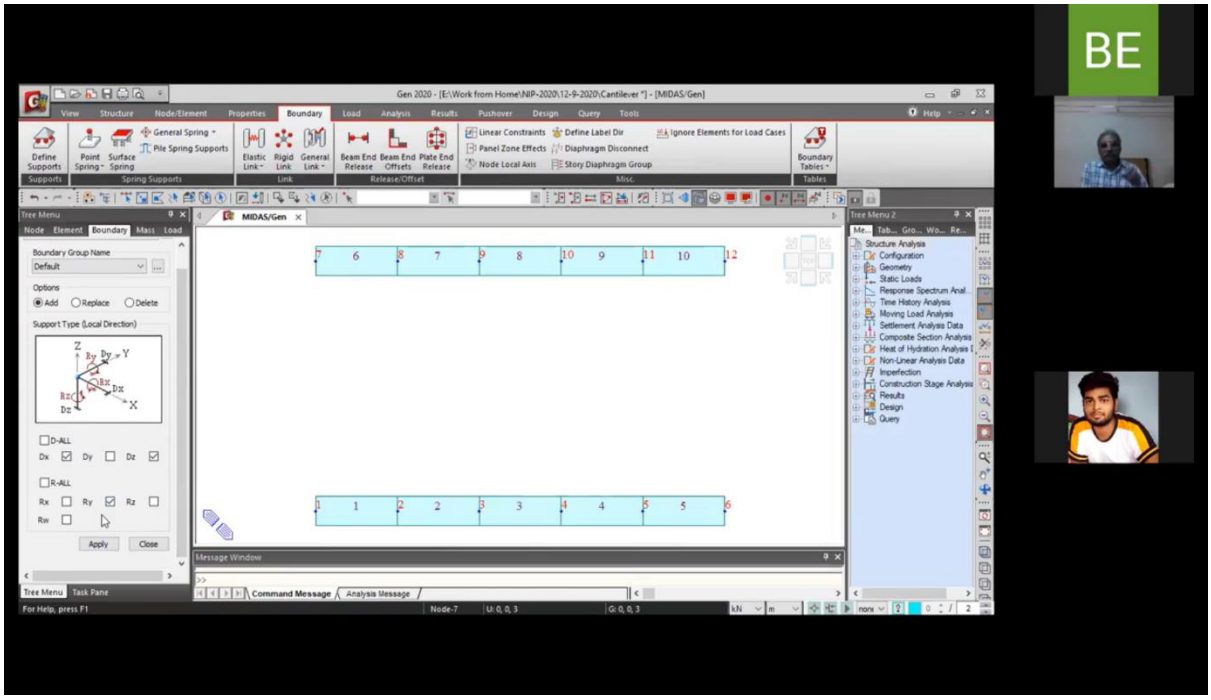
Inauguration Session



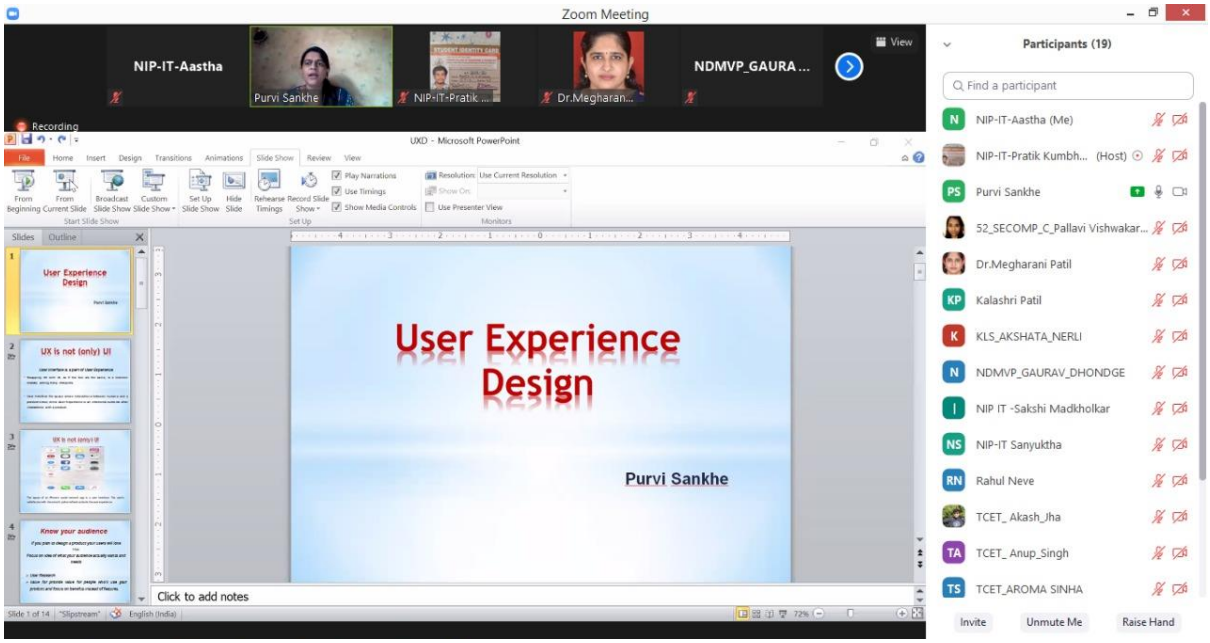
VLSI Development

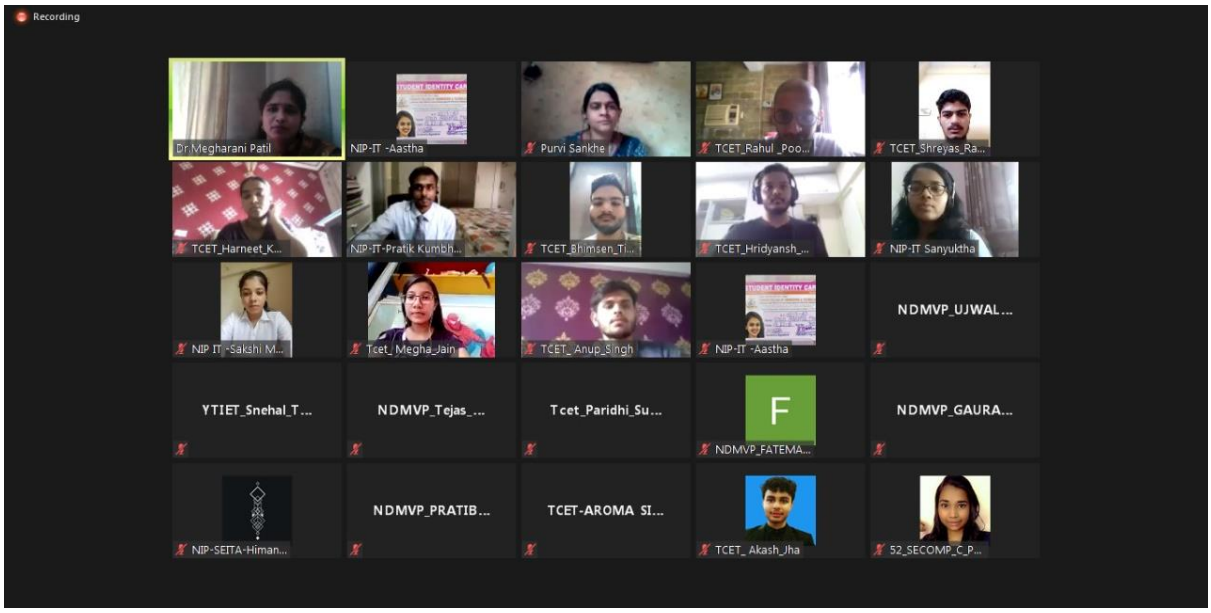


Building design using MidasGEN

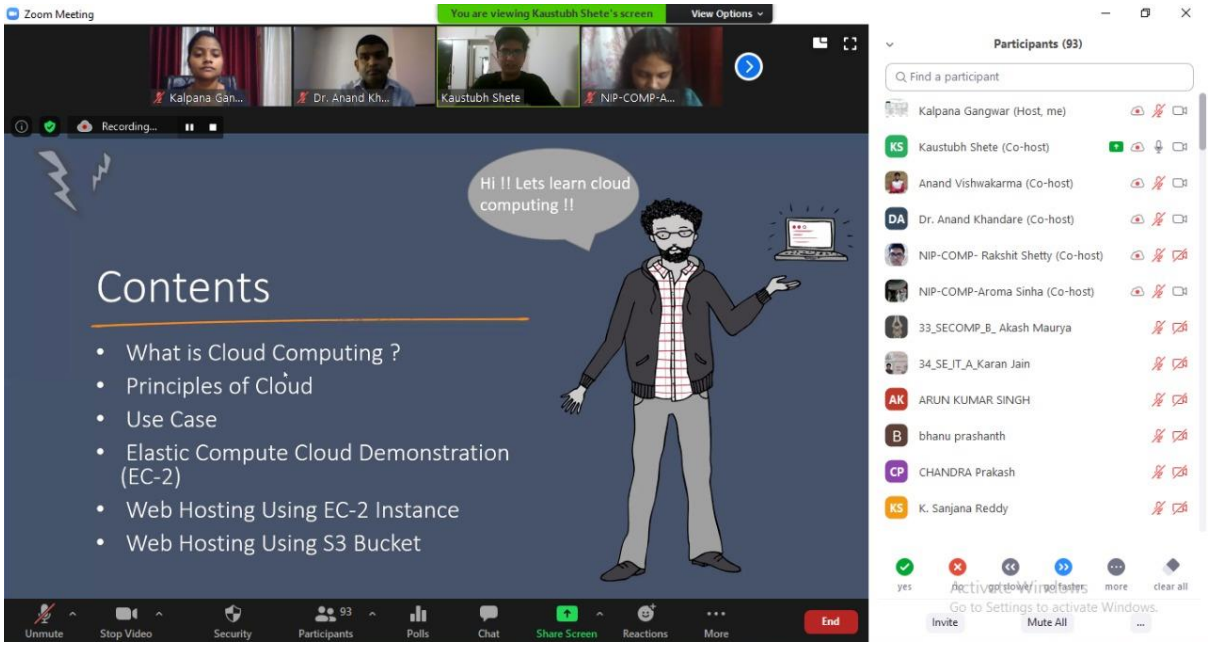


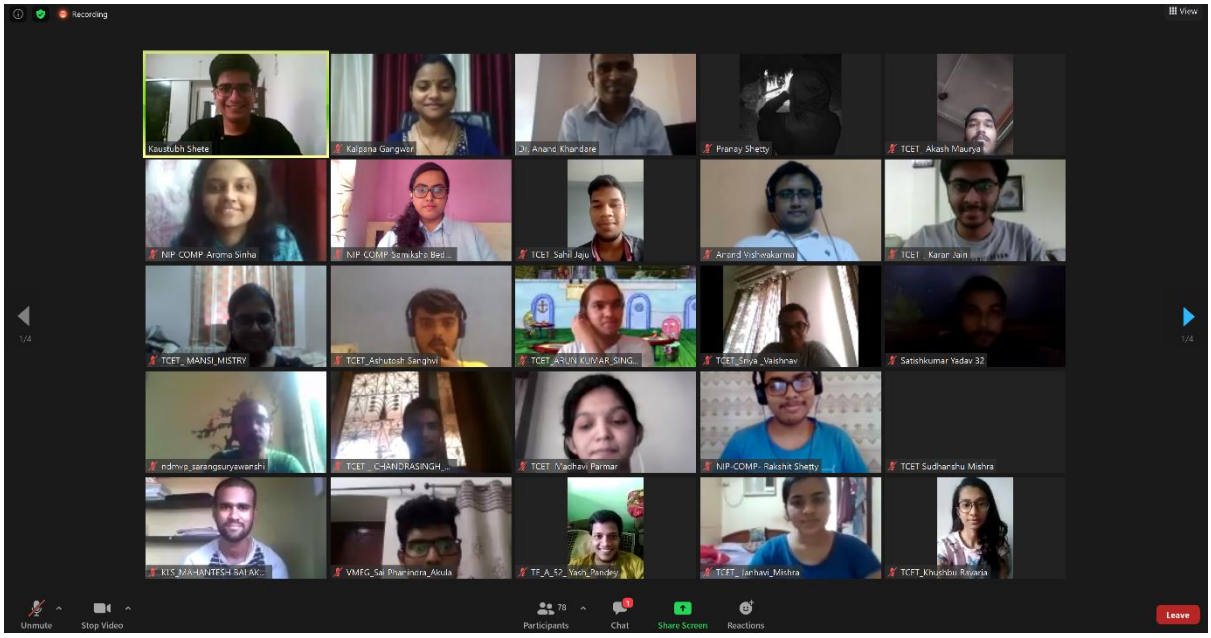
User Experience Design



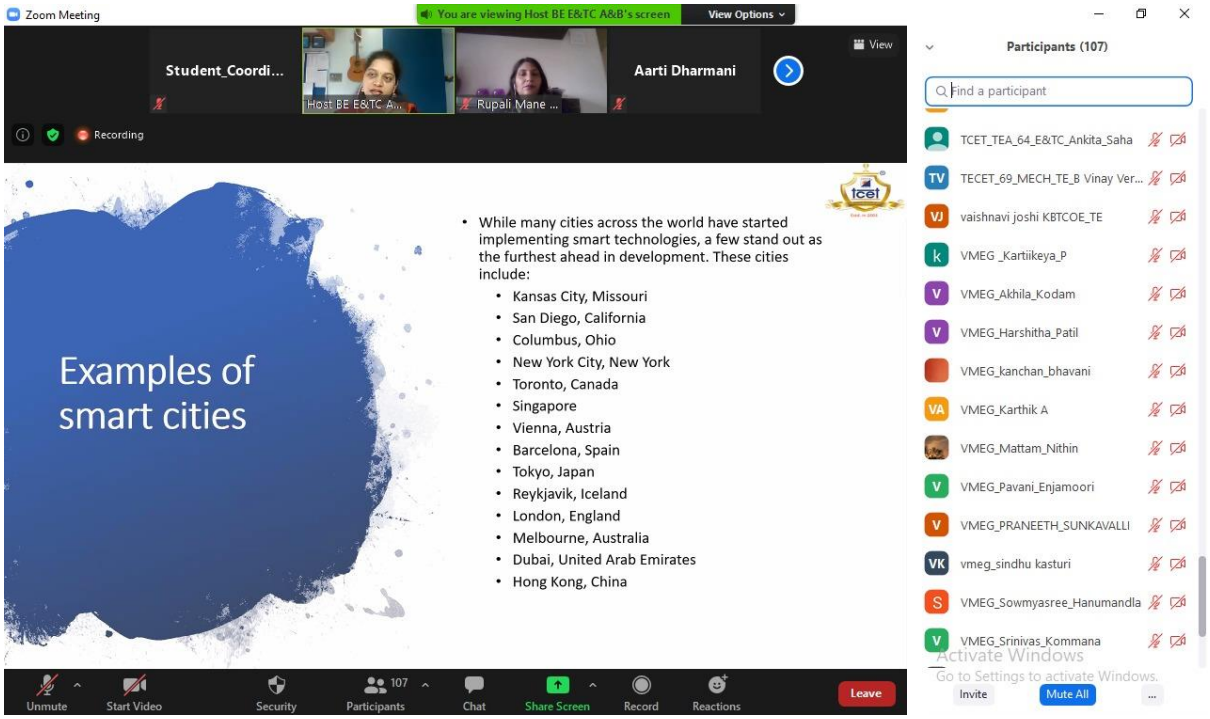


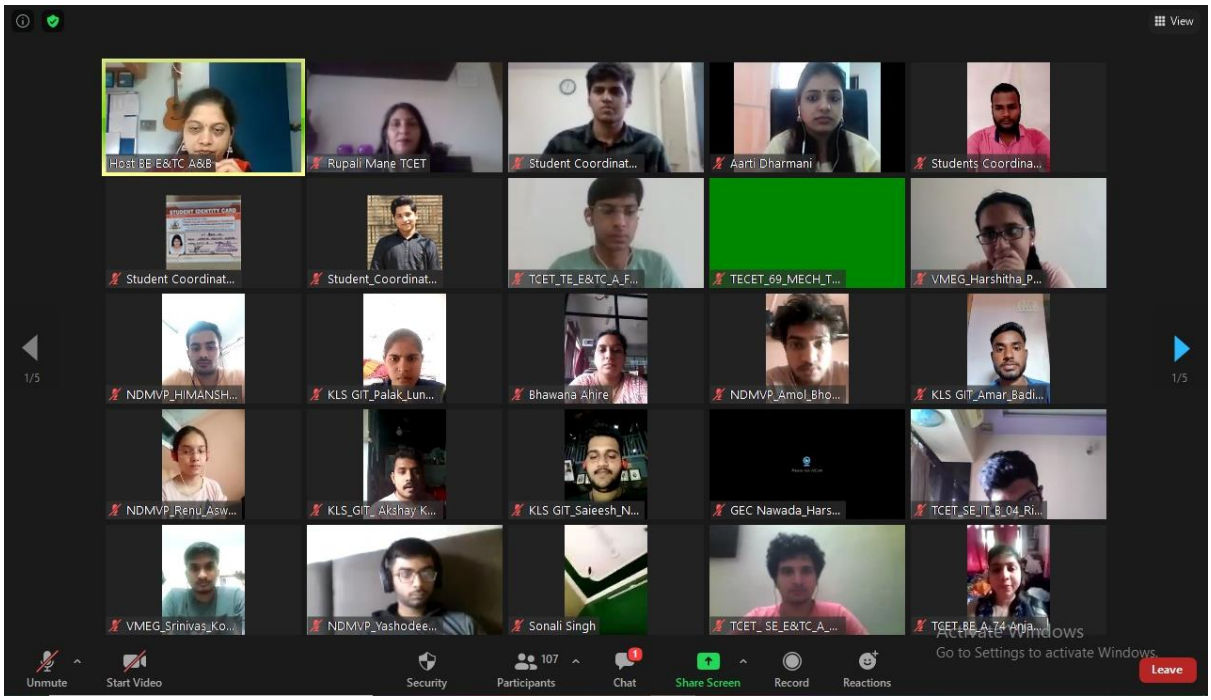
AWS Cloud Bootcamp



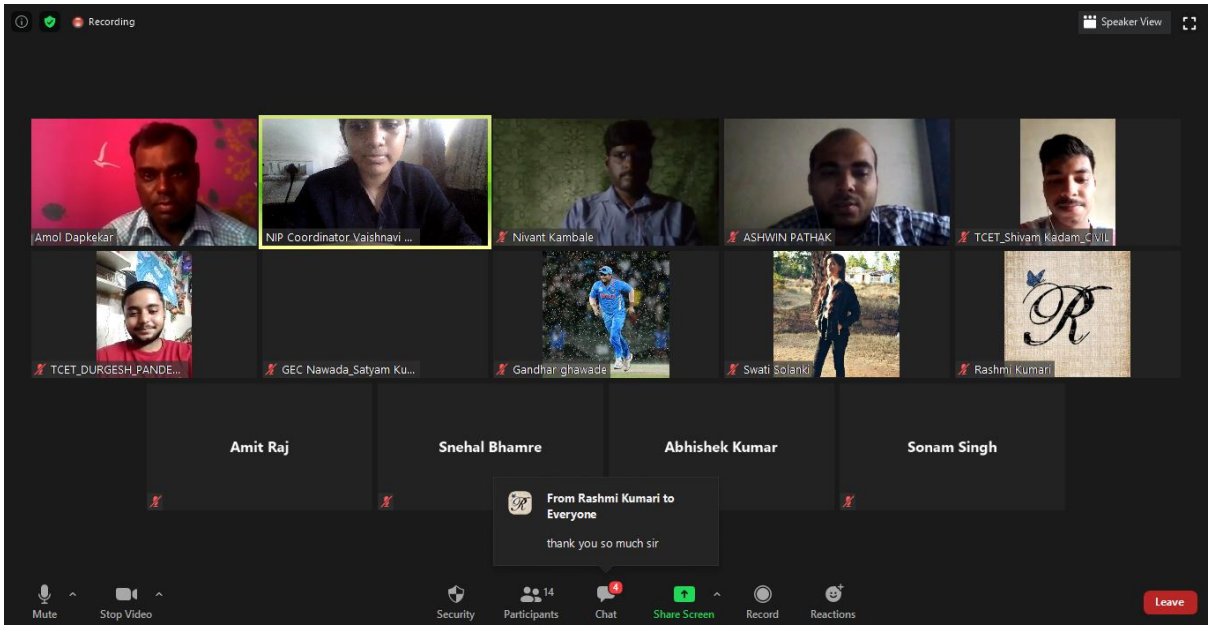


IOT for Smart Solutions

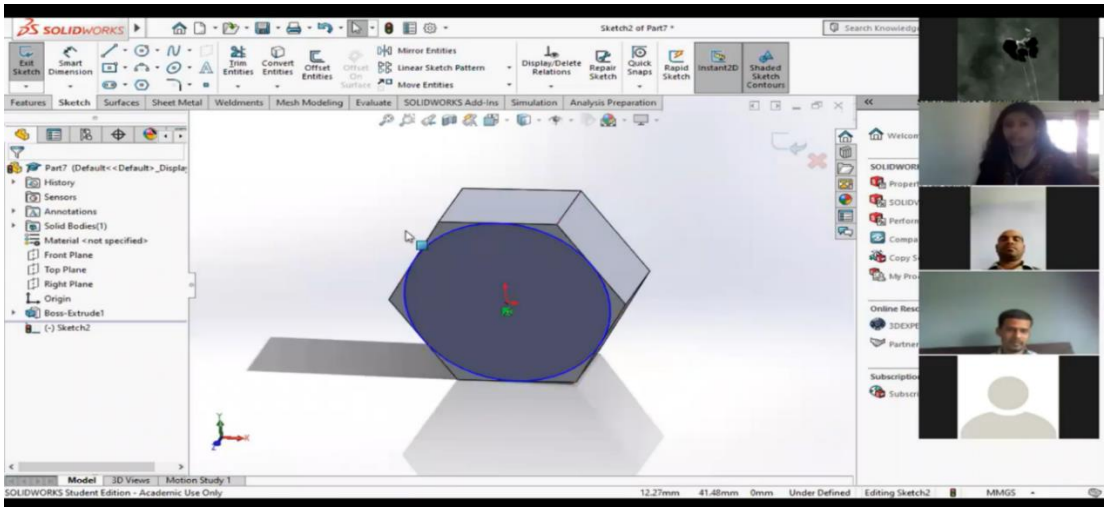


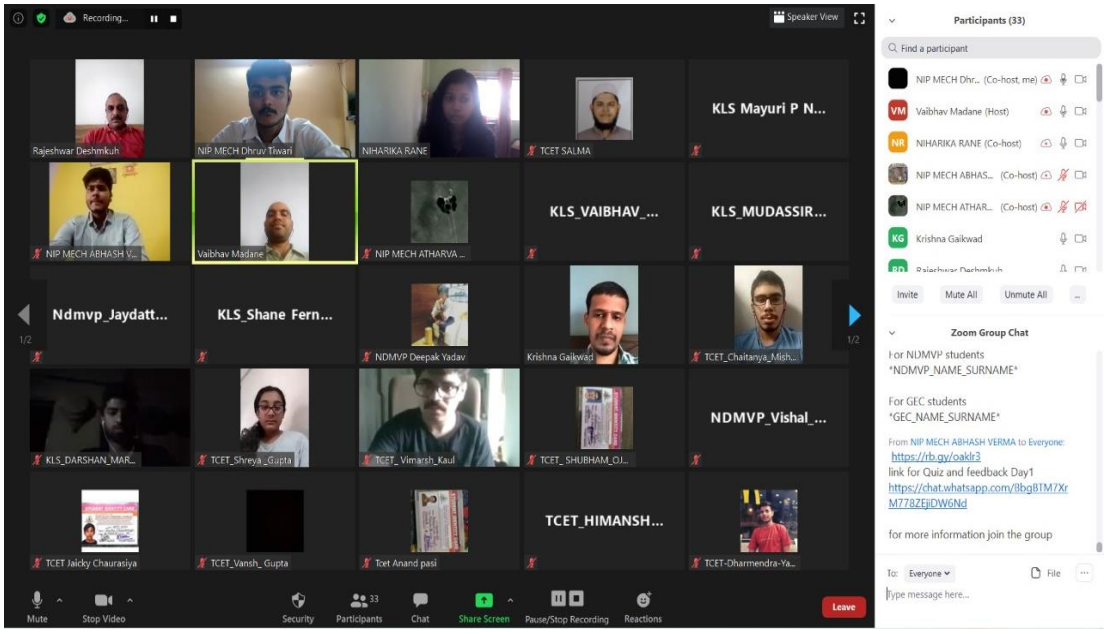


Leadership Development



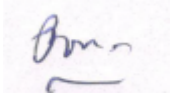
Basic of Solidworks





Valedictory Session

Outcome: This program was based on EBSB theme. Students were able adopt styles, customs and other aspects of the interdisciplinary learning approach, social culture of each other's institute which is aim of EBSB program along with learning technical skills regarding a latest technology. Hands on workshop helped students to learn collaboratively the latest branch specific topics. The program provided students and faculty members' collaboration from our institute with Student Exchange Partner Institutes all over the India a platform for collaborative project development and paper writing on branch specific recent trends. 126 Students and faculty members written 30 collaborative research papers as an outcome of this program.



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Principal, TCET