

AUDIT REPORT

(Session 2024-25)

**Department of Chemical
Engineering**
Harcourt Butler Technical University

Harcourt Butler Technical University, Kanpur, Uttar Pradesh
Dean, Continuing Education & Internal Quality Assurance
Internal Quality Assurance Cell (IQAC)

Academic Audit Policy

Academic Audit of various academic departments of Harcourt Butler Technical University, Kanpur is conducted on a regular basis. It is a rigorous 360 degree appraisal of the department. Academic Audit is all about academic, research and learning outcomes of its students. There are two Performa, viz. a detailed Academic Audit Performa, and A Summary Sheet. The activity of Academic Audit is conducted and coordinated by Dean - CEIQA / IQAC Coordinator of the university after seeking all due approvals of the competent authority. Academic Auditor is usually an academicians of eminence either from an IIT or a NIT. The Academic Audit Report is prepared and tabled before IQAC in its meeting. IQAC holds at least four meeting in a year. Depending upon the Academic Audit Report, and the Auditor's observation therein, the concerned person, department / unit / section is asked to take the necessary action. The action taken, is further reviewed by the IQAC, and reported by the IQAC Coordinator in IQAC meeting. Detailed Academic Audit Performa is as below.

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 ENGINEERING/MANAGEMENT DEPARTMENTS

1. Name of the Department: *CHEMICAL ENGG.*

2. Date of Audit: *24/4/2026*

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	<i>10</i>
2	Curriculum (Development, Structure, Course Syllabi, Flexibility)	<i>10</i>
3	Formal Academic Load on Students (Teaching, Laboratory/Practical, Projects)	<i>10</i>
4	Evaluation Process (Continuing Evaluation, End-Term Evaluation, transparency, redressal mechanism for students)	<i>09</i>
5	Number of faculty members (Sanctioned, Filled, Vacant, On contract against vacant)	<i>10</i>
6	Number of technical staff in labs	<i>8</i>
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, Open Educational Resources)	<i>10</i>
8	Technical Societies for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	<i>9</i>
9	Educational Tour/Training/Industrial visits/Internship opportunities	<i>9</i>
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	<i>9</i>

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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)	124

A. 2	Industry - Institute Interaction	Score (10)
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	8
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	8
	Total Score (out of 70)	60

A. 3	Laboratory Development	Score (10)
1.	New labs developed in last three year.	8
2.	Development of infrastructure in existing labs.	8
3.	Up Gradation of existing equipment's including replacement.	9
4.	Development of Laboratory manuals of experiments in existing labs.	9
5.	Development of new experiments in existing labs.	9
	Total Score (out of 50)	43

B. Research

B.	Research	Score (10)
1.	Research Ambience in the Department	8
2.	Quality of Publications	09

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3.	Relevance of Research to society	9
4.	Student Exposure to Attending Quality Conferences/Symposia	8
5.	Research Intensity of Faculty Members	8
6.	Inter Departmental Research Collaborations	8
7.	Industry/externally funded sponsored research	7
Total Score (out of 70)		57

C. Outreach activities

C.	Outreach activities	Score (10)
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 (10)
1	Adequacy of Class Rooms and Multi-Media Facility	9
2	Availability of adequate Laboratories	9
3	Availability of Conference/Seminar Room, etc	9
4	Availability of adequate Seating Space/Offices and furnishings for Faculty and Research Students	9
5	Availability of Internet Services in Research Labs and Class Rooms	9
6	Departmental Library	9
7	Computing Facilities and Software	08

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8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-Fi etc.)	09
9	Faculty- Student Ratio	10
10	Support Staff (Technical/Administrative) Adequacy	7
	Total Score (out of 100)	88

E. Integration of Recent Advancements

E	Integration of Recent Advancements	Score (10)
1	Curriculum Integration, Course employability meets with Sustainable Development Goals (SDG)	9
2	Research and Innovation, Student Training/capstone project, Outreach Programs related to SDG	9
3	Curriculum Integration with Artificial Intelligence(AI), AI-Enabled Teaching-Learning Practices	9
4	Student Skill Development in AI	9
5	Perception in the outer world	8
	Total Score (out of 50)	44

F. Outcomes

F.	Outcomes	Score (10)
1	Placements of B. Tech. students	9
2	Publications per Faculty in Indexed Journals / Year (Average of last three years)	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	8
6	No. of B. Tech. / M. Tech./ Ph.D. graduates to have taken up career in Academics	5
	Total Score (out of 60)	48

Grand total (out of 600):

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HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Dean (Continuing Education and Internal Quality Assurance)

Internal Quality Assurance Cell (IQAC)

Summary Sheet of Academic Audit of the Department

1. Name of the Department:
2. Name and Designation of Auditor:
3. Date of Audit:

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	124
		A.2. Industry – Institute Interaction	70	60
		A.3. Laboratory Development	50	43
B.	Research	--	70	57
C.	Outreach Activities	--	70	63
D.	Departmental Infrastructure and Human Resources	--	100	88
F	Integration of Recent Advancements	--	50	44
E.	Outcomes	--	60	48
Total Score			600	527

Strengths 1. Strong UG Programme with good placement of students 2. Improvement in Research output 3. 4.	Opportunities 1. M Tech in Chemical Engg in AI and Sustainability can be initiated 2. 3. 4.
Weaknesses 1. Alumni support needs to be improved 2. Faculty participation in bigger grant proposal needs to be improved 3.	Challenges 1. Recruitment of Technical staff 2. Administrative load on faculty specially younger ones need to be reduced 3.

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SWOC Analyses

a) Strength:

- Strong UG Programme with good placement of students
- Improvement in Research output

b) Weakness:

Alumni Support needs to be improved

Faculty participation in bigger grant proposal needs to be improved

c) Opportunities:

MTech in Chemical Engg in AI and Sustainability can be initiated

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d) Challenges:

Recruitment of Technical Staff

Administrative load on faculty specially younger one needs to be reduced.

Comments for Improvement:

Need to celebrate Research scholar day.
Research and computational infrastructure needs to be improved with the help of Alumni support.

Signature of the Auditor	Raju Kumar Gupta
Name, Designation and Affiliation	RAJU KUMAR GUPTA Professor, IIT Kanpur

4.	4.
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General Remarks:

Department has strong potential to do wonderful in area of research

Decision about the state of academic processes and their outcomes: Good / Medium / Poor
(Please tick any one)

Signatures with date:

HoD <i>G/Vm</i> <u>24/4/2026</u>	<i>Proaveen</i> <u>Zilqiboss Begum Puman Gfky</u> Dean of School	Auditor	<i>G/Vm</i> <u>24/4/2026</u> Dean/Associate Dean/Assistant Dean CEIQA or Academic Audit Coordinator
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Place: HBTU, Kanpur