

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: *11/03/2025*

Note:

- 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.
- 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
1	Admissions in first year	10
2	Curriculum (Development, Structure, Course Syllabi, Flexibility)	10
3	Formal Academic Load on Students (Teaching, Laboratory/Practical, Projects)	10
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)	09
6	Number of technical staff in labs	07
7	E-Assisted Learning	
	i. Availability of Library Resources (books, book bank, journals and Major	

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	ii. Search Engines (like Scopus, Web of Science) Multi-Media Assisted Teaching (such as Use of ICT, Audio, Video, LCD, LAN, e-learning – resources, OpenEducational Resources)	09
8	Technical Societies for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	09
9	Educational Tour/Training/Industrial visits/Internship opportunities	09
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	09
11	Faculty Mentoring/Faculty Advisor for Students	09
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)	121

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	07
3	Organizing expert lectures from industry.	07
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	07
5	Participation of students in industrial tours and internship programs.	10
6	Interaction of faculty with industries in terms of visits, lab development.	08
7	Industrial research projects	07
	Total Score (out of 70)	56

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	08
2.	Development of infrastructure in existing labs.	08
3.	Up Gradation of existing equipment's including replacement.	08
4.	Development of Laboratory manuals of experiments in existing labs.	09
5.	Development of new experiments in existing labs.	09
	Total Score (out of 50)	42

B. Research

B.	Research	Score
1.	Research Ambience in the Department	
2.	Quality of Publications	08
3.	Relevance of Research to society	08
4.	Student Exposure to Attending Quality Conferences/Symposia	08
5.	Research Intensity of Faculty Members	07
6.	Inter Departmental Research Collaborations	08
7.	Industry/externally funded sponsored research	08
		06
	Total Score (out of 70)	53

C. Outreach activities

C.	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	09
2.	Delivering of talk / lecture in HBTU apart from regular courses.	09
3.	Expert lectures in other institutes.	09
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoS etc.	09
5.	Contribution to Professional Societies.	09
6.	Editorial responsibilities / reviews of SCI Journals.	09
7.	Organization of Seminar, Workshops, Symposia, FDP.	09
	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	09
2	Availability of adequate Laboratories	09
3	Availability of Conference/Seminar Room, etc	09
4	Availability of adequate Seating Space/Offices and furnishings for Faculty and Research Students	09
5	Availability of Internet Services in Research Labs and Class Rooms	09
6	Departmental Library	09
7	Computing Facilities and Software	07
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-fi etc.)	09
9	Faculty- Student Ratio	09
10	Support Staff (Technical/Administrative) Adequacy	06
	Total Score (out of 100)	85

E. Outcomes

E.	Outcomes	Score
1	Placements of B. Tech. students	09
2	Publications per Faculty in Indexed Journals / Year (Average of last three years)	09
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	09
4	Recognitions; Awards(National/International) to Faculty/Students	08
5	Consultancy and Externally Funded Projects	07
6	No. of B. Tech. / M. Tech. / Ph.D. graduates to have taken up career in Academics	04
	Total Score (out of 60)	46

Grand total (out of 550):

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SWOC Analyses

a) Strength:

- Strong UG program resulting in core jobs
- Improvement in research/teaching infrastructure in the department via new lab, seminar room, teaching classes etc.
- Strong internship program leading to good core jobs for UG students

b) Weakness:

- Strength of technical/support staff needs to be improved
- M.Tech program could be improved via specialization in upcoming area i.e. data science & sustainability
- Research infrastructure & Computational facilities need to be improved.

c) Opportunities: - Funding by faculties could be improved.

- Support from alumni for developing research/computational infrastructure could be pursued
- Chemical industries with support of alumni should be approached for research funding via their CSR grant
- International ^{travel} support for conferences etc. could be established

d) Challenges: for faculties.

- Attracting good students for M.Tech. & PhD program
- To further strengthen research, it is required to develop research infrastructure at department level.
- Travel support for faculties for international conference

Comments for improvement

- include more courses (core/ electives) at UG + PG level in the area of data science & sustainability.
- Research & computational infrastructure could be improved at the department level.
- one day event focussed on research (in a year) can be initiated at department level.

Signature of the Auditor	Raju Kumar Gupta
Name, Designation and Affiliation	Prof. RAJU KUMAR GUPTA IIT KANPUR

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HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Dean (Continuing Education and Internal Quality Assurance)

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Summary Sheet of Academic Audit of the Department

Name of the Department: Chemical Engg., HBTU KANPUR
 Name and Designation of Auditor: RAJU KUMAR GUPTA, Professor, HBTU KANPUR
 Date of Audit: 11/03/2025

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	121
		A.2. Industry - Institute Interaction	70	56
		A.3. Laboratory Development	50	42
B.	Research	--	70	53
C.	Outreach Activities	--	70	63
D.	Departmental Infrastructure and Human Resources	--	100	85
E.	Outcomes	--	60	46
Total Score			550	466

Strengths	Opportunities
- Strong UG program resulting in less job - Improvement in research / teaching infrastructure in dept via new lab, seminar room - Strong internship program leading to good core jobs for UG student	- Funding by faculties could be improved - Support from alumni for developing research / computational infrastructure could be improved - Chemical industries with support of alumni should be approach for research funding - International travel support for challenges conferences
Weaknesses	Challenges
- Strength of technical / support staff need to be improved - M-Tech program could be improved via specialization in upcoming area - Research infrastructure & computational facility need to be improved	- Attracting good student for M-Tech & Ph.D - Need to develop research infrastructure at dept level - Travel support for faculties for international conference

General Remarks: Include more courses at UG/PG level in area of data science & sustainability
 Research & computational infrastructure could be improved at dept level
 One day event focused on research (in year) can be initiated at dept level
 Decision about the state of academic processes and their outcomes: Good / Medium / Poor (Please tick any one)

Signatures with date:

Ashish Kumar 11/3/25
 (HoD)

(Dean of School)

Raju Kumar Gupta 11/3/25
 (Auditor)

V. Dixit 11/03/2025
 (Dean - CEIQA / IQAC Coordinator)
 (Prof. Vandana Dixit Kaushik)
 Dean, CE & QA

Place: HBTU, Kanpur