HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Dean (Continuing Education and Internal Quality Assurance)

Internal Quality Assurance Cell (IQAC)

Note: This Performa has been designed by the IQAC of the University to carryout in-house Academic Audit of the academic departments of the University. Academic Audit is a scientific and systematic method of reviewing the quality of academic processes. It is related to quality assurance and enhancement of quality in various academic activities. It is aimed at understanding the existing system, assessing the strengths and weaknesses of academic departments, suggesting methods for academic improvement and overcoming the weaknesses and identifying the opportunities for academic reforms.

PERFORMA OF ACADEMIC AUDIT OF DEPARTMENTS

1. **Name of the Department:** Chemical Engg., HBTU Kanpur

2. **Date of Audit:** 23|09|2022

Note:

i. Please rate the following parameters / indicators on a scale of 1-10, with 10 being the highest depending upon availability/non availability of a well-defined mechanism / process of the said indicator / criterion. For some of the criterion, it could be subjective as well, but based on standard norms / guidelines / or rationale of the experts.

ii. Kindly give your opinion on the strength and weakness of the department and your suggestions for 360 degree improvements of academic processes.

A. Academics

A. 1	Teaching and Learning	Score
		10
1	Admissions in first year	10
2	Curriculum (Development, Structure, Course Syllabi, Flexibility)	
3	Formal Academic Load on Students (Teaching, Laboratory/Practical, Projects)	
4	Evaluation Process (Continuing Evaluation, End-Term Evaluation, transparency, redressal mechanism for students)	10
5	Number of faculty members (Sanctioned, Filled, Vacant, On contract against vacant)	8.0
6	Number of technical staff in labs	5.0
7	E-Assisted Learning i. Availability of Library Resources (books, book bank, journals and Major	

	Search Engines (like Scopus, Web of Science) ii. Multi-Media Assisted Teaching (such as Use of ICT, Audio, Video, LCD, LAN, e-learning – resources, OpenEducational Resources	8
8	Technical Societies for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	10
9	Educational Tour/Training/Industrial visits/Internship opportunities	10
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	9
11	Faculty Mentoring/Faculty Advisor for Students	10
12	Number of teaching days in a semester	10
13	Formal mechanism to obtain feedback from students and stakeholders on Curriculum (Such as Student feedback for teaching & Course evaluation etc.)	10
	Total Score (out of 130)	110

A. 2	**Industry - Institute Interaction**	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	9
3	Organizing expert lectures from industry.	8
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	8
5	Participation of students in industrial tours and internship programs.	10
6	Interaction of faculty with industries in terms of visits, lab development.	8
7	Industrial research projects	7
	Total Score (out of 70)	60

A. 3	**Laboratory Development**	Score
1.	New labs developed in last three year.	10
2.	Development of infrastructure in existing labs.	10
3.	Up Gradation of existing equipment's including replacement.	10
4.	Development of Laboratory manuals of experiments in existing labs.	10
5.	Development of new experiments in existing labs.	9
	Total Score (out of 50)	49

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B. Research

B.	Research	Score
1.	Research Ambience in the Department	8
2.	Quality of Publications	9
3.	Relevance of Research to society	9
4.	Student Exposure to Attending Quality Conferences/Symposia	9
5.	Research Intensity of Faculty Members	9
6.	Inter Departmental Research Collaborations	9
7.	Industry/externally funded sponsored research	8
	Total Score (out of 70)	61

C. Outreach activities

C.	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	9
2.	Delivering of talk / lecture in HBTU apart from regular courses.	9
3.	Expert lectures in other institutes.	9
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoS etc.	9
5.	Contribution to Professional Societies.	9
6.	Editorial responsibilities / reviews of SCI Journals.	9
7.	Organization of Seminar, Workshops, Symposia, FDP.	9
	Total Score (out of 70)	63

D. Departmental Infrastructure and Human Resource

D.	Departmental Infrastructure and Human Resource	Score
1	Adequacy of Class Rooms and Multi-Media Facility	10
2	Availability of adequate Laboratories	10
3	Availability of Conference/Seminar Room, etc	8
4	Availability of adequate Seating Space/Offices and furnishings for Faculty and Research Students	8
5	Availability of Internet Services in Research Labs and Class Rooms	8
6	Departmental Library	7
7	Computing Facilities and Software	7
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-fi etc.)	8
9	Faculty- Student Ratio	8
10	Support Staff (Technical/Administrative) Adequacy	5
	Total Score (out of 100)	79

E. Outcomes

E.	Outcomes	Score
1	Placements of B. Tech. students	10
2	Publications per Faculty in Indexed Journals / Year (Average of last three years)	8+1=9
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	9
4	Recognitions; Awards(National/International) to Faculty/Students	8
5	Consultancy and Externally Funded Projects	7
6	No. of B. Tech. / M. Tech. / Ph.D. graduates to have taken up career in Academics	6
	Total Score (out of 60)	49

Grand total (out of 550):

SWOC Analyses

a) Strength:

- Faculty = 93% have PhDs, strong/rich experience
- Strong applied program for B.TECH with significant hands on
- Strong internship program.
- Good placement.
- Good research / publications

b) Weakness:

- Inadequate technical & other supporting staff.
- Weaker multidisciplinary research projects.
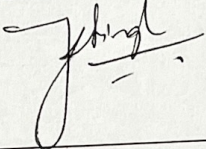- Need to strengthened PhD & M.TECH program.

c) Opportunities:

- Strong alumni base - need to create program with them.
  - Donor funded Awards, Lab etc
- Create more industry (alumni) base?
  project - Use CSR
- Joint program with IIT kanpur, being in the same place.

d) Challenges:

- Attracting more PhD. & M.TECH (Enhancing scholarship)
- Enhancing quality of research lab facility
- Creating a top class computational facility

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Comments for improvement

- Up gradation of lab facilities, chemical software's, Library
- Create a central Research lab with state-of-art facilities (use FIST Grant)
- Credit consultancy projects.
- /obtain Need more patents, Technology & Technology transfer

Signature of the Auditor	JSingh
Name, Designation and Affiliation	Jayant K. Singh professor, chemical Engineering IIT Kanpur

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