



KNOWLEDGE INCUBATION FOR TEQIP, IIT KANPUR

TEQIP Winter Internship and Visiting Researcher Program

7-27 December, 2014

KIT announced 3 week Winter Internship and Visiting Researcher Program for PG students and faculty members of all TEQIP Institutes under IIT Kanpur quality Circle. Applicants were encouraged to apply in all department at IIT Kanpur. Visiting Researcher Program was planned to facilitate knowledge exchange between faculty members of IIT Kanpur and guest faculties from Institutes under KIT's quality circle. It aimed at helping them enhance their teaching, research skills and overall productivity. During their stay, they worked with their host faculty at IITK on research topics of mutual interest. The Winter Internship Program aimed at exposing selected students from QC institutes to the academic culture of IIT Kanpur and to help them adopt new techniques and methods of learning their subject of interest. All the candidates were given access to library and laboratory facilities of IITK to conduct their research. They conducted their internships on approved topics given to them by their host faculty at IITK. At the end of the program all the candidates submitted brief reports on their research visit.

Visiting Researchers

	Name	University	Research topic	Worked with
1	Mr. Avinash Shukla	IFTM University, Moradabad	Study of Experimental Modal Analysis	Dr. Shakti S. Gupta, IIT Kanpur
2	Prof. Vinod Kumar Mishra	BTKIT Dwarahat	Inventory decision for substitutable and deteriorating items under realistic environment of manufacturers and retailers	Prof. Kripa Shanker, IIT Kanpur
3	Prof. Ravi Prakash Tewari	MNNIT Allahabad	Researched/discussed on developing new biomaterials laboratory along with cell culture facility for biological evaluation of biomaterials for UG ,PG and Ph.D. students at MNNIT Allahabad	Prof. Kantesh Balani, IIT Kanpur

4	Prof. Ashutosh Singh	HBTI, Kanpur	Peer-to-Peer Overlay Live Streaming Multicast Networks: Reliability Issues	Prof. Y.N. Singh, IIT Kanpur
5	Prof. V Murari	MNNIT Allahabad	Comparison of initiation envelope predicted by the in-house damage model with other damage models	Prof. C.S Upadhyay, IIT Kanpur
6	Prof. Buddakkagari Vasu	MNNIT Allahabad	Laminar Free Convection Boundary Layer and Film Flows of non-Newtonian Nanofluids	Prof. Arun K. Saha, IIT Kanpur
7	Dr. Anand Kumar	HBTI, Kanpur	Dynamic response of selected fruits using Laser Doppler Vibrometer	Dr. Bishakh Bhattacharya, IIT Kanpur
8	Prof. Jitendra Bhaskar	HBTI, Kanpur	Dynamic response of selected fruits using Laser Doppler Vibrometer	Dr. Bishakh Bhattacharya, IIT Kanpur

Internship Students

	Name	University	Internship Subject	Worked under
1.	Mridul Gupta	MNNIT, Allahabad	Mobile data offloading	Dr. Y N Singh
2.	Neha Gupta	HBTI, Kanpur	Studied relevant papers to critically analyze the existing MPPT techniques to find out their merits, drawbacks and limitations	
3.	Mr. Deepak Kumar	IFTM, Moradabad	Ongoing	Dr. Animesh Das
4.	Nandini Sharma	PEC University of Technology	Structural Investigation of pure and doped Gallium ferrite, GaFeO ₃	Prof. A. Garg
5.	Bhupesh Dutt Sharma	MNNIT, Allahabad	Homotopy Analysis Method	Prof. Ratish kumar
6.	Akash Singh Rawat	MNNIT, Allahabad	EDA Tools	Prof. S. Qureshi
7.	Kush Kumar Nayak	NIT, Raipur	In-vitro Cell Viability Study of Mammalian Cell on Porous Scaffold	Prof. Ashok Kumar

8.	Zeenat Arif	NIT, Raipur	Glass surface modification by OTS solution	Prof. Jayant K. Singh
9.	Sruthi L	NIT, Raipur	Material Studio, introduction to the software, steps and results of the simulations carried out, its comparison with the theoretical calculations and results	Prof. Jayant K. Singh
10	Suresh Chandra Phulara	NIT, Raipur	PyMol: A Bioinformatics Tool for Protein Structure Visualization	Arun K shukla
11	Praveen Kumar Sahu	MNNIT, Allahabad	Finite difference method of Godunov in one-dimensional equations of gas dynamics for inviscid fluids	Prof. Ratish Kumar
12	Shashank Gupta	MNNIT, Allahabad	Growing of ZnO Nanorods on Psyllium	Dr. Vivek Verma
13	Sindhu K J	MNNIT, Allahabad	Techniques in Molecular Biology	Prof. B. Ateeq
14	Shefali Singh	MNNIT, Allahabad	Techniques in Molecular Biology	Prof. B. Ateeq
15	Vimal Kumar Mishra	MMMUT Gorakhpur	Design CMOS Inverter based on SOI MOSFET	

Summary of Faculty Feedback

Workshop

Questions	Excellent	Good	Ordinary
Clarity of communication about workshop	04	01	00
Organization of the sessions	03	00	00
Quality of lectures	03	00	00
Quality of posters	03	00	00
Effectiveness of discussions	04	01	00
Effectiveness of learning experience	05	00	00
	Appropriate	Short	long
Duration of workshop	05	01	00
	Definitely	Maybe	No
Would you like to have more such	04	01	00
Would you like e-lectures by experts on special	04	01	00
Suggest specific topic that you would like additional expert lectures on	<ul style="list-style-type: none"> • Noise and Vibration Control. • Simulation and Modelling. • Optimization • Random process. 		
Additional Suggestions	<ul style="list-style-type: none"> • More Lab visit slots are required for such workshop. 		

Teaching

Which subjects do you teach?	<ul style="list-style-type: none"> • Biomaterials. • Numerical Methods. • Graph Theory • Design and Materials. • Signals and Systems. • Analog Communication • Digital Communication 			
What is average student to teacher ratio in your institute?	<ul style="list-style-type: none"> • 36:01 • 10:01 • 60:01 			
Questions	YES		NO	
Do you have additional support for teaching (tutors, graders, teaching Assistants, etc)?	03		04	
Do you give class projects for UG classes?	04		01	
Do you give class projects for PG classes?	05		01	
Do you have sufficient resources for laboratory courses?	01		04	
	Sufficient		Inadequate	
Is the library/journal/e-connection support adequate?	04		01	
	Definitely	May be	No	
Would you like to have common (TEQIP) repository of course material?	05	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?	03	05	03	00
How can TEQIP help improve your teaching?	<ul style="list-style-type: none"> • Resource sharing. • Workshop on specified topics. • By organizing such short term workshops for different area in near future. • Expert lecture in the subjects of courses offered at U.G and P.G level. • Extending IITK facilities. 			

Research

Questions	Definitely	Maybe	No
Would you like to visit an IIT for a visiting-faculty/post-doctoral fellow ,if offered(via TEQIP)?	08	00	00
Would you like to share/use research infrastructure at IITK, if made available?	05	03	00
Would you like to conduct collaborative research with IITK?	08	00	00
Would you like lectures by experts (Indian and international) on niche research areas/topics?	07	00	00
Do you want special-topic conferences?	05	03	00
How can TEQIP help improve your research?	<ul style="list-style-type: none"> • Sharing laboratory facilities. • Resource sharing. • By providing laboratory facilities like Visiting Researcher Program (TEQIP sponsored). • Visiting faculty/post-doctoral in end of the semester during the TEQIP project. • Conducting more Visiting Researcher Program and workshops on specified subject (especially on mathematics). • Extending IITK facilities. 		

Summary of Student Feedback

Workshop

Questions	Excellent	Good	Ordinary
Clarity of communication about workshop	03	03	00
Organization of the sessions	02	03	02
Quality of lectures	01	04	00
Quality of posters	00	04	00
Effectiveness of discussions	03	04	00
Effectiveness of learning experience	03	04	00
	Appropriate	Short	long
Duration of workshop	03	05	00
	Definitely	Maybe	No
Would you like to have more such sessions?	08	00	00
Would you like e-lectures by experts on special topics?	08	00	00
Suggest specific topic that you would like additional expert lectures on	<ul style="list-style-type: none"> • Tissue Engineering. • Cloning • Maximum power plant tracking for wind energy conversion system. • Nanomaterials • Electrochemistry. • Molecular oncology. • Oncology • Biomedical application • Drug delivery. 		

Learning

Questions	Yes	No	
Do you get enough class projects?	05	03	
Is the learning adequate?	08	00	
Do you have sufficient resources for laboratory courses?	08	01	
What is your area of specialization	<ul style="list-style-type: none"> • Tissue Engineering. • Molecular biology, Microbial Technology. • Maximum power plant tracking for variable speed wind energy conversion system. • Chemical Process Design. • Chemical engineering. • Molecular biology. • Bioprocess • Genetic Engineering. • Biomedical engineering. 		
	Sufficient	inadequate	
Is the library/journal support/e-connection adequate?	05	01	
	Definitely	Maybe	No
Would you like to have common (TEQIP) repository of course material?	07	01	00
Would you like to visit IITK to attend specialized courses?	09	00	00
Would you like MOOCS/e-resources based courses?	08	00	00

<p>How can TEQIP help improve your learning?</p>	<ul style="list-style-type: none"> • There must be a proper communication among TEQIP, concerned faculty and candidate. • This time I was not allotted any guide next time at least I should be given to work with supervision of my research area. • It provides exposure to various new ideas and thought. • Basic concept behind modification of surface changing from hydrophobic to hydrophilic and vice versa. • With regular program.
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Research

Questions	Definitely	Maybe	No
Would you like to visit an IIT for a short visit /internship/post-doctoral stint ,if offered(via TEQIP)?	12	01	00
Would you like to share/use research infrastructure at IITK, if made available?	13	00	00
Would you like to conduct collaborative research with IITK faculty?	13	00	00
Would you like lectures by experts (Indian and international) on niche research areas/topics?	13	00	00
Do you want special-topic conferences?	11	01	01

How can TEQIP help improve your research?

- It helps me improving my research skills and way to seeing a problem.
- By organizing workshop, short term courses, visiting researcher program.
- Kindly increase the time duration of winter internship program
- Give a short presentation by faculty what research has been promoted in the IITK.
- Research on different topic was done within short duration. New and advanced topics on substrate can be done. Research is quite different from my M.tech thesis. This concept i can use in my thesis.
- By providing remote guide facility, so we can take the advantage of IITK facility experience by working at our Institute only.
- By learning new work and process.
- The initiative taken by TEQIP is very good but implementation is not so good it can be better. To improve the research by conducting more workshops, lecture series and regular visit of labs and interaction with faculty members.

OUTCOME

Winter Internship and Visiting Researcher program was a step towards encouraging exchange of knowledge and skills within students and faculty members of QC institutes and IITK.

- Participants established strong relationships with their hosts for future collaborative research.
- They gained knowledge on new techniques and methods that are being used in their research field.
- Visiting researchers got a chance to interact with people in their research field at IITK which helped them gain new experience and techniques to further develop their research skills.
- Participants got an exposure to the work environment of IIT Kanpur.
- After the completion of this program students had a much better understanding of theoretical and practical aspects of their research areas.
- Students got a chance to test their interests in their current field and develop their long-range career plans.
- This program helped students develop overall maturity by strengthening resourcefulness, self-confidence, self-discipline and sense of responsibility.