



KNOWLEDGE INCUBATION FOR TEQIP
IIT KANPUR

Winter Internship & Visiting Researcher Program 2019

December 16 – January 16, 2019



The Winter Internship and Visiting Researcher Program was held at IIT Kanpur from December 16 to January 16. Almost 1600 applications were received.

31 students and 6 faculty were selected for this program.

Visiting Researcher Program facilitated knowledge exchange between faculty members of IIT Kanpur and guest faculties/ PhD students. During their stay, they work with their host faculty at IIT Kanpur on research topics of mutual interest. *This is an excellent platform where faculty members from TEQIP institutes can interact with IIT Kanpur professors* and learn about each other's expertise, share knowledge and gain an appreciation of different professional cultures. Some of these collaborations have also resulted in published work.

Winter Internship Program is a short duration program but it helps incubate future research collaborations between students and faculty of IIT Kanpur. It aims at exposing selected students to the academic culture of IIT Kanpur and help them adopt new methods of learning their subject of interest. Selected students conducted their internships on approved topics given to them by their host faculty at IIT Kanpur.

This program is no more a mere internship program it has become a tool to connect motivated students and faculty to work together and share good research ideas and teaching techniques. Outcome being research papers, projects and collaborative research with IIT Kanpur faculty. This year some students and faculty were selected for an award for work conducted during their visit.

SELECTED VISITING RESEARCHERS

S. No	Name	Institute	Host Faculty at IIT Kanpur
1	Anshul Khandelwal	University College of Engineering Rawatbhata Road, Akelgarh Kota	Prof. Debopam Das
2	Sumit Kushwaha	KNIT Sultanpur	Prof. Vipul Arora
3	Kalyanamanohar Veeramallu	JNTU College of Engineering, Kakinada	Prof. J Ramkumar
4	Latha Maheswari K	PSG College of Technology, Coimbatore	Prof. Saikat Chakrabarti
5	Gaurav Srivastava	Institute of Engineering & Technology, Bundelkhand University	Prof. Mainak Das
6	K. Vani	PSG College of Technology, Coimbatore	Prof. Shankar Prawesh

SELECTED STUDENTS

S. No.	Name	Institute	Host at IIT Kanpur
1	Parth Thakkar	SVNIT Surat	Dr. Sidhhartha Panda
2	Meenakshi Ojha	MNIT Jaipur	Dr. Anandh Subramaniam
3	Shivam Seth	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. J. Ramkumar
4	Rishish Mishra	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Ashoke De
5	Saket Kumar	University College of Engineering and Technology (UCET) Vinoba Bhave University Hazaribag	Dr. Anish Upadhyaya
6	Alka Singh	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. M. Jaleel Akhtar

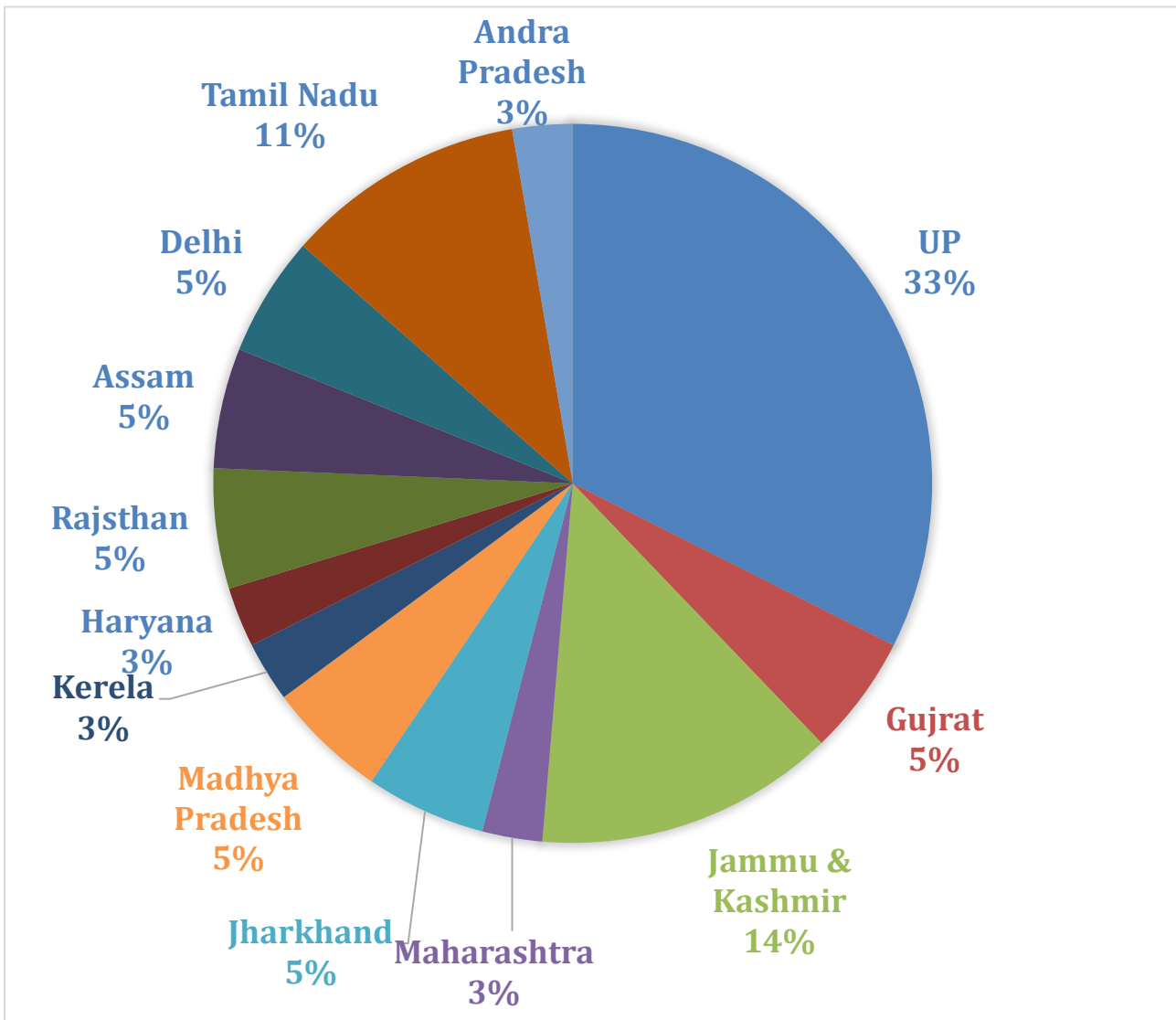
7	Pankaj Agarwal	NIT, Silchar	Dr. Ramprasad Potluri
8	Kunal Kumar	NIT, Silchar	Dr. Ramprasad Potluri.
9	Muneesa Rafiq	Isiamic University of Science & T Technology	Dr. Shivam Tripathi
10	Haiqa Parvaiz Koul	Isiamic University of Science & T Technology	Dr. Shivam Tripathi
11	Vaibhav Kumar	Delhi Technological University, Delhi	Dr. Ashutosh Modi
12	Rishil Shah	SVNIT Surat	Dr. Nishchal K Verma
13	Abdulhai Mohammadi	MANIT Bhopal	Dr. Abhishek Kumar Gupta
14	Abha Upadhyay	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Nishchal K Verma
15	Ghanshyam Varshney	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Shobit Omar
16	Vivek Dwivedi	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Tanmoy Mukhopadhyay
17	Ajeeth Kumar	Coimbatore Institute of Technology, Coimbatore	Dr. Vipul Arora
18	Amar Kumar	Chaibasa Engineering College, Chaibasa	Dr. Pramod Subramanyan
19	Neha Mohanta	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Ashoke De
20	Abhishek Kumar Yadav	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Pramod Subramanyan
21	Shubham Maurya	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Abhishek
22	Abdul Rouf	NIT Srinagar	Dr. Preeti Malakar
23	Insha Ishteyaq	Isiamic University of Science & Technology	Dr. M. Jaleel Akhter
24	Roshna B. Raj	School of Engineering,	Dr. Deepak Gupta, MSE

		Cochin University of Science of Technology	
25	Touseef Iqbal	NIT Srinagar	Dr. Hamim Zafar
26	Sahaj jain	Delhi Technological University	Dr. Ashutosh Modi
27	Akshay Deodhar	College of Engineering, Pune, Maharashtra	Dr. Swarnendu Biswas
28	MUNINDAR JIVARAM AHIR	NIT Trichy	Dr. Sudib Kumar Mishra
29	Neha Singh Sengar	Dr. APJ Abdul Kalam Technical University, Uttar Pradesh	Dr. Vipul Arora
30	Rahul Goel	Punjab Engineering College Chandigarh	Dr. Aashish Garg
31	Anusha Dubey	Rajiv Gandhi Proudyogiki Vishwavidy alaya, Madhya Pradesh	Dr. Nisheeth Srivasatav

PARTICIPATING INSTITUTES

S. No.	Institute Name	No. of Participants
1	Sardar Vallabhbhai National Institute of Technology, Surat (Gujrat)	2
2	Malaviya National Institute of Technology, Jaipur (Rajsthan)	1
3	AKTU, Lucknow (U.P.)	10
4	University College of Engineering and Technology, VBU, Hazaribag (Jharkhand)	1
5	National Institute of Technology, Silchar(Assam)	2
6	IUST, Awantipora, J&K	3
7	Delhi Technology University, Delhi (Delhi)	2
8	MANIT, Bhopal (MP)	1
9	Coimbatore Institute of Technology, Coimbatore (Tamil Nadu)	3
10	Chaibasa Engineering College, Chaibasa (Jharkhand)	1
11	NIT, Srinagar, J&K	2
12	School of Engineering, Cochin University of Science and Technology (kerala)	1
13	Punjab Engineering Collegen Chandigarh (Haryana)	1
14	College of Engineering, Pune (Maharashtra)	1
15	National Institute of Technology, Tiruchirappalli (Tamil Nadu)	1
16	Kamla Nehru Institute of Technology, Sultanpur (UP)	1
17	University College of Engineerig Kakinada, JNTUK Kakinada (Andhra Pradesh)	1
18	Rajsthan Technical University, Kota (Rajsthan)	1
19	IET, Bundelkhand University, Jhansi (UP)	1
20	Rajiv Gandhi Proudयोगiki Vishwavidyalaya, Madhya Pradesh	1
	Total	37

STATEWISE PARTICIPATION



TOTAL NO OF SELECTED FACULTY: 06

TOTAL NO OF SELECTED STUDENTS: 31

OUTCOME

Through programs like these KIT has created an excellent opportunity for students and faculty members of TEQIP institutes to learn new ideas and techniques to further develop their research/teaching skills. such initiatives give them an experience of working in a different academic setting and gather skills that will enhance their current work as well as future personal and professional plans.

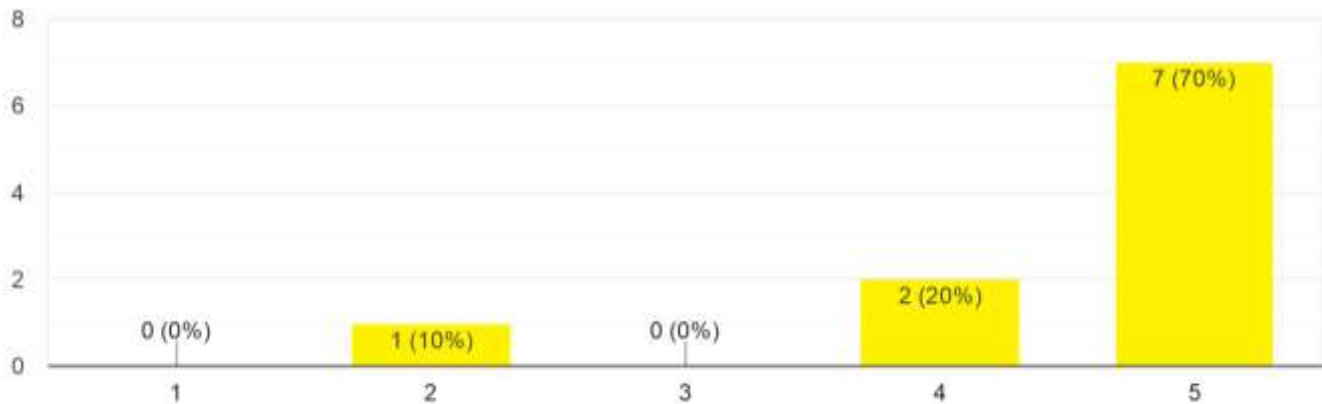
In past few years this program has evolved into a portal with the help of which TEQIP institutes and IIT Kanpur are forming foundations of productive research and knowledge exchange. The interactions through internships and visiting programs have been mutually beneficial for IIT Kanpur and TEQIP institutes as they have resulted in some published work and research collaborations.

This year several students from winter internship program were selected for long term research visit. KIT arranged for them to stay at IIT Kanpur and use the facilities to conduct collaborative work with their mentors.

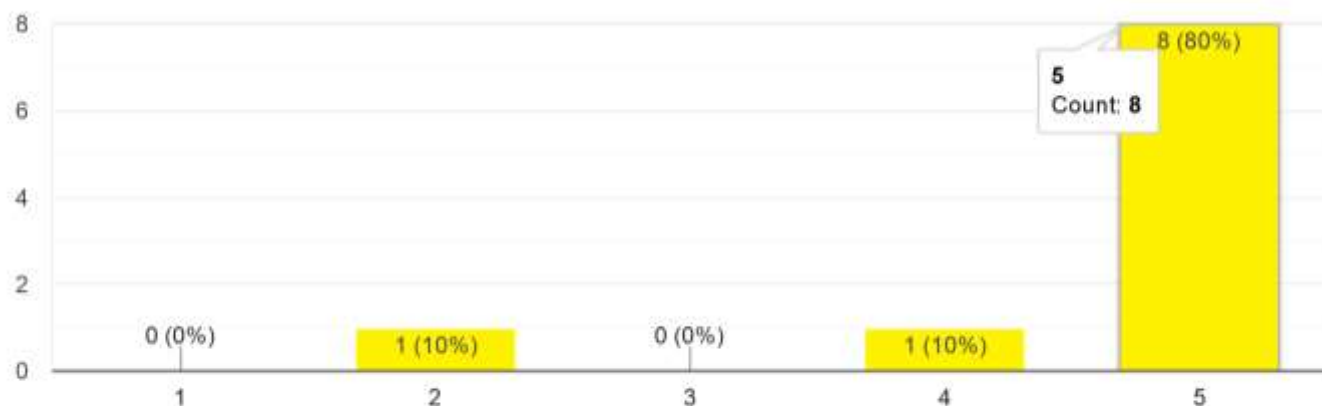
SUMMARY of FACULTY/PhD SCHOLAR FEEDBACK

Workshop

1. How satisfied were you with the event?



2. How relevant and helpful was this for your research?

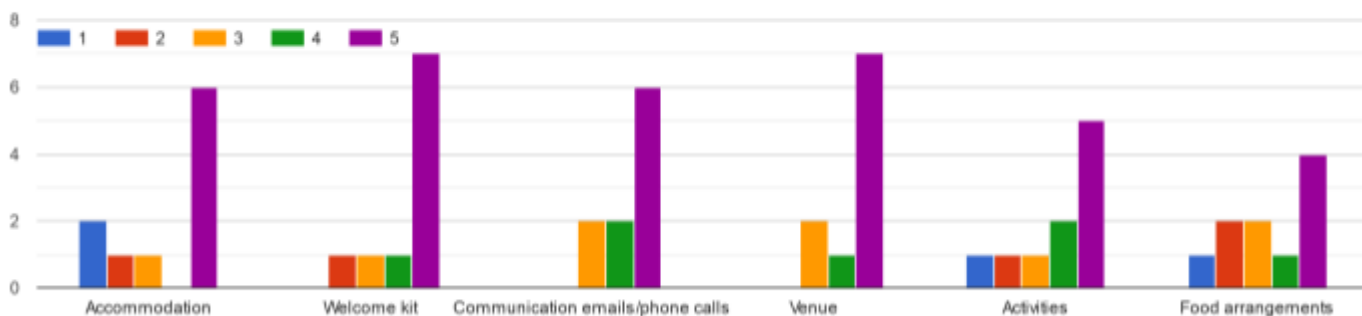


3. What were your key take-aways from this event?

- It provided an entire month when one could be free of distractions and focus on research alone.
- Exposure to quality faculty and state of art research methodologies
- Future research activities

- Knowledge about various facilities available in department and to enhance the facilities in our institute and also clear ideas which can used for future research and curriculum development.
- Practical implementation was the key
- I'm writing a paper on the work I've completed during the event.
- Skills in thin film transistor fabrication/measurement, time bound planning and execution of an experiment.

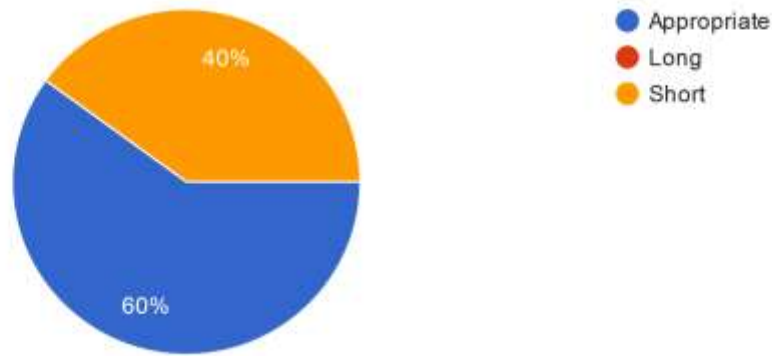
4. How satisfied were you with the logistics?



5. Additional feedback on logistics.

- Everything was fine. An orientation program in the beginning would have been helpful for newcomers.
- Hall 3 needs renovation plus lunch and dinner should have been arranged by the department.
- Transportation facility within the campus need to be improved.
- Had nice accommodation and the communication from TEQIP office was much faster. If library access had also been arranged then it might have been much useful for research. Facilities provided from department were excellent.
- The bag they have given is nice. Apart from that the closing ceremony was also good..
- very happy with all arrangements
- n/a
- Shifted the rooms/hostel three times during the stay. Heater facility was not provided.
- The accommodation could have been properly arranged
- Improve food quality and add some more variety in menu.

6. How satisfied were you with the duration of this program?



7. Suggest specific topic that you would like additional expert lectures on.

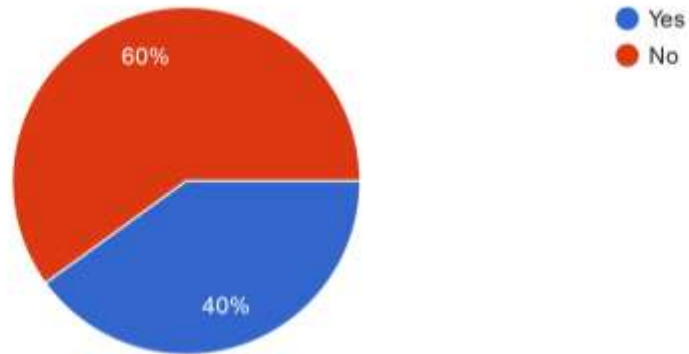
- Simulators in Fog Computing - iFogSim, YAFS etc.
- Friction, Tribology
- Renewable energy integration with hands-on experience with real time simulation packages.
- They should have more interaction with students...
- Semiconductor device modelling.
- Role of Artificial intelligence in healthcare

8. Any overall feedback suggestions?

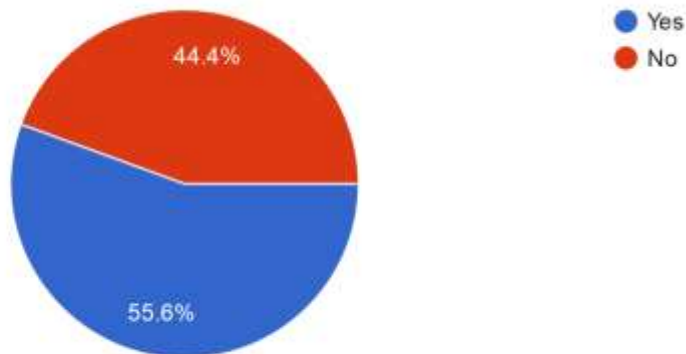
- It is quite useful to give exposure to outsiders about the environment at IITK.
- It was great to be at IIT Kanpur, we absolutely loved everything here and learned quite a lot of things!
- NA
- Excellent. Even though it's duration was short I learned a lot. TEQIP should organize such programs which will propagate the knowledge in the specialized domain.
- Well..overall it was good time. Thanks to the all staff members of TEQIP they were very nice. But one thing which I want to add is the fooding and accomdation should have better..
- Good program.
- Satisfactory

Teaching

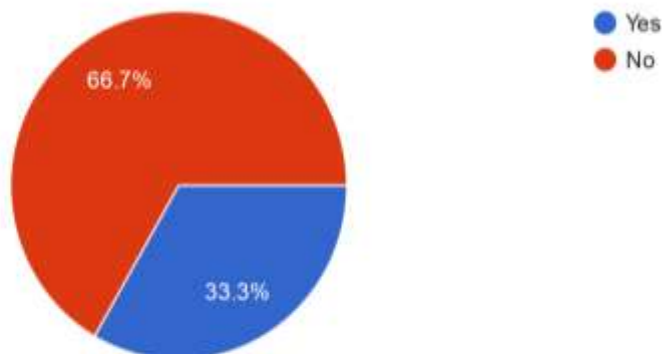
1. Do you have additional support for teaching (tutors, graders, teaching Assistant etc.)?



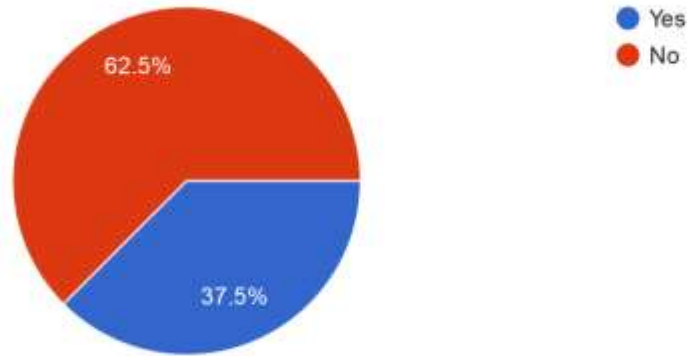
2. Do you give class projects for UG classes?



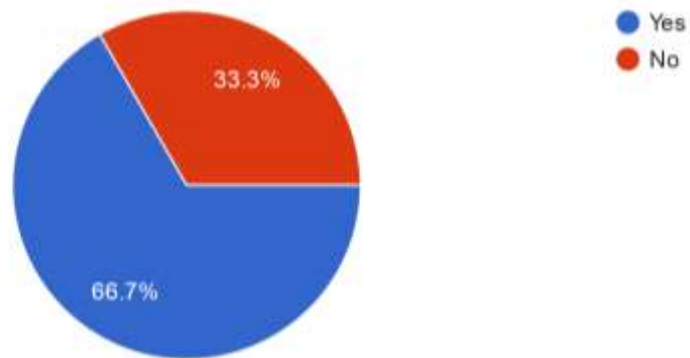
3. Do you give class projects for PG classes?



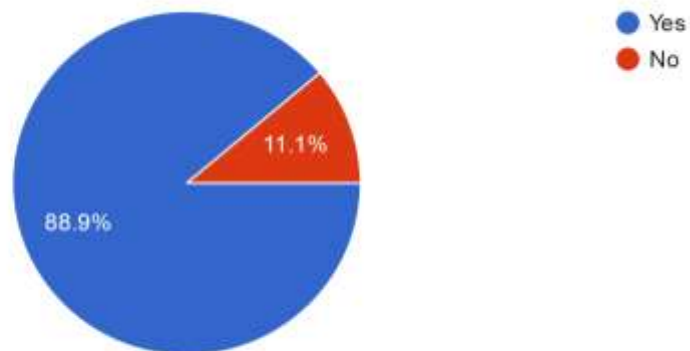
4. Do you have sufficient resources for laboratory courses?



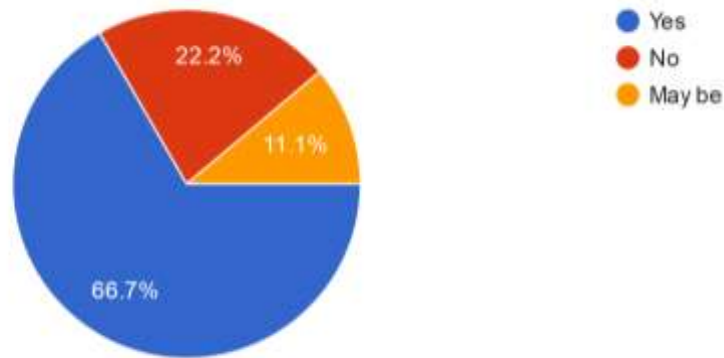
5. Is the library/journal/e-connection support adequate?



6. Would you like to have common (TEQIP) repository of course material?



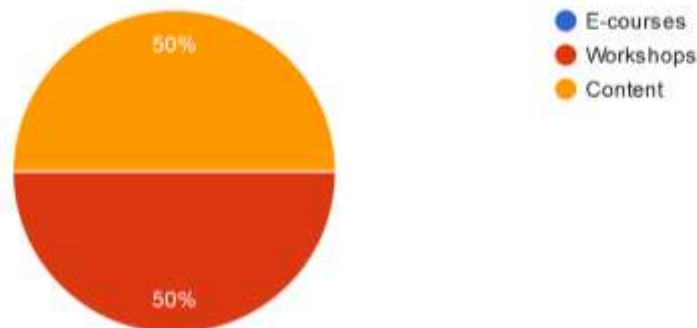
7. Would you like to visit IIT Kanpur to participate in and develop course material (existing or new)?



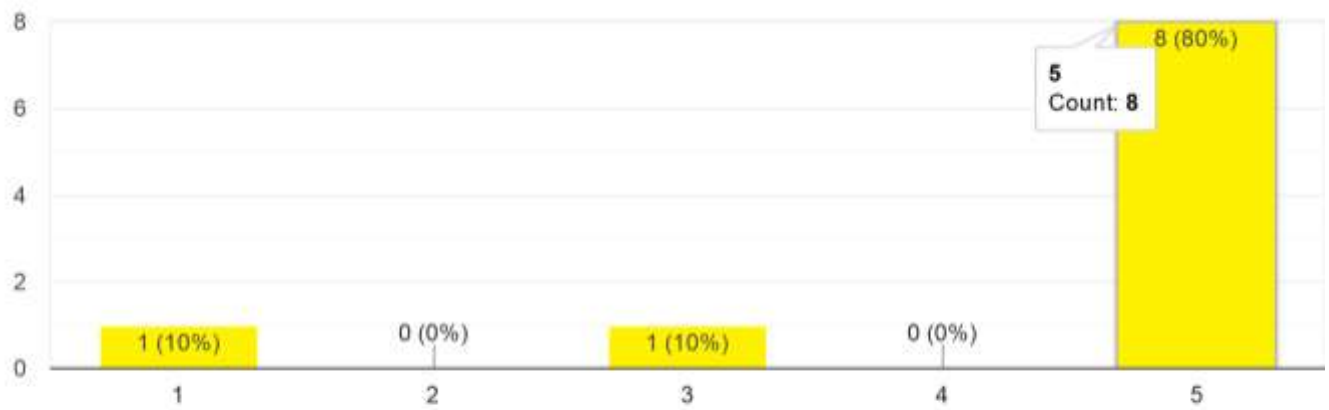
8. What would be ideal time of the year for you to come to IIT Kanpur for course material development?

- June
- January to February
- NA
- April - May
- Winter
- April - May 2020
- summer break
- Summer and winter vacations after semester break

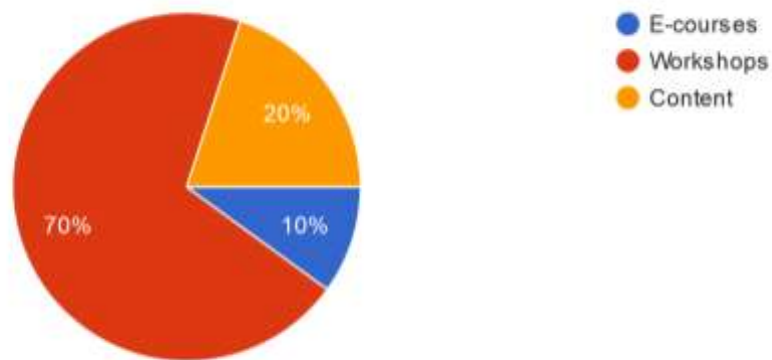
9. How can IIT Kanpur effectively help you prepare for teaching?



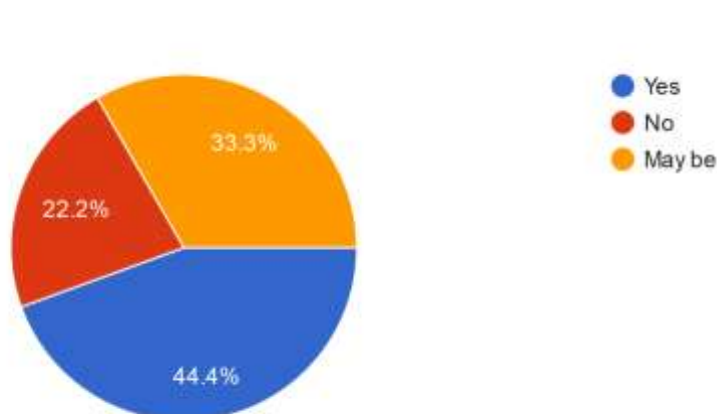
10. How relevant and helpful do you think this program was for your teaching/research?



11. How can IIT Kanpur effectively help you prepare for teaching?



12. Would you like to participate in creation of the repository material (course files/lab manuals, question bank etc.)



13. Which subject do you teach?

- Aerodynamics, Introduction to Aeronautics,
- Data structures, Design and analysis of algorithms, theory of computation, compiler design, computer Networks.
- Engineering Drawing, Mechanics of Solids, Advances in Manufacturing Technology, Metrology
- Power system protection, Smart Grid, Electromagnetic theory, Renewable energy sources, Generation transmission and distribution
- Machine Learning. Deep Learning. Algorithms operating system.
- Computer Architecture, Microprocessor and Interfacing, Embedded Systems
- microbiology, downstream processing
- Solid state electronics
- Microwave engineering
- Electronics engineering, signals and systems, artificial intelligence, communication systems

14. What is average student to teacher ratio in your institute?

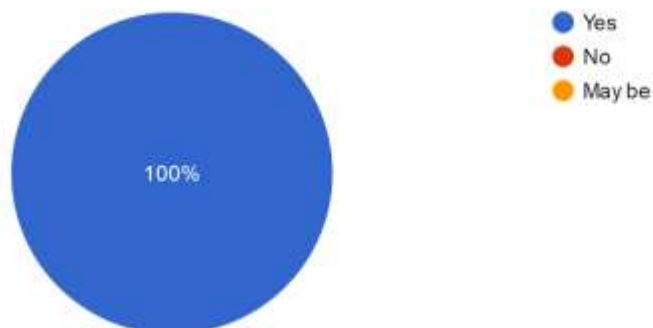
- 15:1
- 1:10
- 15:1
- 20:1
- 1: 40
- 1:16

15. How can TEQIP help improve your teaching?

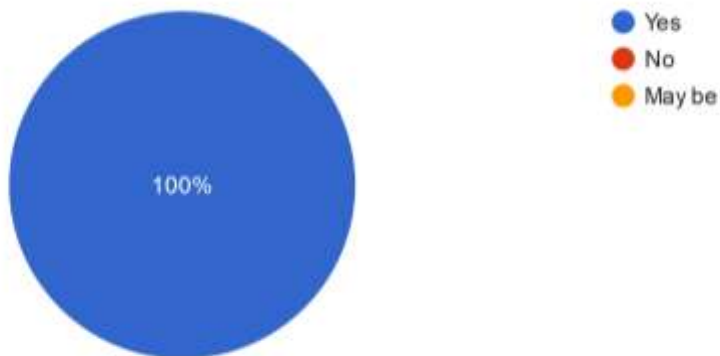
- By providing e-books and soft copies of course material, including assignments and sample exam papers.
- By providing trainings related to Current state of art technologies.
- To organise some expert lectures related to writing thesis, research papers
- Conduct pedagogy courses.
- We can have FDPs and presentation to present.
- Workshops can be conducted on how to muster enthusiasm from students towards self-learning
- by providing opportunities for online course development
- Through Workshops!
- By facilitating with the resources.
- Giving opportunity to teach in reputed institutions

Research

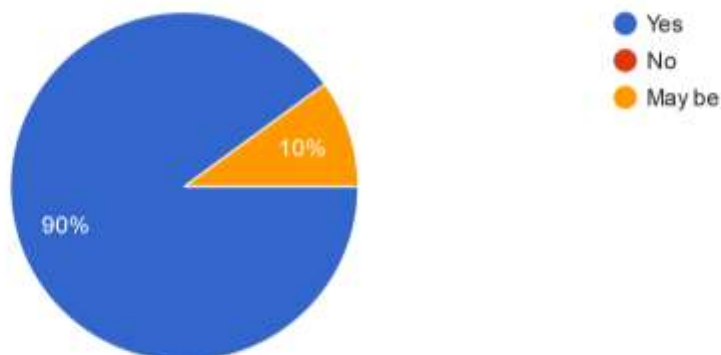
1. Would you like to visit an IIT for short visit/internship/post-doctoral stint, if offered (via TEQIP)



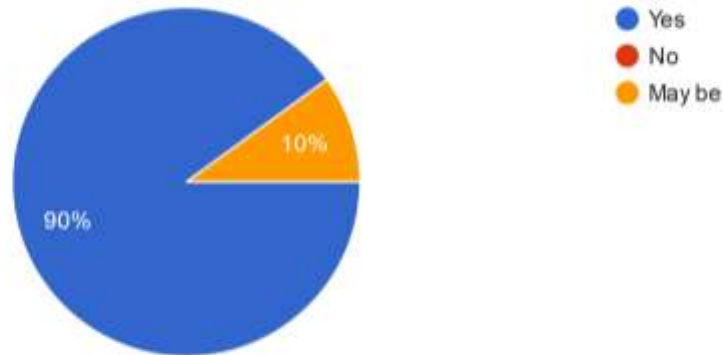
2. Would you like to share/use research infrastructure at IITK, if made available?



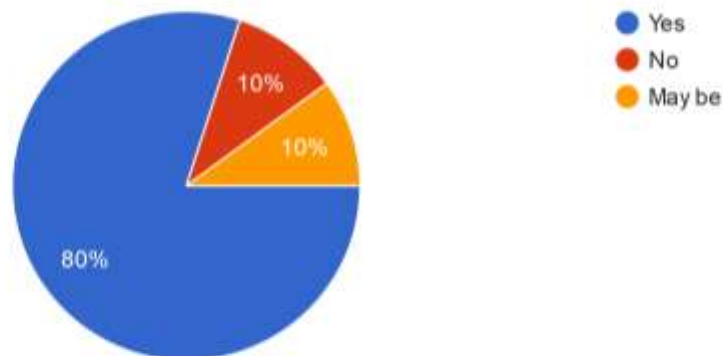
3. Would you like to conduct collaborative research with IIT Kanpur faculty?



4. Would you like lectures by experts (Indian and international) on niche research areas/topics?



5. Do you want special-topic conferences?



6. How can TEQIP improve your research?

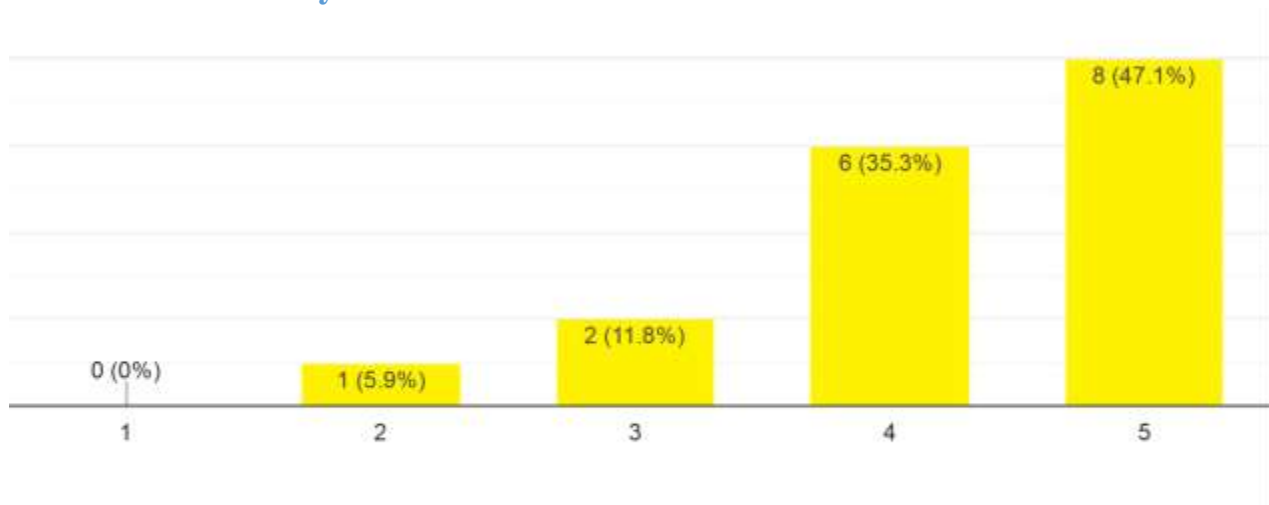
- Giving me opportunity to work here for long duration.
- By providing the computational resources
- Organize some expert talks related to defining a research problem, writing research papers, Ph.D thesis.
- By conducting short term courses on upcoming research areas and hands-on workshops to facilitate us to know the recent advancements in our field.

- By facilitating short visits like this, so that researchers may conduct experiments if needed, collaborate with faculties here, get suitable direction for their own research and get an exposure to the research environment here.
- By adequately providing all the resources required for the research.
- Kindly offer family accommodation for the participants so that we can associate and work at IITK campus for a longer duration of stay. (I am a participant with a two-year-old kid!)

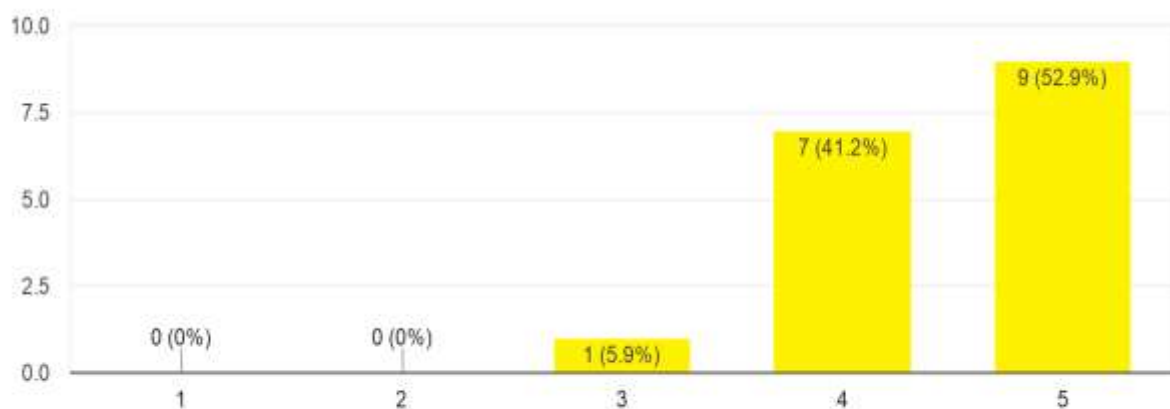
SUMMARY of STUDENT FEEDBACK

Workshop

1. How satisfied were you with the event?



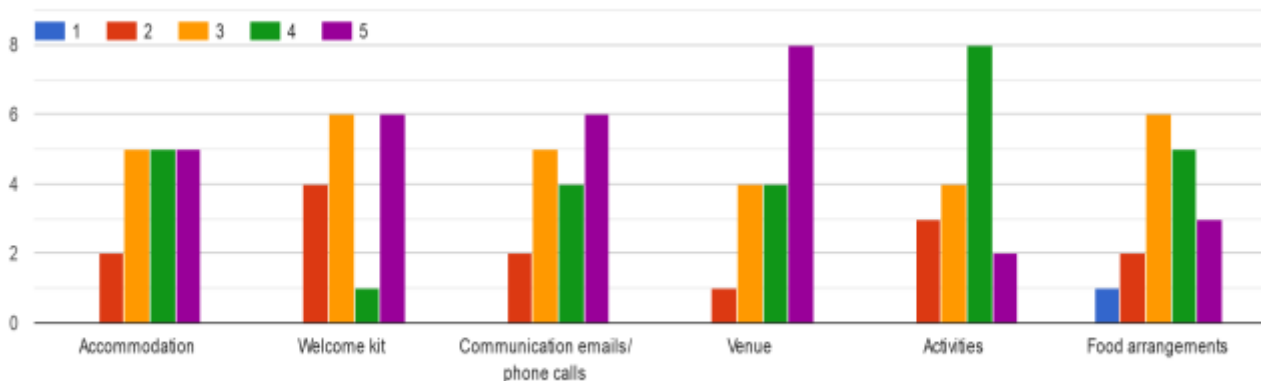
2. How relevant was it for your teaching or research?



3. Key take-aways from this program.

- Now I know how to do research in my field. Also I learn how to relate every field with each other. Also I know about that what is my strong and weak point relative to study which I have to improve and various other things to do further research.
- Practical knowledge and ideas on my interested topic.
- An understanding of how systems research works.
- Research culture in laboratories
- I believe the key take away for me was the introduction that I got of research papers .I feel as an ug student this is going to help me a lot in my future studies.
- I got introduced to research and learnt how to conduct experiments for the same.
- Research motivation.
- Motivation to work hard in the field of research
- research explore
- knowledge, experience and the joy of giving
- Application of AI into Aerospace
- I think attendance time should not be bounded.
- Got to learn new concepts of cyber security from the internship.
- Research in robotics field in new perspective.
- Gain the theoretical as well as practical knowledge regarding my research area.
- Knowledge, skill and how to solve research problem.
- Understanding the rigor for research, Procedure for writing a report, Mathematical modelling using MATLAB

4. How satisfied were you with the logistics?

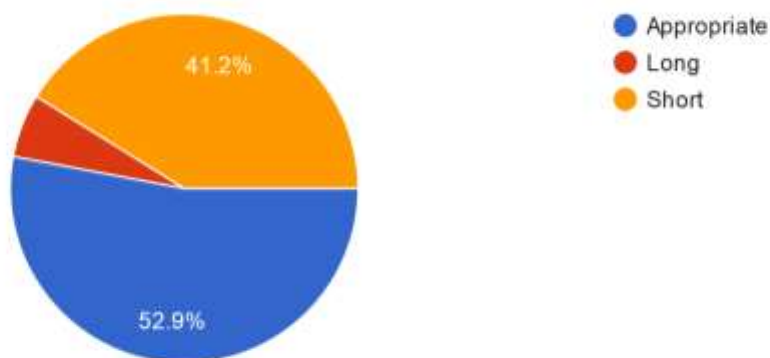


5. Additional feedback on logistics.

- According to me everything about logistics is fine, well and good.
- Can be improved.
- Make the reimbursement process clear. I am still in doubt about the amount that will be reimbursed.
- The logistics team was proactive and cooperative
- I believe that there should have more emphasis on the introductory workshops
- Good
- Practical work should be inculcated more than theoretical.
- nil
- nothing
- none
- N/A
- All are good enough as per our requirement.

- Everything was fine with TEQIP's part just the communication of the guide with the student should be more frequent and availability of labs to interns in Department of CSE should be tried and promoted.
- Hostel can be improved.
- Very good
- Certificate needs to be more precise to be useful in future research endeavours

6. How satisfied were you with the duration of this event?



7. Suggest specific topic that you would like additional expert lectures on.

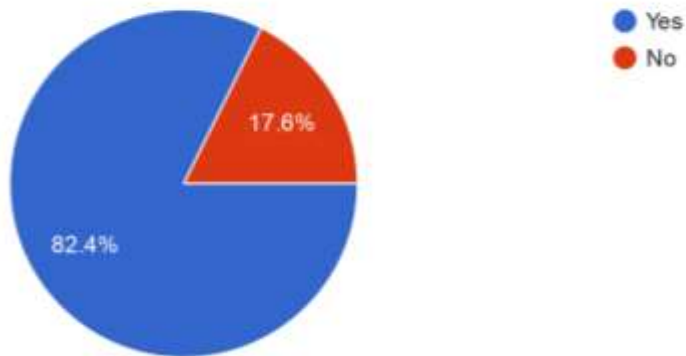
- Expert lectures on AI and ML
- Artificial Intelligence, Machine Learning, Data Analytics, Cloud Computing, etc
- Velocity profile for pipe flow
- Flood estimation using statistics
- Career development
- Machine learning in signal processing
- Robotics
- Electro chemistry, Power storage device (ex; Battery, Supercapacitor)
- Robotics and automation, Artificial intelligence
- Computer Vision, Robotic Navigation

8. Any overall feedback for the event?

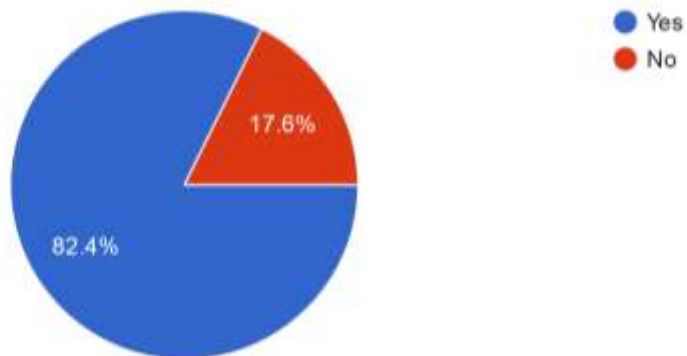
- It was a very good event. We learn lots of new things. Also I thankful to TEQIP team and TEQIP coordinator who manage every thing in a well manner.
- Thanks for selecting me in the Event and it will help me in Future.
- A very well organized event
- Overall things were very helpful. It improved my skills. It is a good platform for Non IITians.
- The event was very nice and I got to learn a lot of things (academic wise and personally too).
- Satisfactory
- first of all thanks to giving me opportunity to enhance my knowledge in particularly my research area, highly satisfied with TEQIP faculty as well as course professor and his team all are very supportive. So i request to TEQIP team please inform me that type of opportunity in future also.
- The arrangement of event is fantastic.

Learning

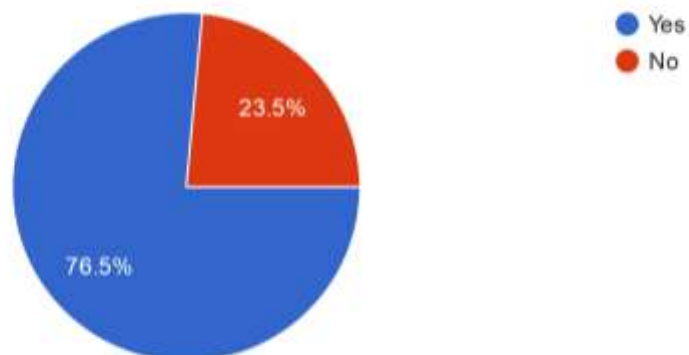
1. Do you get enough class projects?



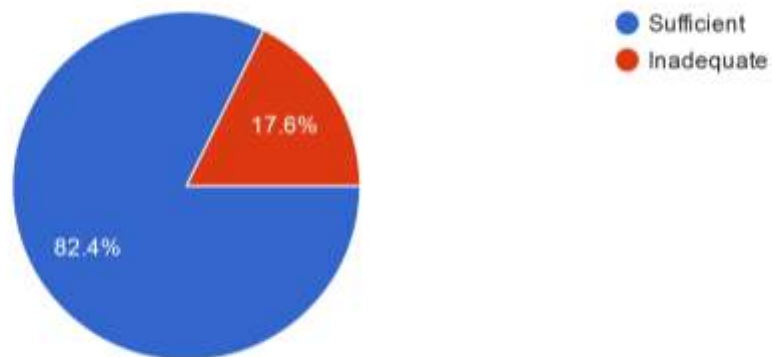
2. Is the learning adequate?



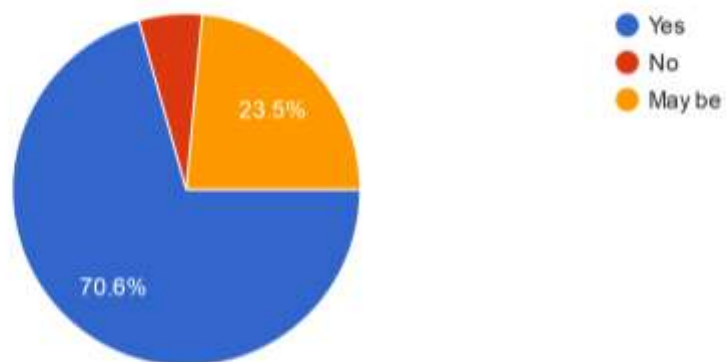
3. Do you have sufficient resources for laboratory courses?



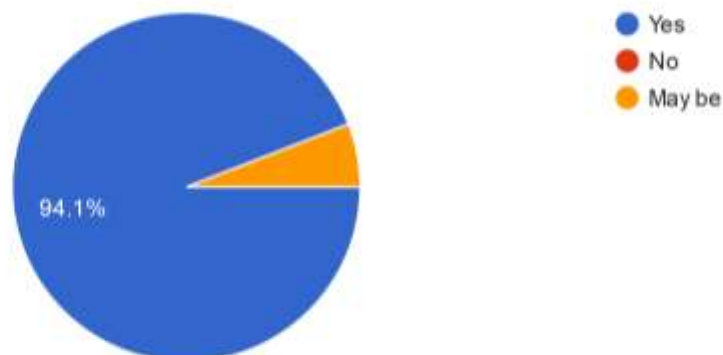
4. Is the library/journal/e-connection support adequate?



5. Would you like to have common (TEQIP) repository of course material?



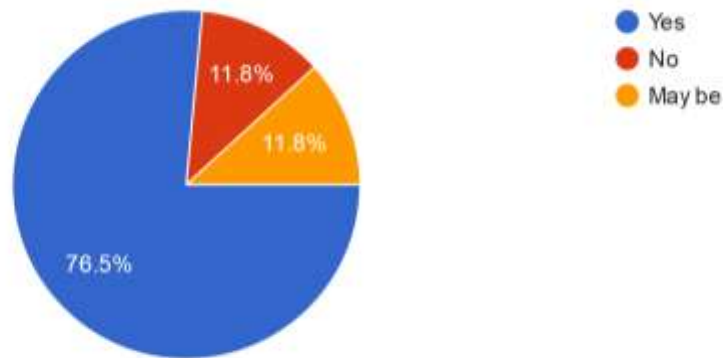
6. Would you like to visit IIT Kanpur to attend specialized courses?



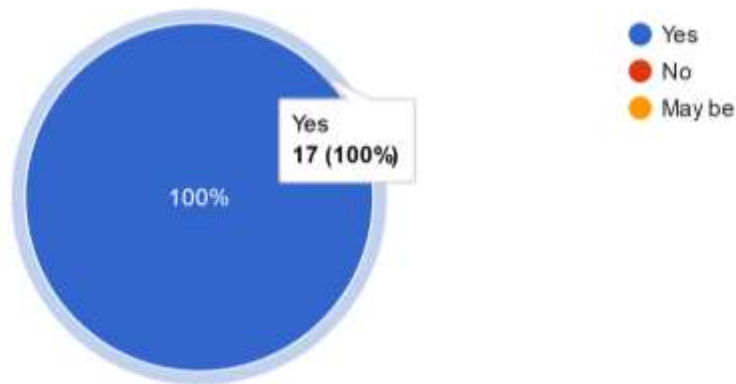
7. What is your area of specialization?

- Machine Learning
- Powder Metallurgy
- Programming
- Computer Engineering, interest is in Computing Systems
- Materials
- Hydrology
- Civil Engineering
- Control system, instrumentation, circuit designing.
- Brain Computer Interface
- Computer science and technology
- Artificial Intelligence
- Cyber Security.
- Robotics p
- Electro chemistry, Power storage device (ex; Battery, Supercapacitor)
- Mechatronics
- Deep Learning

8. Would you like MOOC/e-courses based courses?



9. Would you like IIT Kanpur faculty/other experts to visit your institute for lecture series, research and other collaboration?

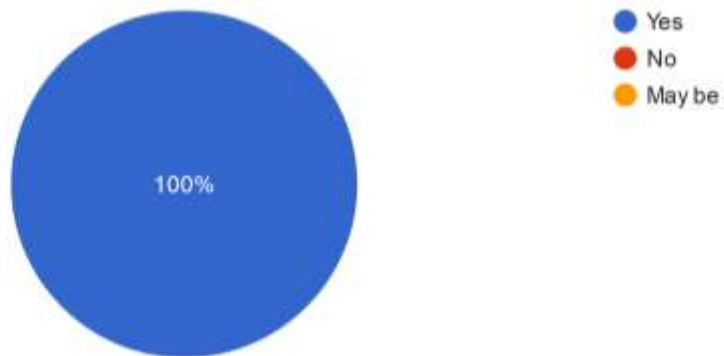


10. How can TEQIP help improve your learning?

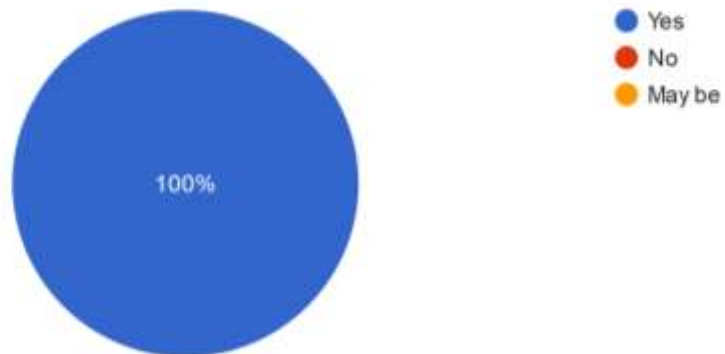
- TEQIP organises various courses in various fields which are free of cost for students. You can learn any thing which you want. Also interacting with professor gives you a suggestion about the current situation in engineering fields.
- TEQIP is one of the best Program it can help us in increasing our knowledge in various topics in which we are interested by arranging different such Programs for the learners.
- Collaborate with TEQUIP-III colleges to allow final year projects in collaboration with faculty from the IITs
- By organising online courses
- By providing more avenues for such internships where we can work under the guidance of professors and PhD scholars
- By organising similar internship programmes at institutions where students can make use of the resources and work on their projects.
- It can organise various platforms for research in which students should get full freedom to indulge into it without any acedemic schedule pressure.
- By increasing the opportunities for collaboration.
- help to provide lab materials which is not available in colleges
- TEQUIP should publicise its events to a larger extent so that even more students are able to attend the program
- By conducting more such events throughout the year
- TEQIP should also provide things for those people who want to work under host faculty for 6 months or may be for a year.
- TEQIP has provided me an opportunity to learn a lot within a month. I would like to continue the work which i had started with my guide during the internship. Also i would like TEQIP to provide a way of communicating with my guide in IITK after the program so that i could continue with him on doing some more skill based learning stuff. Also TEQIP should provide a some fixed kind of learning resources where learning could be student friendly.
- By motivating towards research
- I am working on power storage devices (eg. battery, supercapacitor) and IIT Kanpur have good instrumentation facilities related to this So I want the support of TEQIP for help me to getting permission to use IIT Kanpur facilities (fabrication tools). It will very much helpful for my research area.
- By getting expert guidance.
- By providing funding for research projects, Faculty collaboration with students for research papers

Research

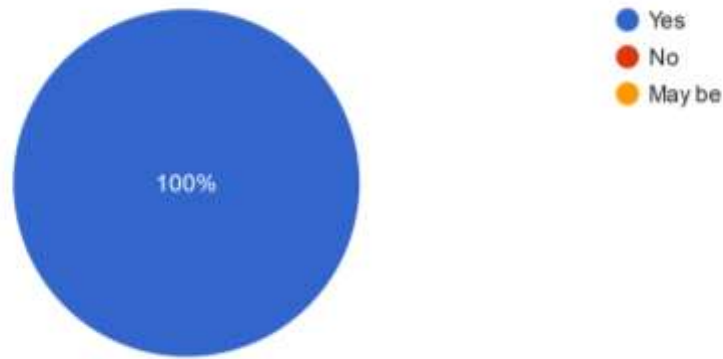
1. Would you like to visit an IIT for short visit/internship/post-doctoral stint, if offered (via TEQIP)



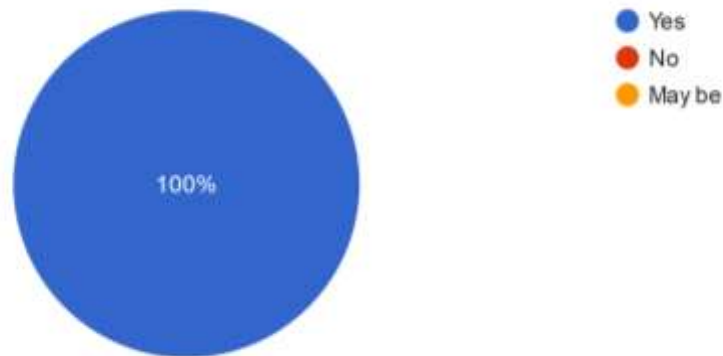
2. Would you like to share/use research infrastructure at IITK, if made available?



3. Would you like to conduct collaborative research with IIT Kanpur faculty?



4. Would you like lectures by experts (Indian and international) on niche research areas/topics?



5. Do you want special-topic conferences?



6. How can TEQIP improve your research?

- As a student from college which is not much developed there are no such advance laboratories are available but due to TEQIP we get the exposure of advance laboratories and do our research as we wanted. Also, research extension is also provided by the TEQIP and they provide every facility which are required.

- TEQIP can organise different research workshop, conference and programs through which the Researcher got more knowledge and ideas on their research.
- Provide students with remote collaboration with IITK faculty.
- By organising special lecture sessions related to research
- By providing experimental setup to do experiments, which are not available in my own university lab
- By organising more internships for longer durations.
- TEQIP can organise various scholarship based on merit for research purpose.
- By giving us resources and connection at the right time.
- improve knowledge
- None
- Easy allocation of funds
- It should also encourage faculties to work with interns for research paper.
- I wanted to continue my work with my professor and learn some more skill-based things and enhance my skills so that I could do some real-life research, at least the resources and the guide should be available to help whenever required after the winter internship. Also, we must be allowed within labs with permission from TEQIP during the internship. Also please try to provide extension to students who are willing to extend their work so that they get to learn some more.
- By motivation and providing opportunities for collaboration.
- By provide us the permission to use IIT Kanpur fabrication (instrument, tools) facilities related to my research area.
- The TEQIP event help me during my internship by providing lab facilities and expert guidance.
- By providing funding for research projects, Faculty collaboration with students for research papers