



KNOWLEDGE INCUBATION FOR TEQIP, IIT KANPUR

TEQIP Summer Internship and Visiting Researcher Program

2014

In order to encourage research collaborations and student exchange with the colleges in Quality Circle assigned to IIT Kanpur, Knowledge Incubation for TEQIP announced a Summer Internship and Visiting Researcher program for students and faculty members of all TEQIP Institutes under IIT Kanpur quality Circle. This program was offered in the department of Mechanical engineering, Applied Mechanics, Civil Engineering, Chemical engineering, Material sciences/Metallurgy and Computer Science and engineering at IIT Kanpur. Several students and faculty members applied for this program. 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 and overall productivity. 6 Faculty members were selected for research visit under visiting researcher program. During their stay, they worked with their host faculty at IITK on research topics of mutual interest. The Summer Internship part aimed at exposing selected students from QC institutes to the academic culture of IIT Kanpur and help them adopt new methods of learning their subject of interest. Several applications were received from which 12 students were selected for the Summer Internship Program. They conducted their internships on approved topics given to them by their host faculty at IITK.

Visiting Researchers

	Name	University	Research topic	Worked with	Duration of stay
1	Mr. Avinash Shukla	IFTM University, Moradabad	Topology optimization	Dr. Anupam Saxena, IIT Kanpur	May 15-July 18, 2014
2	Mr. Deepak Singh Bisht	IFTM University, Moradabad	Validation of Three Point Bending Test	Dr. P. Venkitanarayanan, IIT Kanpur	May 15-July 16, 2014
3	Dr. K.K Dubey	UIET, MDU, Rohtag	Process development for Fructo-oligosaccharides (FOS) production from <i>Aspergillus</i>	Dr. P.K. Bhattacharya, IIT Kanpur	June 1- July 11, 2014

			<i>niger</i> at shake flask level		
4	Dr. N.K Singh	NIT Kurukshetra	Usefulness of IB method in simulating vortex generators on a flat plate	Prof. Subrata Sarkar, IIT Kanpur	June 20 – July 13, 2014
5	Mr. Nagendra Reddy	NIT Kurukshetra	Design of Statically Balanced Contact-aided Compliant Mechanisms	Prof. Anupam Saxena, IIT Kanpur	May 31- July 20, 2014
6	Mr. Prabhakar Bhandari	IFTM, Moradabad	Infrared Thermography	Dr. Pradipta Kumar Panigrahi, IIT Kanpur	May 15-July16, 2014

Summer Internship Students

	Name	University	Internship Subject	Worked under	Duration of stay
1	Abhinav Singh	Madan Mohan Malaviya University of Technology	Study of Mould Filling and Solidification in Microcastings	Dr. Arvind Kumar	May 17- July 8, 2014
2	Abir Roy	MNNIT, Allahabad	Constrained Groove Pressing	Dr. Shashank Shekhar	May 23 – July 23, 2014
3	Mr. Deepak Kumar	IFTM, Moradabad	Relation between water absorption and Bitumen absorption of aggregates	Dr. Animesh Das	June 10 – August 14
4	Harmeet Grehwal	GB Panth Engineering College, Pauri Garhwal	Aakash Tablet App Development	Dr. T.V Prabhakar	June 24- August 14, 2014
5	Jaikishan Damani	MANIT, Bhopal	Investigating the use of construction and demolition waste (CDW) in	Dr. Shyam Nair	May 15 – 27 June, 2014

			pavement bases and sub-bases – A pilot study		
6	Nandni Sharma	PEC University of Technology, Chandigarh	Structural and dielectric properties of pure and doped BiFeO ₃	Dr. Ashish Garg	May 23- June 17, 2014
7	Parnika Mishra	UIET, Panjab University, Chandigarh	Testing the Energy of Random Signals in a Known Subspace	Prof. A.K. Chaturvedi	June 12- July 17, 2014
8	Paritosh Agrawal	UIET, Panjab University, Chandigarh	Testing the Energy of Random Signals in a Known Subspace	Prof. A.K. Chaturvedi	June 12- July 17, 2014
9	Sannidhya Kumar Ghosh	Jadavpur University, Kolkata, India	Efficient Design of Fluid Viscous Dampers for Seismic Vulnerability Mitigation of Structures	Dr. Samit Ray Chaudhuri	May 17 – July 19 th , 2014
10	Soumya Varma	Maulana Azad National Institute of Technology, Bhopal	Study of Corrosion Behavior of Mg AE-42 in 3.5 wt% NaCl and 0.5N NaOH Solutions	Dr. Kallol Mondal	May19-July 12, 2014
11	Vinay Jain	UICET, Punjab University	Study of various characterization techniques	Dr. R.K Gupta	
12	Avijeet Mukherjee	IEST, Shibpur	Changes in Mechanical Properties, Microstructures and Corrosion behavior of Al 7075 T651 alloy after deformation at high and slow strain rate	Dr. Kallol Mondal	June 5- August 25, 2014

Summary of Faculty Feedback

Questions	Excellent	Good	Ordinary
Clarity of communication about the Program	01	01	00
Organization of the sessions	00	02	00
Quality of Posters	00	02	00
Quality of lectures	01	01	00
Effectiveness of discussions	01	01	00
Effectiveness of learning experience	02	00	00
	Appropriate	Short	long
Duration of workshops	00	02	00
	Definitely	Maybe	No
Would you like to have more such sessions?	02	00	00
Would you like e-lectures by experts on special	02	00	00
Suggest specific topic that you would like additional expert lectures on	<ul style="list-style-type: none"> • FEM, Micro Analysis, Fracture Analysis 		
Additional Suggestions	<ul style="list-style-type: none"> • The time period should be little more so that more focus is on work. • There should be an alert system which will e-mail us about current workshop so that we can participate. 		

Teaching

Which subjects do you teach?	<ul style="list-style-type: none"> • Strengths of Materials. • Thermodynamics. 			
What is average student to teacher ratio in your institute?	62:01 64:01			
Questions	YES		NO	
Do you have additional support for teaching (tutors, graders, teaching Assistants, etc)?	00		00	
Do you give class projects for UG classes?	02		00	
Do you give class projects for PG classes?	01		01	
Do you have sufficient resources for laboratory courses?	01		01	
	Sufficient		Inadequate	
Is the library/journal/e-connection support adequate?	00		02	
	Definitely	May be	No	
Would you like to have common (TEQIP) repository of course material?	02	00	00	
Would you like to visit IITK to participate in and develop course material (existing or new)	02	00	00	
Would you like to participate in creation of the repository material (course files/lab. Manuals/question bank/etc)	02	00	00	
	e-courses	Workshops	Content	none
How can IITK effectively help you prepare for teaching?	00	02	00	00
How can TEQIP help improve your teaching?	<ul style="list-style-type: none"> • By the workshop and program like this. • By giving notes of concern subject. 			

Research

Questions	Definitely	Maybe	No
Would you like to visit an IIT for a visiting-faculty/post-doctoral fellow ,if offered(via TEQIP)?	06	00	00
Would you like to share/use research infrastructure at IITK, if made available?	06	00	00
Would you like to conduct collaborative research with IITK?	06	00	00
Would you like lectures by experts (Indian and international) on niche research areas/topics?	06	00	00
Do you want special-topic conferences?	05	01	00
How can TEQIP help improve your research?	<ul style="list-style-type: none"> • A winter Research program in the month of December can also be arranged. • By giving the environment and the apparatus, labs which is not available usually. • Research objectives and day wise programme must be planned. • By introducing research programme of longer duration. • Provide library and user I.D . • Increase time duration so that any good result achieve. 		

Summary of Student Feedback

Questions	Excellent	Good	Ordinary
Clarity of communication about workshop	02	04	00
Organization of the sessions	03	02	01
Quality of lectures	02	05	00
Quality of Posters	02	02	02
Effectiveness of discussions	03	03	00
Effectiveness of learning experience	06	00	00
	Appropriate	Short	long
Duration of workshop	06	00	00
	Definitely	Maybe	No
Would you like to have more such sessions?	04	01	00
Would you like e-lectures by experts on special topics?	04	01	00
Suggest specific topic that you would like additional expert lectures on	<ul style="list-style-type: none"> • Corrosion Science, Physical Metallurgy of steels, Heat Treatment. • AI, Advanced Algorithm, Programming Structure. • Applied mathematics, Estimation and detection. 		

Learning

Questions	Yes	No	
Do you get enough class projects?	06	01	
Is the learning adequate?	07	00	
Do you have sufficient resources for laboratory courses?	06	00	
What is your area of specialization	<ul style="list-style-type: none"> • Corrosion Science • Civil Engg. • Programming in Android, C, C++, Java, php • Transportation Engg. • Embedded system & 		
	Sufficient	inadequate	
Is the library/journal support/e-connection adequate?	04	03	
	Definitely	Maybe	No
Would you like to have common (TEQIP) repository of course material?	04	01	00
Would you like to visit IITK to attend specialized courses?	06	01	00
Would you like MOOCS/e-resources based courses?	05	02	00
How can TEQIP help improve your learning?	<ul style="list-style-type: none"> • Teqip has given me chance to work under one of the best professor in our country and has increased my knowledge. • Its everything out there just we need to study. • It is the best program to improve the skills & gives new ideas. • Student exchange program provide nice exposure to students. 		

Research

Questions	Definitely	Maybe	No
Would you like to visit an IIT for a short visit /internship/post-doctoral stint ,if offered(via TEQIP)?	09	02	00
Would you like to share/use research infrastructure at IITK, if made available?	09	02	00
Would you like to conduct collaborative research with IITK faculty?	10	00	00
Would you like lectures by experts (Indian and international) on niche research areas/topics?	07	03	01
Do you want special-topic conferences?	06	04	01
How can TEQIP help improve your research?	<ul style="list-style-type: none"> • TEQIP can give me opportunities to work on specific projects, under the guidance of expertise to improve my research. • TEQIP is already doing good work in the field of research by giving platform to students to know what research is, and how can it be beneficial for the nation. • By inviting pioneers of the research papers. • TEQIP offered me to project work as summer intern which is very helpful to me. • Gives new thinking in own specializations if i get enough time from TEQIP. • With TEQIP students of diverse places come together, hence share their knowledge. 		

OUTCOME

The Summer Internship and Visiting Researcher program was a very successful endeavour towards encouraging research collaboration and student exchange between Institutes under the quality circle of KIT, IIT Kanpur. The feedback from student interns and visiting researchers were excellent, encouraging us to have more such student-based initiatives in the future. KIT, IIT Kanpur hopes for expanding the scope of such activities further, with emphasis on post-doctoral quality improvement and research programs. Such Collaborations of researchers and students can lay foundations of a very productive academic culture which can be beneficial for all QC institutions. Through programs like these TEQIP can create an excellent opportunity for students and faculty members of QC institutes to learn new ideas and gain new interests in their research field. Additionally such initiatives gives 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.