



KNOWLEDGE INCUBATION FOR TEQIP, IIT KANPUR

Summer Internship & Visiting Researcher Program 2016



KIT IIT Kanpur organized Summer Internship & Visiting Researcher Programme again in 2016 due to the huge success of the past two summer internship programs in 2014 and 2015. This program was offered in all the departments at IIT Kanpur. We received 12 applications of faculty and 92 applications of students from different QC institutions across the country for this program. Out of them 4 faculty and 24 students were selected. With this program students and faculty from our QC institution got a chance to do work together at IIT Kanpur with experts on their particular area along with practical exposure. The aim of this program was to enhance the technical knowledge and improve their research and teaching skills.

Visiting Researchers

S.No	Name	University	Research topics	Work with	Duration of stay
1	Dr. Alfia Bano	NIT Raipur	Buckling Response of Laminate Plates under In-plane Shear Load	Dr. PM Mohite	01 - 27 June, 2016
2	Mr. Manwendra	NIT Raipur	Experimental techniques in Corrosion Engineering	Prof. K. Mondal	15 June – 04 July, 2016
3	Mr.V S Nagendra Reddy B	NIT Kurukshetra	Design of Compliant Topologies for special deformation characteristics	Dr. Anupam Saxena	8 June – 15 July, 2016
4	Mr. Rajesh Kumar	NIT Kurukshetra	Computational Modelling of Solidification and Melting Using Open Source Code	Dr. Arvind Kumar	13 June – 15 July, 2016

Summer Internship Students

S.No	Name	University	Internship Subject	Worked under	Duration of Stay
1	Ganesh Singh Yadav	BIET Jhansi	Study of Water Jet Machining and Its Future Trends	Prof. J Ramkumar	02 May – 11 July, 2016
2	Roopali Agarwal	HBTI	Antenna Selection scheme for SC-FDMA Massive MIMO System	Prof. A.K.Chaturvedi	02 May – 15 July, 2016
3	Kamal Singh Rawat	GBPUAT Pantnagar	Numerical Investigation of Ice Slurry flow	Dr. Arvind Kumar	02 May – 15 July, 2016
4	Afzal Amanullah	AMU	Using D-Q transformation to control the speed of BLDC motor	Dr.Ramprasad Potluri	02 May – 15 July, 2016

5	Mo. Aslam Husain	AMU	Hardware in loop realization of Solar PV MPPT scheme using RTDS and DSP	Dr. Sandeep Anand	05 May – 15 July, 2016
6	Brijesh Kumar Singh	MMMUT Gorakhpur	Study of Electric Discharge Machining and Develop a set-up for Electric Discharge cutting	Prof. J Ramkumar	02 May – 15 July, 2016
7	Sandeep Kumar	PEC University, Chandigarh	Not Completed	Dr. Nishchal K Verma,	-
8	Sonam Goyal	PEC University Chandigarh	Stimulation of TCP over UDP	Dr. R K Ghosh	02 May – 15 July, 2016
9	Sonia Uttreja	PEC University Chandigarh			02 May – 15 July, 2016
10	Sumandeep kaur	PEC University Chandigarh			02 May – 15 July, 2016
11	Manis	MNNIT Allahabad	Aesthetic theory within the precincts of English studies	Dr. Mini Chandran	19 May – 15 July, 2016
12	Mudit Kumar Singh	MNNIT Allahabad	Participatory Rural Development in India	Prof. A.K.Sharma	19 May – 15 July, 2016
13	Gyan Prabhakar	KNIT Sultanpur	Low Noise Amplifier for Communication System	Dr. Yogesh Singh Chauhan	08 May – 15 July, 2016
14	Alesh Kumar	NIT Kurukshetra	Synthesis, Characterization and Mechanical Properties of Hydroxyapatite and Bioglass	Prof. Kantesh Balani	30 May – 15 July, 2016
15	Tanvi Pareek	NIT Kurukshetra	Synthesis and characterization of Si Nanowires by Metal assisted Chemical etching	Dr. Sarang Ingole	26 May – 15 July, 2016
16	Saurabh Pareek	NIT Kurukshetra	Graphitic Carbon Nitride (g-C ₃ N ₄) A Promising 2D Material	Prof. Y N Mohapatra	26 May – 15 July, 2016
17	Manish Suyal	BTKIT Dwarahat	Mechanical Modelling of 2D Woven Fibre Composites & Analysis of 3D Woven Fibre Composite Models	Dr. P M Mohite	09 June – 15 July, 2016
18	Nikhil Pandita	BTKIT Dwarahat			09 June – 15 July, 2016

19	Pankaj Bisht	BTKIT Dwarahat	Vertical Axis Wind Turbine	Dr. Abhishek	10 June – 15 July, 2016
20	Rohit Joshi	BTKIT Dwarahat			10 June – 15 July, 2016
21	Gunjan Joshi	BTKIT Dwarahat	Design and Simulation of fluid flow through the various shapes of microchannels	Prof S. Bhattacharya	09 June – 15 July, 2016
22	Prerna Chimwal	BTKIT Dwarahat	Experimental study of Electrochemical Micromachining	Prof S. Bhattacharya	09 June – 15 July, 2016
23	Taresh Kala	BTKIT Dwarahat	Power Generation By Mechanical Input	Prof. J Ramkumar	09 June – 15 July, 2016
24	Jaydeep Chandra	BTKIT Dwarahat			10 June – 15 July, 2016

Summary of Faculty Feedback

Workshop

<i>Questions</i>	<i>Excellent</i>	<i>Good</i>	<i>Ordinary</i>
Clarity of communication about workshop	02	01	00
Organization of the program	03	00	00
Effectiveness of learning experience	03	00	00
	<i>Appropriate</i>	<i>Short</i>	<i>long</i>
Duration of program	03	00	00
	<i>Definitely</i>	<i>Maybe</i>	<i>No</i>
Would you like to have more such program?	03	00	00
Additional Suggestions			

Teaching

Which subjects do you teach?	<ul style="list-style-type: none"> • Corrosion Engineering • Photovoltaic • Surface Engineering • Structural Engineering • Finite Element Methods • Earthquake Engineering. • Heat Transfer • CAD, SOM
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What is average student to teacher ratio in your institute?	<ul style="list-style-type: none"> • 30:01 • 25:01 			
Questions	YES		NO	
Do you have additional support for teaching (tutors, graders, teaching Assistants, etc.)?	02		02	
Do you give class projects for UG classes?	04		00	
Do you give class projects for PG classes?	02		00	
Do you have sufficient resources for laboratory courses?	00		04	
	Sufficient		Inadequate	
Is the library/journal/e-connection support adequate?	02		02	
	Definitely	May be	No	
Would you like to have common (TEQIP) repository of course material?	04	00	00	
Would you like to visit IITK to participate in and develop course material (existing or new)	04	00	00	
Would you like to participate in creation of the repository material (course files/lab. Manuals/question bank/etc)	04	00	00	
	e-courses	Workshops	Content	none
How can IITK effectively help you prepare for teaching?	04	02	02	00
How can TEQIP help improve your teaching?	<ul style="list-style-type: none"> • Support in collaborative research will improve my teaching. • By improving lab Facilities and teaching aid facilities • More teaching aids may be provided 			

Research

Questions	Definitely	Maybe	No
Would you like to visit an IIT for a visiting-faculty/ post-doctoral fellow, if offered (via-TEQIP)?	04	00	00

Would you like to share/use research infrastructure at IITK, if made available?	04	00	00
Would you like to conduct collaborative research with IITK?	04	00	00
Would you like lectures by experts (Indian and international) on niche research areas/topics?	04	00	00
Do you want special-topic conferences?	03	01	00
How can TEQIP help improve your research?	<ul style="list-style-type: none"> • Opportunity to do collaborative research. Say, for instance joint supervision of a doctoral and master students. Prof. Kallol Mondal has agreed in principal for the same. • Providing more for research. • Conducting more workshops/short term courses. 		

Summary of Student Feedback

Workshop

<i>Questions</i>	<i>Excellent</i>	<i>Good</i>	<i>Ordinary</i>
Clarity of communication about the program	15	06	00
Organization of program	14	03	01
Effectiveness of program	13	05	01
Effectiveness of learning experience	15	02	01
	<i>Appropriate</i>	<i>Short</i>	<i>Long</i>
Duration of program	15	04	00

Additional Suggestions	<ul style="list-style-type: none"> • Organize various courses which will be helpful in research program with ease. • Good learning during this term, various skills were imparted. • Real time working environment needed. • Apparatus and equipments needed for the experiment • Courses which include summer internship topics will be very helpful in doing research, if conducted by TEQIP. • Short term courses may be beneficial to us if conducted by TEQIP. So if you can organize them we will attend them. • In case a person is not able to finish this work during this time, he/she should be allowed or should be given extension. • Video and lectures of new research topics.
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Learning

<i>Questions</i>	<i>Yes</i>	<i>No</i>
Do you get enough class projects?	21	01
Is the learning adequate?	23	00
Do you have sufficient resources for laboratory	21	01
What is your area of specialization	<ul style="list-style-type: none"> • CFD simulation, Heat Transfer • Automobile and Internal combustion engine. • Thermal & Aerodynamics branch. • Thermal Engineering • Material science and nanotechnology. • Solar PV (MPPT), power electronics. • Computer Networks. • Manufacturing • VLSI design • Manufacturing science, computer integrated manufacturing, 	

	unconventional manufacturing <ul style="list-style-type: none"> • Practical application of control. • Wireless Communication. • Material Sciences. • Rural development and participation • Conventional and non conventional machining process. 		
	<i>Sufficient</i>		<i>inadequate</i>
Is the library/journal support/e-connection adequate?	23		00
	<i>Definitely</i>	<i>Maybe</i>	<i>No</i>
Would you like to have common (TEQIP) repository of course material?	19	04	00
Would you like to visit IITK to attend specialized courses?	21	02	00
Would you like MOOCS/e-resources based courses?	16	05	00
How can TEQIP help improve your learning?	<ul style="list-style-type: none"> • By organising short term courses on regular basis. • Arranging such courses regularly with sufficient projects and resources. • By organizing various courses which can impart technical skills to students. • Good learning during this term, various skills were imparted. • By providing sufficient number of guides and co-guide. • By organizing short term courses regular interval. • By providing this educational platform for learning. • Through TEQIP I got a chance to work here and learn a lot about networking. • Thanks TEQIP for inviting us in IITK. Learning can be improved by doing research work here. • By providing the platform like IIT (Enriched Facilities) • This is the platform where researcher can utilize the resources, so keep it more with advances workshop. • Also provide some course work classes. 		

	<ul style="list-style-type: none"> • Support providing • By provided experimental setup. • Sponsoring course works and access to online materials. • Keeping me up to date with the schedule of programmes being conducted.
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Research

<i>Questions</i>	<i>Definitely</i>	<i>Maybe</i>	<i>No</i>
Would you like to visit an IIT for a short visit /internship/post-doctoral stint, if offered (via TEOIP)?	22	01	00
Would you like to share/use research infrastructure at IITK, if made available?	24	00	00
Would you like to conduct collaborative research with IITK faculty?	17	07	00
Would you like lectures by experts (Indian and international) on niche research areas/topics?	24	00	00
Do you want special-topic conferences?	12	11	00
How can TEQIP improve your research ?	<ul style="list-style-type: none"> • Could be improves by e-linking network from IITK here guidance group. • Could be improve by more programmes and visit to institute like KIT. • It provide friendly, educational environment to enhance my research quality but still more access to the library is require. • TEQIP has given me a chance work here and to learn something. I learnt so many things from here. Thank you TEQIP for this. • TEQIP has given us a great opportunity by inviting us to IITK for summer internship. • By giving opportunity to come to IITK. • Should provide access to library. • By providing the facilities fooding, lodging and good platform to learn 		

	<p>and experience the working in good environment.</p> <ul style="list-style-type: none"> • I would like to inform you that please one workshop min 10 days organize based on “Analog Circuit Design” through electrical department. • TEQIP should invest money for experimental setup work. Because machines are very costly for new setup. • In IITK there is a specific or dedicated research lab for electric field. Such as networked control lab. They provide me all experimental setup. • By providing an opportunity to do internship • Provided new experimental equipment and know new field. • Association with a supervisor in IITK, supporting field work/ lab work up to a certain amount. Awareness camps in allied institutions. • By conducting such program in future and giving an opportunity to attend those.
<p>How was this programme helpful to you?</p>	<ul style="list-style-type: none"> • I am working on the same topic (Ice slurry) in my Ph.D. also and I had various problem in this topic lie mesh generation, UFT etc. After the internship I am clearer about topic & software. • It was very helpful in learning new technical skill. It helps to improve knowledge of other technical field and practicality. • Programme helped in enhancing the learning abilities with a practical approach. • Very helpful in terms of guidance by prof. All facilities for working and

	<p>learning are available.</p> <ul style="list-style-type: none">• It was very helpful in learning new things which we can't learn in our college. We learn how to model composite, did analysis & find the effective properties. In short very helpful.• It was helpful in learning new ideas and a nice experience about composite it allow us to thing about the surrounding problems and resolve them.• It provide learning platform for young researchers.• I got an opportunity to learn & use RTDS. This facility is rare in India. Using RTDS, I have done a part of my Ph.D. work.• I have don't survey on protocols of computer networks and programming in python here. This programme is very helpful to me.• Yes the programme was helpful to me. I have learnt new programming languages.• In learning new things & their implementation for future project.• Here i learnt a lot of things specially working experience on different machines.• This program gave me an idea to how more forward in research work. I have idea but TEQIP gave me a platform such as excellent atmosphere for learning in IITK.• This program gave me an opportunity to come here and interact with good researcher and work under renowned faculty which help me to understand to perform research now problem formulate and what is the methodology i.e growth in my research skills.
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	<ul style="list-style-type: none">• By this program I get more ideas to work on• To give chance to work in the new field of research.• Increased my conceptual base and exposure to learned faculty of IITK, rich literature added to the thesis and my knowledge.• Yes the programme gave me broad introduction to research aspect and enlightened me with my capabilities.
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Outcome

Summer Internship & Visiting Researcher Programme 2016 was very successful in terms of achieving its objective of giving a chance to students and faculty members from QC institutes to interact with IITK faculties on the same platform for enhancing their research skills with practical approach.

- According to the participants, it provided exposure to various new ideas and thoughts using which they could improve their research work.
- Some of them did good work and they plan to follow it up for possible publications.
- This program has given a boost to collaborative research between students and teachers of TEQIP institutes and IITK.
- All candidates left much more motivated and enthusiastic towards their work. They acquired new skills and enhanced their knowledge base while gaining confidence in their abilities to work in their research field.
- Candidates met new people and practiced their networking skills while establishing a network of professional contacts, mentors, and references.