Lokmanya Tilak Jankalyan Shikshan Sanstha's

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7.3 Institutional Distinctiveness

Specialized Course in Research Methodology in Engineering and Technology including Applied Sciences

Context

At any stage of civilization in society, social life has remained mainly tradition based and contribution of established lifestyle. However, in every activity of human life, a need is always felt of improving upon the existing practices.

In view of this every country has to think of research and development activity in all its spheres of life. Accordingly, India has setup Council Of Scientific and Industrial Research. Among the 50 laboratories,every laboratory focuses of development in specific activity of society, for example National Chemical Laboratory of Pune is meant for all indigenous investigations in regards to chemical reactions which should be executed in the context of industrial development of India.

Obviously these CSIR labs will need human resource which has undergone basic training in research. All the national institutes, state levels institutes and private institutes have concentrated on training of human resource, capable of executing research programs.

In today's day and age, the world has become severely competitive, and so has education. In order to stay on top, educational institutes must have a distinctive vision and mission, and must focus their efforts towards excelling in their own unique niche. This is an exhaustive process which

includes constant development of best practices, continuous innovation and thorough analysis of its key areas of excellence. These activities define and set-apart leading institutions from the rest. We have devoted our time and energy towards research methodology which has proven to be a distinctive feature of the Institute,strengthening its vision and mission.

Objective

In view of the same our Institute wanted to establish a research-oriented environment for its academicians. The key objectives are:

> ➢ Instill in the teachers and students of the Institute & the Sanstha the mindset of research.

> ➢ Improve the communication between the industry and the institute by addressing practical problems through academic research and analysis.

> ➢ Develop extensive training programs to improve Human Resource Development.

> ➢ Develop new approaches to solving various problems faced by the industries, as well as the society in general.

> ➢ Provide the faculty members of the Institute & the Sanstha a platform on which they can upgrade their skills, get in touch with industry insiders and groom them into even more effective educationists.

> ➢ Develop an understanding towards the various approaches of effective and useful research in Engineering and technology.

> ➢ Train beginners in research to the various approaches for solving complex problems which require extensive research and development.

Practice: Obviously if human resource is to be trained for

research activity the faculty members must know the process of execution of research. It is exactly for this purpose, the institute has developed this specialized course of "Research Methodology in Engineering and Technology including Applied Sciences" for all the entire Sanstha

These courses are two folds

1   A general approach to research

2   A specific training specializing human resource in specific focused areas.

These areas are identified through detailed discussion with industry personal, studying relevant literature published in relevant technical journals, executing sponsored research programs, executing industrial consultancy assignments and developing various test rigs. For examplea course is developed on machinery alignment as it was indicated by industrial personnel that they are handicapped in executing modern alignment techniques as they are not appropriately informed and trained for the execution of these techniques. Then the teachers in the institutes executed extensive studies of the subject machinery alignment. These studies were conducted after extensively referring to relevant journals, research papers and print publications. As a result of all these practices, the course which was designed has proven to be veryvaluable and well accepted by the industrial and educational fraternity equally.

In the November of 2004, Ram Meghe Institute of Engineering and technology, Badnera, State of Maharashtra, requested the Institute to develop a course around these ideologies and present it for their own faculty. Dr. S.V. Bansod, one of the senior faculty at College of Engineering, Badnera, approached Dr. J. P. Modak regarding the same, owing to their previous academic connections. Subsequently, Dr. Modak assembled a team of experts, prepared course material, and presented a major part of the course by himself while proficiently handling the team from the Institute by grooming the team on all of their individual areas of expertise.

The first course was organized as under:

	Lecture 1	Lecture 2	Lecture 3	Lecture 4	Lecture 5
Day 1	10:00-11:00 Research process 1 Dr. J. P. Modak	11:00-12:00 Research process 1 Dr. J. P. Modak	12:00-13:00 Introduction to Mathematical Modelling Dr. J. P. Modak	14:00-15:00 Experimental Data Based Research-1 Dr. V. S. Deshpande	15:00-16:00 Experimental Data Based Research-1 Dr. M. P. Singh
	Lecture 1	Lecture 2	Lunch Break	Lecture 3	Lecture 4
Day 2	10:00-12:00 Artificial Neural Network Dr. Mrs. A. A. Khurshid	12:00-13:30 Exp. Data BaseMod.-1 Dr. Mrs. M. P. Joshi	14:30-16:00	14:30-16:00 Exp. Data BaseMod.-1 Dr. R. V. Deshpande	16:00-17:30 Discussion with Participants All Speakers

Evidence of Success

At the end of every program we gather our feedback which seeks the opinion of the attendees of the course in terms of:

Quantum of knowledge of the speaker.

Depth of knowledge of the speaker.

Presentation skill of the speaker oral.

Presentation skill of the speaker aids.

Response of speakers to queries.

Overall impression of attendee about the speaker.

- The average feedback of all speakers so far from 50 presentations is in the range of 80%-95% of excellence in presentation of the information in the course.

- Since then the Institute has been invited to present this course at nearly **50 institutions in Vidarbha, Western Maharashtra, Chhattisgarh and Rajasthan.**

- Along with domestic accolades, a part of this course was presented in 2011, at **11th World Congress on "Theory of Machines and Mechanisms" at Guanajuato, Mexico** in July 2011 where it was very well received.

- The course also provides a steady stream of revenue for the institute.

- More than **3000 trainees benefited** from this course.

- The institute came to be recognized as a center for faculty training on research methodology.

- Thus the institute was invited by UGC-HRDC,RTMNU for the conduction of a pre-PhD course work

- Influenced and trained with this customized course on Research which was conducted in Priyadarshini Institute of Engineering & Technology, the department of Biotechnology submitted a research Proposal to National Institute of MinersHealth (NIMH), Nagpur, Central India Institute of Medical Sciences (CIIMS), Nagpur and Western Coal Field Limited (WCL) Nagpur on the collaborative research project entitled "Possible implications of bioavailable iron and coal mine dust on coat workers lung disease".This project has been granted Rs 96.54 Lakhs for three years (2016-2019) by Central Mine Planning and Design Institute (Ministry of Coal) Government of India.

- This project has immensely helped us to establish a research model to evaluate toxicity parameters, environment interaction potentially associated with pulmonary disease in the coal

  mines workers.