

**TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME
(TEQIP) PHASE-II**

Report of Performance Auditor

Conducted at NITK Surathkal

(9-12, April 2014)

NATIONAL PROJECT IMPLEMENTATION UNIT (NPIU)

EdCIL House, 4th Floor, Plot 18-A, Sector 16-A
NOIDA - 201 301, Gautam Budh Nagar, Uttar Pradesh

Table A: Summary Performance Audit Evaluation Number-1/2/3/4

Name of Performance Auditor : **Prof. P.K. Das**
Dates of Performance Audit : **9th April, 2014 to 12th April, 2014**
Name of Institution with location : **National Institute of Technology Karnataka, Surathkal.**

S. No.	Area of Performance Audit	Remarks
1.	Project Implementation	Steps taken by the Institute is quite satisfactory.
2.	Implementation of Institutional Reforms	A number of reforms have been planned and being executed by the Institute
3.	Administrative and Managerial Efficiency Improvement	MIS needs to be improved
4.	Qualitative Improvements related to Education and Research	Measures have been taken and results are being monitored.
5.	Institutional Governance	Measures are taken within the scope of NIT act
6.	Support to Weak UG Students	Several measures have been taken. However, scope of further improvement exists.

Note:

For Table A, the Summary of Performance Audit Evaluation, is to be filled in by the Performance Auditor from the overall qualitative assessment for the Tables 1 to 6 as given ahead in this format for Performance Audit Report.

Performance Auditors Report

Table-1: Project Implementation

Name of Performance Auditor : Prof. P.K. Das
Dates of Performance Audit : 9th April, 2014 to 12th April, 2014
Name of Institution with location : National Institute of Technology Karnataka, Surathkal.

Sl. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Progress in securing Autonomous Institution status from the affiliating University & the UGC within 2 years of joining the Project OR Effectiveness of utilization of academic autonomy possessed/ obtained	1	Institution of National Importance under the Parliament Act 2007.
2.	Sufficiency and quality of academic buildings	1	Visit to various departments, central facilities and other amenities.
3.	Progress/achievement in <u>starting new PG programs</u> as evidenced by: <ul style="list-style-type: none"> • Securing AICTE approval • Establishment of laboratories • Adequacy of student enrolments • Cumulative number of assistantships granted 	1	New programs approved by MHRD (Nanotechnology, Design & Precision Engineering with CMTI) For both the programs the enrollment is more than 80% Another M. Tech Program in Construction Technology and Management with L&T in the Civil engineering department.
4.	Progress/achievement in <u>strengthening existing PG programs</u> as evidenced by: <ul style="list-style-type: none"> • Establishment of proposed laboratories • Adequacy of student enrolments • Cumulative number of assistantships granted 	2	Refurbished existing labs. New equipments added New PGRAs/HTTAs added. New M. Tech students sponsored by L&T
5.	Progress/achievement in <u>strengthening existing UG programs</u> in Govt funded		N/A

Sl. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
	<u>and aided institutions only</u> as evidenced by: <ul style="list-style-type: none"> Establishment of proposed laboratories Adequacy of student enrolments 		
6.	Improvements in Faculty Development as evidenced by: <ul style="list-style-type: none"> Percentage/ increase in percentage of faculty benefiting from the Core Module of pedagogical training Percentage of / increase in percentage of faculty benefiting from the Advanced Module of pedagogical training Percentage of faculty with UG qualification registered/deputed for improving their qualification Percentage of faculty deputed for subject domain training, seminars, etc. <i>(faculty benefiting from subject domain training are required to share their gains with peers and also put their report on training on institution's web site)</i> 	2	All new faculty members given Induction Training in the month of July 2013. Many have attended Pedagogical training programs in IITs, IMI, Delhi All faculty members are having minimum M.Tech. qualification. Currently 33 (15%) are pursuing Ph.D. (QIP / in house) At present the entry level qualification is Ph.D.
7.	Generation, retention and utilization of the non-tuition fee revenue generated through various activities	1	The IRG is 30% of total annual recurring expenditure
8.	Engineering faculty positions in terms of: <ul style="list-style-type: none"> Reduction in vacancies Increase in faculty appointed on regular basis Increase in the number of faculty with at least a Masters degree 	1	Reduction from 25% to 19% Only regular appointments considered. In addition visiting faculty, adjunct faculty and assistant lecturers are appointed. All faculty members are having minimum M.Tech. qualification.
9.	Improvements in placement rate of UG pass outs	1	93% (from 89% in Baseline)

Sl. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
			data)
10.	<p>Enhanced interaction with industry as evidenced by:</p> <ul style="list-style-type: none"> • Increase in industry personnel registered for Masters & Doctoral programs • Increase in industry personnel trained by the institution in knowledge and/or skill areas • Increase in the number of consultancy assignments secured by the institution • Increase in the number of students' and faculty visits to and/or training in industry • Increase in involvement of industry experts in curricula & syllabi • Improvements, laboratory improvements, evaluation of students and delivering expert lectures • Increase in the number of sandwich programs between industries and the institution 	1	<p>Personnel from CMTI Bangalore, MOOG (India) Ltd., ISRO, NAL Bangalore, Indian Navy, CPRI, NTPC. Regular training programs are conducted by the CCE for the PWD Engineers and for the NMPT.</p> <p>31% Increase from 135 lakhs in the year 2011-12 to Rs. 177 lakhs in the year 2013-14. Industry internship is mandatory for all UG and PG students as per curriculum Curriculum Workshop conducted with involvement of industry (CMTI, Intel, IBM, HP L&T, MRPL, Volvo, Bosch) Several expert lectures were organized in every department by the industry personnel</p> <p>M. Tech Program jointly with CMTI, L&T, Robert Bosch</p>

Performance Auditors Report

Table 2. Performance Audit - Implementation of Institutional Reforms

Name of Performance Auditor : Prof. P.K. Das
Dates of Performance Audit : 9th April, 2014 to 12th April, 2014
Name of Institution with location : National Institute of Technology Karnataka, Surathkal.

Sl. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Effectiveness of faculty evaluation by students as evidenced by: <ul style="list-style-type: none"> Percentage/ increase in percentage of faculty evaluated by students in one or more subjects Are results of evaluation properly used for teacher improvement? <p>If yes, is the procedure adopted for teacher improvement including counseling appropriate and effective?</p>	1	Course feedback is taken for every course with more than 70% of the students giving the feedback. Feedback is given to faculty members for self improvement
2.	Establishment of four funds and their sizes	1	BOG has approved the establishment of four funds.
3.	Offer of incentives to faculty for participation in consultancy, R&D and continuing education programs offered by the institution	1	The honorarium has been enhanced from Rs. 750/hour to Rs.2000/hour for delivering expert lecture in continuous education programs 60% of the consultancy revenue is given to the faculty. 2% of the of the Institute overheads from the funded research project is allowed for professional development

Performance Auditors Report

Table-3 Performance Audit - Improvement in Administrative and Managerial Efficiencies

Name of Performance Auditor : Prof. P.K. Das
Dates of Performance Audit : 9th April, 2014 to 12th April, 2014
Name of Institution with location : National Institute of Technology Karnataka, Surathkal.

S. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Modernization and decentralization of administration and financial management	1	Financial powers for HoD's increased from Rs. 1 lakhs to Rs. 2 lakhs and for Dean (P&D) increased from Rs. 3 lakhs to Rs. 5 lakhs
2.	Responsiveness to students academic and non-academic requirements	1	Along with curricular activities the institute supports annual non-curricular activities. All student clubs are financially supported through the office of Dean (Student Affairs) Two student nominees (B. Tech. and M. Tech.) for Senate. Hostel committee and Placement committee has student members.
3.	Responsiveness to faculty requirements	1	CPDA up to one lakh per year , funding for attending conferences, study tour, research interaction up to 2.5 lakhs under TEQIP-II.
4.	Utilization of institutional resource s	1	Effectively used
5.	Maintenance of academic and non-academic infrastructure and facilities	2	Equipments covered under AMC. Housekeeping given on sub contract.
6.	Extent of delegation of administrative and financial decision making powers to senior functionaries	1	Financial powers for HoD's increased from Rs. 1 lakhs to Rs. 2 lakhs and for Dean (P&D)

			increased from Rs. 3 lakhs to Rs. 5 lakhs
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Table 4. Performance Audit - Quality of Education and Research

Name of Performance Auditor : Prof. P.K. Das

Dates of Performance Audit : 9th April, 2014 to 12th April, 2014

Name of Institution with location : National Institute of Technology Karnataka, Surathkal.

S. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Improvements in curricula and /or syllabi	1	New curricula from 2012.
2.	Relevance of curricula and syllabi	1	New Curricula formed with Industry participation
3.	Improvement in teaching-learning processes as evidenced by: <ul style="list-style-type: none"> • Use of teaching aids • Continuous evaluation through quiz, assignments or mid-semester examinations etc. Sharing of answer scripts with students and explanation of the evaluation carried out • Introduction of flexibility in program offerings • Increased availability of adequate electives 	1	<p>Interaction with UG/PG/Ph.D. students</p> <p>LCD Projector in every class room, separate e-learning class rooms in the central computer centre</p> <p>Continuous evaluation is carried out with quizzes, mid semester examinations, mini-projects. The answer books are displayed to the students</p> <p>Flexible credit based learning is followed.</p> <p>Sufficient electives are offered</p>
4.	Progress in securing accreditation of eligible UG & PG programs (<i>institutions are to achieve target of</i>	1	Self Assessment Reports (SAR) for 9 UG programmes have been uploaded to the NBA website. Waiting for

	60% of eligible UG & PG programs accredited and/or applied for within 2 years of joining the Project)		the visit assessment team from NBA. Accreditation fee for 18 (out of 23 eligible programmes) has been paid. SAR preparation has been initiated. Awareness workshop conducted with NBA Officials on 23-24 August, 2013. A two day Accreditation Worksop (14-15 March, 2014) with participation of Prof. Seeram Ramakrishna, NUS Singapore was conducted to appraise faculty members of the finer points in NBA accreditation process.
5.	Increased collaboration with industry in R&D as evidenced by: <ul style="list-style-type: none"> • Increase in number of joint and industry sponsored R&D work undertaken • Increase in financial contribution by industry for R&D 	2	10 % increase. Several project with Dell R&D, AMD, Coal India , Corporation Bank, Syndicate Bank, Vijaya Bank.
6.	Increase in percentage of revenue from externally funded R&D projects and consultancies in the total revenue of the institution from all sources	2	10% increase
7.	Increase in the number of publications in refereed journals	2	20% increase
8.	Increase in the number of patents filed	3	1 patent filed

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Table 5. Performance Audit - Performance in the Governance of Institutions

Name of Performance Auditor : Prof. P.K. Das
Dates of Performance Audit : 9th April, 2014 to 12th April, 2014
Name of Institution with location : National Institute of Technology Karnataka, Surathkal.

The objective of an Institutional Governance Review is to assist institutions, using an evidence-based approach, in their self assessment of current Governance Practice. A thorough review will indicate the level of effectiveness of institutional governance and the Governing Body, and identify action points for improvement. It will also indicate that:

- The conduct of the Governing Body is in accordance with the standards of behavior that the public should rightfully expect.
- The Governing Body and the individual Governors are exercising their responsibilities in the interest of the institution as a whole.
- The Review has been undertaken by a Group who have internal and external credibility to undertake such exercise.

	INSTITUTIONAL GOVERNANCE REVIEW TEMPLATE	Assessment Grade (1-3)	Supporting Evidence
1.	A. PRIMARY ACCOUNTABILITIES		
	<ul style="list-style-type: none"> Has the Governing Body approved the institutional strategic vision, mission and plan – identifying a clear development path for the institution through its long-term business plans and annual budgets? 	1	Strategic plan approved by the BoG
	<ul style="list-style-type: none"> Has the Governing Body ensured the establishment and monitoring of proper, effective and efficient systems of control and accountability to ensure financial sustainability 	1	Effective monitoring system through Finance Committee
	<ul style="list-style-type: none"> Is the Governing Body monitoring institutional performance and quality assurance arrangements? 	1	Yes
	<ul style="list-style-type: none"> Has the Governing Body put in place suitable arrangements for monitoring the head of the institution's performance? 	1	As per MHRD rules

2.	B. OPENNESS & TRANSPARANCY IN THE OPERATION OF GOVERNING BODIES		
	<ul style="list-style-type: none"> Does the Governing Body publish an annual report on institutional performance? 	1	Annual report placed before the parliament
	<ul style="list-style-type: none"> Does the Governing Body maintain, and publicly disclose, a register of interests of members of its governing body? 	1	Published on the institute website as per RTI Act
	<ul style="list-style-type: none"> Is the Governing Body conducted in an open a manner, and does it provide as much information as possible to students, faculty, the general public and potential employers on all aspects of institutional activity related to academic performance, finance and management? 	1	Agenda and Minutes of the meeting published on the institute website as well as hard copy kept in the Library
3.	C. KEY ATTRIBUTES OF GOVERNING BODIES		
	<ul style="list-style-type: none"> Are the size, skills, competences and experiences of the Governing Body, such that it is able to carry out its primary accountabilities effectively and efficiently, and ensure the confidence of its stakeholders and constituents? 	1	Yes. Very competent governing body members
	<ul style="list-style-type: none"> Are the recruitment processes and procedures for governing body members rigorous and transparent? <p>Does the Governing Body have actively involved independent members and is the institution free from direct political interference to ensure academic freedom and focus on long term educational objectives?</p>	1	Members nominated by MHRD. Senate nominees by election
	<ul style="list-style-type: none"> Are the role and responsibilities of the Chair of the institution and the Member Secretary serving the Governing Body clearly stated? 	1	As per NIT Act 2007

	<ul style="list-style-type: none"> Does the Governing Body meet regularly? Is there clear evidence that members of the governing body attend regularly and participate actively? 	1	Yes. As per NIT Act
4.	D. EFFECTIVENESS AND PERFORMANCE REVIEW OF GOVERNING BODIES		
	<ul style="list-style-type: none"> Does the Governing Body keep their effectiveness under regular review and in reviewing its performance, reflect on the performance of the institution as a whole in meeting its long-term strategic objectives and its short-term indicators of performance/success? 	1	Yes, Self Review report and Development plan submitted
	<ul style="list-style-type: none"> Does the Governing Body ensure that new members are properly inducted, and existing members receive opportunities for further development as deemed necessary? 	1	As per MHRD guidelines. Members are also deputed for management development programs
5.	E. REGULATORY COMPLIANCE		
	<ul style="list-style-type: none"> Does the Governing ensure regulatory compliance* and, subject to this, take all final decisions on matters of fundamental concern of the institution. 	1	As per NIT Act
	<ul style="list-style-type: none"> Does the regulatory compliance include demonstrating compliance with the 'not-for-profit' purpose of education institutions? 	1	Centrally funded Institution
	<ul style="list-style-type: none"> Has there been accreditation and/or external quality assurance by a national or professional body? If so, give details: name, status of current accreditation etc 	1	Accredited earlier by NBA

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Table 6. Performance Audit - Support to Weak Students

Name of Performance Auditor : Prof. P.K. Das
Dates of Performance Audit : 9th April, 2014 to 12th April, 2014
Name of Institution with location : National Institute of Technology Karnataka, Surathkal.

S. No.	Aspect	Assessment Grade (1-3)	Supporting Evidence
1.	Percentage of students that complete the full first year and transit successfully to Second Year	1	87%
2.	Effectiveness of techniques used for identifying weak students	1	Through continuous evaluation, peer tutoring, summer classes, make up examination
3.	Conduct of remedial teaching throughout academic session	1	Regularly conducted
4.	Conduct of specialized soft skills and professional skills training	2	2 programmes, one in the beginning of the semester and one in the end of the semester
5.	Increase in the number of campus interviews	1	More companies are visiting every year
6.	Establishment and functioning of a Finishing School	1	Several Finishing school Programs conducted for M. Tech students
7.	Increase in the number of internal and external students that attend high intensity training conducted by the Finishing School	2	Finishing school for external students is planned during summer vacation (June-July 2014)

Improvements noticed on shortcomings reported during earlier Performance Audits

Many improvements are visible. Several faculty development programs (more than 50) have been organized by various departments. Many Technical Staff have been deputed for subject area and supervisory skills training programs. Many short term finishing schools have been conducted for M. Tech students to enhance employability. (MATLAB, Matrix Algebra, VI, FEM, Dynamics System, Automotive Electronics etc.). Applied for NBA accreditation of all nine UG Programs and 78 % of all eligible M. Tech Programs to renew accreditation.

Brief statements on continuing shortcomings and reasons thereof

Institute is yet to have a comprehensive MIS system, probably because of the tedious tendering procedures typically encountered in a Centrally Funded Institution.

Recommendations for Mentors

Institute may be guided to engage in organizing pedagogical training programmes with the help of IITs/ IIMs.

Institute may be guided to procure a comprehensive MIS system.

Performance Auditors Report

TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME-II (TEQIP-II)

Table 7 - Response Sheet for Head of Institution

A. Project Implementation		
S. No.	Evaluation Parameters	Responses
1.1	Briefly describe the actions taken for obtaining Autonomous Institution status, and the status of your applications as made.	Institution of National Importance under the Parliament Act 2007
1.2	If your institution is already an Autonomous Institution, briefly state actions taken for the following:	
	1. Value addition to courses as per market demand	Curriculum revision with valuable inputs from Alumni, Research organizations and Industry
	2. Improvements introduced in student evaluation	Continuous evaluation and transparent grading system is in place
	3. Addition of electives	Curriculum is revised every three years. More electives added in every Board of Studies meeting
	4. Carrying out teacher evaluation by students	Course feedback is taken for every course with more than 70% of the students giving the feedback.
	5. Starting of new PG programs, as planned	M. Tech Program "Nanotechnology" started in 2011-12 M. Tech Program "Design & Precision Engineering" jointly with CMTI started in 2013. M. Tech Program in Construction Technology and Management with L&T in the Civil engineering department in 2014-2015.

	6. For enhancing qualification, deputing to other institutions and/or admitting within the institution those teachers that have a Bachelors degree only	N/A since all faculty members are having a minimum Masters degree
	7. Conducting continuing education and/or skill enhancement programs for industry	A separate cell for Centre for Continuing Education regularly conduct such programmes
	8. Inviting experts from industry and eminent institutions for special lectures	Experts from industry and eminent institutions from India and abroad are invited for special lectures. A budgetary allocation to the tune of Rs. 1.5 lakhs per program has been approved
1.3	The amount of financial powers assigned / delegated to the following. If no delegations has been done so far, state the proposed action for each level with the corresponding timeline:	
	1. Board of Governors	As per MHRD norms
	2. Head of Institution for: (a) single purchase of equipment, and (b) recurrent expenditure	As per MHRD norms and GFR
	3. Dean	Rs. 5 lakhs
	4. Heads of Department	Rs. 2 lakhs
1.4	Progress in starting new PG programs, as proposed	2 new programmes commenced with intake in excess of 80%.
1.5	Actions taken to fill up seats in the existing PG programs	Most existing PG programmes are running with 100% admission
1.6	Actions taken to reduce vacancies in faculty positions	Three rounds of recruitments have been completed since September 2012. One more was held in the month of September 2013. Strength has increased to 229 at the time of report.
1.7	Status of faculty appointed on regular basis, and proposed actions to fill up all faculty positions on regular basis	NITK is in the process of implementing the four tier structure
1.8	Progress in getting pedagogical training in both the modules	NPIU needs to nominate Training providers

1.9	New Activities (since project start or the last performance audit) undertaken for enhancing interaction with industry	Workshop on Industry Institute Interaction - Role of Alumni held on 31st August 2013 with participation of 27 Industry Alumni. MOUs signed with Moog (India) Bangalore, L&T Chennai, NIOT, Goa, Volvo Group.
1.10	Generation, retention and utilization of the non-tuition fee revenue generated through various activities	Separate funds created for Faculty and Staff development, Maintenance fund, Expert Lectures, Corpus fund
2.1	Progress in instituting practice of teacher evaluation by students	Periodic evaluation conducted
2.2	Current percentage of teachers evaluated by students in one subjects taught	75%
2.3	Current percentage of teachers evaluated by students in more than one subjects taught	75%
2.4	State the incentives being offered to the faculty for participation in consultancy assignments, R&D, and continuing education programs conducted by the institution for industry	The honorarium has been enhanced from Rs. 750/hour to Rs.2000/hour for delivering expert lecture in continuous education programs 40% of the consultancy revenue is given to the faculty. 2% of the of the Institute overheads from the funded research project is allowed for professional development
3.1	Are the 4 funds established?	Yes
3.2	If yes, what is the amount in each fund?	0.5%
3.3	Is the contribution to each fund as per the requirement in the PIP?	Yes
3.4	State the quantum of financial powers delegated to: (a) BOG; (b) Head of Institution; (c) Deans, and (d) Heads of Departments	As per MHRD norms Financial powers for HoD's increased from Rs. 1 lakhs to Rs. 2 lakhs and for Deans increased from Rs. 3 lakhs to Rs. 5 lakhs

3.5	If less than those recommended in the PIP, state the reasons for the shortfall and actions planned to comply with the project recommendations.	NA
4.1	Number of ongoing sponsored projects from industry	05
4.2	Number of industry awarded consultancy assignments completed	03
4.3	Number of ongoing industry awarded consultancy assignments	04
4.4	Number of organizations and industries with whom MOUs have been signed for joint R&D	15
5.1	List the UG programs accredited on date by name	All programmes were accredited for 5 years. Applications under process as per new format
5.2	<ul style="list-style-type: none"> State program-wise action taken to get accredited the eligible UG program that are yet to be accredited. Describe difficulties faced, if any. 	Applications under process
5.3	List the PG programs accredited on date by name	80% of the PG programmes were accredited Applications under process as per new format
5.4	<ul style="list-style-type: none"> State program-wise action taken to get accredited the eligible PG program that are yet to be accredited. Describe difficulties faced, if any. 	Application under process
6.1	Give the number of papers published in national refereed journals from the date of joining the Project.	10% increase in publication
6.2	Give the number of papers published in Foreign refereed journals from the date of joining the Project.	10% increase in publication (no. increase from 192 to 220)
6.3	<ul style="list-style-type: none"> Number of patents filed since joining the Project List the titles of patents filed since joining the Project along with names of contributors. 	01

6.4	<ul style="list-style-type: none"> Number of patents obtained since joining the Project List the titles of the patents obtained since joining the Project along with the names of contributors 	None
7.1	Actions being taken for identifying weak students	Continuous evaluation, make up examination, summer classes
7.2	Number of students that have benefited from remedial teaching since joining the Project/ since the last performance audit	500
7.3	Number of students that have benefited from specialized soft skills and professional skills training programs conducted since joining the Project/ since the last performance audit	200. Self enrichment programmes conducted with CREST Collaboration.
7.4	Status of establishment and functioning of Finishing School	<p>Many short term programs conducted for M. Tech students to enhance employability (MATLAB, Matrix Algebra, VI, FEM, Dynamics System, and Automotive Electronics).</p> <p>It is proposed to hold two finishing schools of two weeks duration, one in the domain of Electrical, Electronics and Computer Engineering and the other in the domain of Mechanical Engineering during June-July 2014.</p>