



# हरकोटे बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

**HARCOURT BUTLER TECHNICAL UNIVERSITY**

NAWABGANJ, KANPUR - 208002, U.P., INDIA

(Formerly Harcourt Butler Technological Institute, Kanpur)

Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : [vc@hbtu.ac.in](mailto:vc@hbtu.ac.in)

**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Approval



हरकोटे बटलर प्राविधिक  
विश्वविद्यालय, कानपुर,  
उ०प्र०

### टिप्पणी एवं आदेश

पृष्ठ सं० .....

अनुभाग / विभाग

पत्रावली सं० ..

**Hon'ble Vice Chancellor**  
**HBTU., Kanpur**

In view of the filing of Annual Quality Assurance Report (AQAR) of NAAC and NBA accreditation of few departments, the Academic Audit of various departments is proposed in the months of November – December, 2023. The tentative schedule is also proposed on the right side of the note sheet. In this regard it is requested from your good self to kindly approve the conduction of Academic Audit of various departments along with approving the tentative schedule for the conduction of this Audit.

Since it will be a time bound and rigorous activity, it is further proposed to nominate a senior Professor of the University for the smooth conduction of the entire Academic Audit. In view of the above, Prof. Yaduvir Singh, Electrical Engineering Department may be nominated as the Coordinator, Academic Audit to conduct the entire process.

The Audit will be conducted for all the Schools and will be monitored by the committee comprising of the following members:

- |   |        |
|---|--------|
| 1.) Dean/ Associate Dean of respective School                           | Member |
| 2.) Concerned Head of Department  | Member |
| 3.) Coordinator, Academic Audit/<br>Dean CE&IQA/ Associate Dean, CE&IQA | Member |
| 4.) Auditor (External Expert)   | Member |

Further, the proposed names of Academic Auditors (External Experts) along with their designation/ departments/ affiliation are tabulated below. Kindly approve from the list of three Auditors one Auditor for each department by prioritizing/ may like to propose the name of any Auditor from your side.

Sr. No.	Name of the Department	Name of the Auditor/ Affiliation	Prioritized approval of the Auditor/ Name of the Auditor as approved by your good self
1.	Computer Science & Engineering	1. Prof. Nitin Saxena CSED IIT Kanpur	
		2. Prof. Mainak Chaudhary CSED IIT Kanpur	
		3. Prof. Arnab Bhattacharya CSED IIT Kanpur	
2.	Mechanical Engineering	1. Prof. J. Ram Kumar MED IIT Kanpur	
		2. Prof. Shantanu Bhattacharya MED IIT Kanpur	
		3. Prof. Arun K. Saha MED IIT Kanpur	



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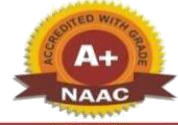
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		— 2 —		पृष्ठ सं० .....	
		टिप्पणी एवं आदेश		पत्रावली सं०	
		अनुभाग / विभाग			
3.	Electrical Engineering	1. Prof. M.J. Akhtar EED IIT Kanpur			
		2. Prof. S. P. Das EED IIT Kanpur			
		3. Prof. R. Potluri EED IIT Kanpur			
4.	Electronics Engineering	1. Prof. M.J. Akhtar EED IIT Kanpur			
		2. Prof. K. V. Srivastava, HoD EED IIT Kanpur			
		3. Prof. Baquer Mazhari EED IIT Kanpur			
5.	Civil Engineering	1. Prof. Animesh Das CED IIT, Kanpur			
		2. Prof. Rajesh Sathiyamoorthy CED IIT Kanpur			
		3. Prof. Sudip Kumar Mishra CED IIT Kanpur			
6.	Chemical Engineering	1. Prof. Raju K. Gupta CHED IIT Kanpur			
		2. Prof. Amit Dhiman CHED IIT Roorkee			
		3. Prof. Jayant Kumar Singh CHED IIT Kanpur			
7.	Food Technology	1. Dr. Narendra Mohan Agarwal Director, NSI Kanpur			
		2. Dr. Girish Prasad Dixit Director, IACR-IIPR, Kanpur			
		3. Dr. Soni Gupta Director, School of Advanced Agriculture Sciences & Technology (SAAST) CSJMU, Kanpur			



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## Academic Audit (2022-23)-Approval

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### टिप्पणी एवं आदेश

पृष्ठ सं० .....



हरकोटे बटलर प्राविधिक  
विश्वविद्यालय, कानपुर,  
उ०प्र०

अनुभाग / विभाग

पत्रावली सं० ...

8.	Biochemical Engineering	1. Prof. Ashok Kumar Biological Sciences & Bioengineering Department (BSBE) IIT Kanpur	
		2. Prof. Ashwani Kumar Thakur BSBE IIT Kanpur	
		3. Prof. Varsha Gupta Director, Department of Life Sciences & Bio Technology CSJMU, Kanpur	
9.	Oil Technology	1. Prof. Sanjiv Garg CHED IIT Kanpur	
		2. Prof. Dhananjay Singh CHED IET Lucknow	
		3. Dr. Anurag Tripathi Associate Professor, CHED IIT Kanpur	
10.	Paint Technology	1. Prof. Kamal K. Kar Department of Material Science & Engineering IIT Kanpur	
		2. Prof. Animangsu Ghatak CHED IIT Kanpur	
		3. Prof. Dhananjay Singh CHED IET Lucknow	
11.	Plastic Technology	1. Prof. Kantesh Balani Department of Material Science & Engineering IIT Kanpur	
		2. Dr. Rahul Mangal Associate Professor, CHED IIT Kanpur	
		3. Prof. Nishith Verma CHED IIT Kanpur	
12.	Leather Technology	1. Mr. Rajendra Kumar Jalan Vice Chairman-Council for Leather Exports & Director, M/s. AFPL Global Pvt. Ltd.	
		2. Mr. Sanjay Leekha Chairman-Council for Leather Exports &	



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## Academic Audit (2022-23)-Approval

— 4 —

पृष्ठ सं० .....

**टिप्पणी एवं आदेश**

पत्रावली सं० ...

हरकोटे बटलर प्राविधिक विश्वविद्यालय, कानपुर, २०१०

अनुभाग / विभाग

		Managing Director, M/s. Alpine Apparels Pvt. Ltd.	
		3. Prof. Ram Sharan Singh CHED IIT BHU	
13.	Physics Department	1. Prof. Rajeev Kumar Gupta Physics Department IIT Kanpur	
		2. Prof. R.K.Shukla Physics Department Lucknow University	
		3. Dr. Arjun Bagchi Associate Professor, Physics Department IIT Kanpur	
14.	Chemistry Department	1. Prof. Jitendra K. Bera Chemistry Department IIT Kanpur	
		2. Prof. Manas K. Ghorai Chemistry Department IIT Kanpur	
		3. Prof. Amlendu Chandra Chemistry Department IIT Kanpur	
15.	Mathematics Department	1. Prof. Prasar Mohanty Mathematics Department IIT Kanpur	
		2. Prof. Nandani Nilakanthan Mathematics Department IIT Kanpur	
		3. Prof. Rama Rawat Mathematics Department IIT Kanpur	
16.	Humanities & Social Sciences	1. Prof. Anshu Yadav Department of Business Management CSJMU, Kanpur	
		2. Prof. T. Ravichandranan Department of Humanities & Social Sciences IIT Kanpur	
		3. Dr. Sayan Chattopadhyay Associate Professor, Department of Humanities & Social Sciences IIT Kanpur	



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## Academic Audit (2022-23)-Approval

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### टिप्पणी एवं आदेश

पृष्ठ सं० .....

हरकोटे बटलर प्राविधिक विश्वविद्यालय, कानपुर, उ०प्र०

अनुभाग / विभाग

पत्रावली सं० ..

17.	Department of Management Studies	1. Prof. Anshu Yadav Department of Business Management CSJMU, Kanpur	
		2. Dr. Devlina Chaterjee Associate Professor, Department of Management Studies IIT Kanpur	
		3. Prof. B.V. Phani HoD, Department of Management Studies IIT Kanpur	

Submitted for your kind approval.

25/10/2023  
(Prof. Vandana Dixit Kaushik)  
Dean, CE&IQA

Approves the following:-

- ① Conduction of Academic audit as per the proposed schedule
- ② ~~set~~ Name of auditors in the same order as proposed
- ③ Coordinator Prof. Yadvir Singh.

The matter was already approved over WhatsApp message on 26/10/23

Dean

कुलपति  
हरकोटे बटलर प्राविधिक विश्वविद्यालय  
कानपुर-2



हरकोटे बटलर प्राविधिक विश्वविद्यालय

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Academic Audit (2022-23)-Approval

- 6 -

Hon'ble Vice Chancellor

As per the approval given by your good self of external experts (Auditors) in order to conduct the Academic Audit of various departments, the letters had been sent to the Auditors. vide letter No.(s) 57/CE&IRA/23 to 62/CE&IRA/2023 for conduction of Academic Audits starting from 06.11.2023 to 09.11.2023.

Kindly approve the same. Submitted for the needful response.

P. Dixit  
02/11/2023

Dean, CE&IRA

Approved.

8  
2/11/2023

Dean CE&IRA

कुलपति  
हरकोटे बटलर प्राविधिक विश्वविद्यालय  
कानपुर-2

Hon'ble Vice Chancellor

As per the approval given by your goodself the Academic Audits of remaining departments were scheduled from 20.11.2023 to 25.11.2023. In view of the above, kindly permit to send the letters to the Auditors vide letter No(s) 64/CE&IRA/23 to 74/CE&IRA/2023 for conduction of Academic Audit of various departments.

P. Dixit  
18/11/2023  
Dean, CE&IRA

Approval

16/11/2023

कुलपति

हरकोटे बटलर प्राविधिक विश्वविद्यालय  
कानपुर



# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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## Academic Audit (2022-23)-Approval

टिप्पणी एवं आदेश पृष्ठ सं ७



हरकोटे प्राविधिक विश्वविद्यालय, कानपुर, उ.प्र.

अनुभाग / विभाग पत्रावली सं ००००००

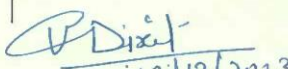
**Hon'ble Vice Chancellor**  
**HBTU., Kanpur**

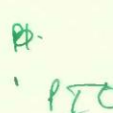
The Academic Audits of all the departments for Academic Session, 2022-2023 have been conducted during 06.12.2023 to 25.11.2023 as per the approved schedule. In this regard, the Honorarium as well as TA has to be disbursed to the External Auditors who were nominated by your good self (note sheet page No(s) 01 - 05). All the TA bills along with the consolidated list containing the details of Auditors are attached on the right side of the note sheet.

The bank details of the External Auditors along with the amount to be disbursed are given in the table below:

Sr. No	Name of External Auditor	Name of External Auditor/ Place	Name of the Department	Date of the Academic Audit	Bank of Branch	Account Number	IFSC Code	Honorarium/ TA/Amount
1.	Prof. Dhunanjay Singh	CHED, IIT K	Oil Technology	23.11.2023	Bank of Baroda	79300100007660	BARBOVJIEM	Honorarium+ TA 8479/-
2.	Prof. Shantanu Bhattacharya	MED, IIT K	Mechanical Engineering	21.11.2023	State Bank of India	30199306380	SBIN0001161	Honorarium 5000/-
3.	Prof. M.J. Akhtar	EED, IIT K	Electrical Engineering	06.11.2023	HDFC Bank	01271930015318	HDFC0000127	Honorarium 5000/-
4.	Prof. Sudib Kumar Mishra	CED, IIT K	Civil Engineering	22.11.2023	ICICI	787001500173	ICIC0007870	Honorarium 5000/-
5.	Prof. Raju K. Gupta	CHED, IIT K	Chemical Engineering	22.11.2023	State Bank of India	20102527012	SBIN0001161	Honorarium 5000/-
6.	Dr. Narendra Mohan Agarwal	Director, NSI Kanpur	Food Technology	22.11.2023	Canara Bank	2650101000045	CNBR0002650	Honorarium 5000/-
7.	Prof. Ashok Kumar	BSBED, IIT K	Biochemical Engineering	24.11.2023	State Bank of India	10426110314	SBIN0001161	Honorarium 5000/-
8.	Prof. Nitin Saxena	CSED, IIT K	Computer Science & Engineering	25.11.2023	State Bank of India	30292734002	SBIN0017613	Honorarium 5000/-
9.	Prof. Kamal K. Kar	MED, IIT K	Paint Technology	08.11.2023	UBI	5372020100542515	UBIN0553727	Honorarium 5000/-
10.	Prof. Kantesh Balani	Material Science & Engg Dept., IIT K	Plastic Technology	09.11.2023	State Bank of India	10620907065	SBIN0001161	Honorarium 5000/-
11.	Prof. Rajeev K. Gupta	PHYD, IIT K	Physics Department	20.11.2023	State Bank of India	30019987322	SBIN0001161	Honorarium 5000/-
12.	Prof. Jitendra K. Bera	CHYD, IIT K	Chemistry Department	24.11.2023	State Bank of India	35446927608	SBIN0001161	Honorarium 5000/-
13.	Prof. Namita Tiwari	Maths Dept., CSJMU, Kanpur	Mathematics Department	21.11.2023	Bank of Baroda	29400100019225	BARBOCSUKAN	Honorarium 5000/-
14.	Prof. Anshu Yadav	School of Business Management, CSJMU, Kanpur	Humanities & Social Sciences	09.11.2023	Union Bank of India	349502010978056	UBIN0534951	Honorarium 5000/-

Kindly approve the payment of Honorarium along with TA to the respective External Auditors.

  
 12/12/2023  
 Dean, CG & QA

  
 P.S.O.



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Academic Audit (2022-23)-Approval

- 10 -

From the Page

Pr. see of amount.

13/12/2023

कुलपति  
हरकोटे बटलर प्राविधिक विश्वविद्यालय  
कानपुर-2

10000/10000

अध्यापक प्रशासकी के पूर्व 01 से 09 तक उत्पन्न/रीफ/अनुमोदन का आवेदनक करते का अन्त मने। रि.कि 06.11.23 से 25.11.23 तक Academic Audit एभ्यक्त कराते हुके बादी तरफ TA/Hon कुल ₹73479.00 का सुगतान उत्पन्न-उत्पन्न किता जमा है। प्रो. Dhananjay Singh का भाग दे मके परीक्षोपारिता ₹2790.00 + 5000.00 कुल ₹7790.00 के साथ ही 13 अ-य हदयो के @ 5000/- कुल ₹65000 + 7790.00 ₹72790.00 के सुगतान हेतु विचारार्थ-उत्पन्न।

197/118/23-24

प्रत्यापूर्णावित /

14/12/23  
भा

18/12/2023  
L.A.G.

19/12/2023

माओ कुलपति

Approved

19/12/2023

Passed for Payment of ₹72790.00  
(₹ Seventy two thousand seven hundred ninety only)

कुलपति  
हरकोटे बटलर प्राविधिक विश्वविद्यालय  
कानपुर-2





हरकोटे बटलर प्राविधिक विश्वविद्यालय

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 हरकोटे बटलर प्राविधिक विश्वविद्यालय, कानपुर, उ०प्र०	<b>टिप्पणी एवं आदेश</b>	पृष्ठ सं० ...7.
	अनुभाग / विभाग	पत्रावली सं० .
<p><u>Hon'ble Vice Chancellor</u></p> <p>As per the telephonic conversation with many experts there have been changes in the Schedule of Academic Audits of various departments. In view of the above the "Revised Schedule of Academic Audit of various Departments under different Schools of the University" is attached on the right side of the file. kindly approve the same.</p> <p><i>[Signature]</i> 17/11/2023 Dean, C&amp;TIA.</p> <p style="text-align: center;">Approval <i>[Signature]</i> 17/11/2023 हरकोटे बटलर प्राविधिक विश्वविद्यालय कानपुर-2</p> <p><u>Hon'ble Vice Chancellor</u></p> <p>The Academic Audit of Mathematics Department is scheduled to be held on 23.11. from 2:00 PM onwards. In this regard, none of the approved external Auditors on page No. -4- of the note sheet agreed to get the Academic Audit conducted due to their busy schedule.</p> <p>In view of the above, kindly approve Dr. Namita Tiwari, HoD, Maths</p> <p style="text-align: right;">P.T.O.</p>		



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विश्वविद्यालय, कानपुर,  
उ०प्र०

टिप्पणी एवं आदेश


पृष्ठ सं० ...7.

अनुभाग/विभाग

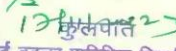
पत्रावली सं० .....

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17/11/2023  
Dean, C&IQA.

Approved

  
17/11/23  
हरकोटे बटलर प्राविधिक विश्वविद्यालय  
कानपुर-2

Hon'ble Vice Chancellor

The Academic Audit of Mathematics Department is scheduled to be held on 23.11.23 from 2:00 PM onwards. In this regard, none of the approved external Auditors on page No. -4- of the note sheet agreed to get the Academic Audit conducted due to their busy schedule.

In view of the above, kindly approve Dr. Namita Tiwari, HoD, Maths

P.T. o .



# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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1921 - 2021



### Academic Audit (2022-23)-Department of Biochemical Engineering

#### 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	101
		A.2. Industry - Institute Interaction	70	53
		A.3. Laboratory Development	50	33.5
B.	Research	--	70	50.5
C.	Outreach Activities	--	70	49.5
D.	Departmental Infrastructure and Human Resources	--	100	69
E.	Outcomes	--	60	41
<b>Total Score</b>			550	397.5

<b>Strengths</b> 1. Motivation and interest of faculty 2. Quality of students 3. UG Programme 4. Industry exposure 5. Administrative support	<b>Opportunities</b> 1. To interact with IIT 2. Collaborative research 3. External workshops 4. Interdisciplinary work
<b>Weaknesses</b> 1. Faculty strength 2. Infrastructure 3. Lab facilities 4. PG (PhD) programme.	<b>Challenges</b> 1. Extramural grants 2. Quality PhD students 3. Sustainability 4. Research facilities.

General Remarks:

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

Signatures with date:

(HoD)

(Dean of School)

(Auditor)

(Dean-CEIQA/IQAC, Coordinator)

24/11/2023

Place: HBTU, Kanpur

G.L. DEVNANI IIT Kanpur  
ASHOK KUMAR



हरकोटे बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

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100+ YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Biochemical Engineering

### 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:

2. Date of Audit:

**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	8
2	Curriculum (Development, Structure, Course Syllabi, Flexibility)	8
3	Formal Academic Load on Students (Teaching, Laboratory/Practical, Projects)	8
4	Evaluation Process (Continuing Evaluation, End-Term Evaluation, transparency, redressal mechanism for students)	8
5	Number of faculty members (Sanctioned, Filled, Vacant, On contract against vacant)	7
6	Number of technical staff in labs	8
7	E-Assisted Learning	7
	i. Availability of Library Resources (books, book bank, journals and Major	7

1

*[Handwritten signatures and initials]*



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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Biochemical Engineering

	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)	
8	Technical Societies for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	7
9	Educational Tour/Training/Industrial visits/Internship opportunities	8
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	8
11	Faculty Mentoring/Faculty Advisor for Students	8
12	Number of teaching days in a semester	8
13	Formal mechanism to obtain feedback from students and stakeholders on Curriculum (Such as Student feedback for teaching & Course evaluation etc.)	8
<b>Total Score (out of 130)</b>		<b>101</b>

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	8
2	Involvement of industry expert in designing curriculum.	7
3	Organizing expert lectures from industry.	8
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	7
5	Participation of students in industrial tours and internship programs.	8
6	Interaction of faculty with industries in terms of visits, lab development.	7
7	Industrial research projects	8
<b>Total Score (out of 70)</b>		<b>53</b>

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	6.5
2.	Development of infrastructure in existing labs.	6.5
3.	Up Gradation of existing equipment's including replacement.	6.5
4.	Development of Laboratory manuals of experiments in existing labs.	7
5.	Development of new experiments in existing labs.	7
<b>Total Score (out of 50)</b>		<b>33.5</b>

2








# हरकोटे बटलर प्राविधिक विश्वविद्यालय

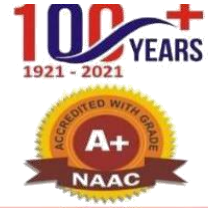
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## Academic Audit (2022-23)-Department of Biochemical Engineering

### B. Research

B.	Research	Score
1.	Research Ambience in the Department	7
2.	Quality of Publications	7
3.	Relevance of Research to society	7.5
4.	Student Exposure to Attending Quality Conferences/Symposia	7.5
5.	Research Intensity of Faculty Members	7.5
6.	Inter Departmental Research Collaborations	7
7.	Industry/externally funded sponsored research	7
	<b>Total Score (out of 70)</b>	<b>50.5</b>

### C. Outreach activities

C.	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	8
2.	Delivering of talk / lecture in HBTU apart from regular courses.	7
3.	Expert lectures in other institutes.	7
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoS etc.	7
5.	Contribution to Professional Societies.	7
6.	Editorial responsibilities / reviews of SCI Journals.	6.5
7.	Organization of Seminar, Workshops, Symposia, FDP.	7
	<b>Total Score (out of 70)</b>	<b>49.5</b>





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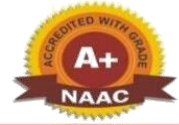
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YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Biochemical Engineering

### D. Departmental Infrastructure and Human Resource

D.	Departmental Infrastructure and Human Resource	Score
1	Adequacy of Class Rooms and Multi-Media Facility	8
2	Availability of adequate Laboratories	7
3	Availability of Conference/Seminar Room, etc	7
4	Availability of adequate Seating Space/Offices and furnishings for Faculty and Research Students	7
5	Availability of Internet Services in Research Labs and Class Rooms	7
6	Departmental Library	7
7	Computing Facilities and Software	6.5
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-fi etc.)	6.5
9	Faculty- Student Ratio	6
10	Support Staff (Technical/Administrative) Adequacy	7
	<b>Total Score (out of 100)</b>	<b>69</b>

### E. Outcomes

E.	Outcomes	Score
1	Placements of B. Tech. students	8
2	Publications per Faculty in Indexed Journals / Year (Average of last three years)	7
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	6.5
4	Recognitions; Awards(National/International) to Faculty/Students	6.5
5	Consultancy and Externally Funded Projects	6.5
6	No. of B. Tech. / M. Tech. / Ph.D. graduates to have taken up career in Academics	6.5
	<b>Total Score (out of 60)</b>	<b>41</b>

Grand total (out of 550):

4



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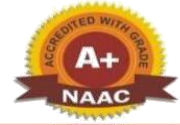
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Biochemical Engineering

### SWOC Analyses

**a) Strength:**

The department activities are focussed and there is dedication from the faculty members to do well. There is sincere effort from the faculty members to impart good education and training. The faculty is very satisfied with the administrative support which has generated motivation of faculty members. The department is open to explore new possibilities in the development of the department.

**b) Weakness:**

The department is low on faculty size which needs to be increased significantly. There is need to improve the practical part of the training. The laboratories need significant improvement. The equipments and infrastructure should be improved so that there is improvement in the research outcome.

**c) Opportunities:**

There are good opportunities for the students and faculty members. Already there is promise in quality of both student and faculty is good. They can explore new opportunities and possibilities.

**d) Challenges:**

Still challenges remain. Main challenge is the faculty strength and quality of research. This needs to be improved significantly, so that there is visible outcome and student remain more motivated. PhD programme needs to improve.

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**Academic Audit (2022-23)-Department of Biochemical Engineering**

Comments for improvement

Faculty strength need to increase. Research focus should be given towards some intramural research funding should be made available. Besides UG teaching, there has to be need to improve the Ph programme particularly the Ph.D programme. Research labs has to improve. UG teaching for lab also can be improved.

Signature of the Auditor

Name, Designation and Affiliation

ASHOK KUMAR  
PROFESSOR (HAG)  
Dept. of Biological Sciences & Bioengineering  
IIT Kanpur.

\*\*\*\*\*  
Dr. ASHOK KUMAR  
PROFESSOR  
DEPARTMENT OF BIOLOGICAL SCIENCES  
& BIOENGINEERING  
INDIAN INSTITUTE OF TECHNOLOGY KANPUR  
KANPUR - 208 016, INDIA



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100+ YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Chemical Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Dean (Continuing Education and Internal Quality Assurance)

Internal Quality Assurance Cell (IQAC)

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### PERFORMA OF ACADEMIC AUDIT OF DEPARTMENTS

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

2. Date of Audit: *22/11/2023*

#### 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	<i>10</i>
2	Curriculum (Development, Structure, Course Syllabi, Flexibility)	<i>09</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>09</i>
6	Number of technical staff in labs	<i>07</i>
7	E-Assisted Learning	
	i. Availability of Library Resources (books, book bank, journals and Major	

*hw*      *Au*      *PL*      *CPA*



हरकोटे बटलर प्राविधिक विश्वविद्यालय

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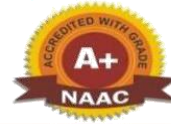
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100+ YEARS  
1921 - 2021



**Academic Audit (2022-23)-Department of Chemical Engineering**

	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)	08
8	Technical Societies for Students	
	i. Departmental Society	08
	ii. Student Chapter(s) of Professional Societies	
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
	<b>Total Score (out of 130)</b>	<b>117</b>

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	06
3	Organizing expert lectures from industry.	06
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	06
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
	<b>Total Score (out of 70)</b>	<b>53</b>

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	07
2.	Development of infrastructure in existing labs.	07
3.	Up Gradation of existing equipment's including replacement.	07
4.	Development of Laboratory manuals of experiments in existing labs.	08
5.	Development of new experiments in existing labs.	08
	<b>Total Score (out of 50)</b>	<b>37</b>

42

100

PL

CPD



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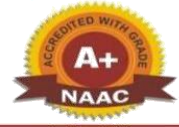
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Chemical Engineering

### B. Research

B.	Research	Score
1.	Research Ambience in the Department	08
2.	Quality of Publications	08
3.	Relevance of Research to society	08
4.	Student Exposure to Attending Quality Conferences/Symposia	07
5.	Research Intensity of Faculty Members	07
6.	Inter Departmental Research Collaborations	08
7.	Industry/externally funded sponsored research	06
	Total Score (out of 70)	52

### 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

*h* *Alc* *PL* *CPD*



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1921 - 2021



**Academic Audit (2022-23)-Department of Chemical Engineering**

**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	08
6	Departmental Library	08
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.)	08
9	Faculty- Student Ratio	09
10	Support Staff (Technical/Administrative) Adequacy	07
	<b>Total Score (out of 100)</b>	<b>83</b>

**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)	08
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	08
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
	<b>Total Score (out of 60)</b>	<b>44</b>

Grand total (out of 550):

4

42

AM

PL - CPD



# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Chemical Engineering

SWOC Analyses

a) Strength:

- Faculty: ~ 90% have PhD and strong research experience
- Strong UG program resulting in core jobs
- Chemical Dept has got separate building. it will improve research collaboration b/w faculties.
- Strong internship program
- Good placement for UG students

b) Weakness:

- Strength of technical staff should be improved
- M.Tech & PhD program. it need to be strengthened.
- Sponsored research funding per faculty could be improved
- Computational facilities including softwares e.g. Aspen should be included in the curriculum.
- weak research infrastructure. Central facility at Dept. level

c) Opportunities: should be improved.

- Dept. has got good alumni database. Support from alumni for developing lab & research infrastructure should be pursued.
- Named travel grants / lab & from Alumni support should be hatched.
- chemical industries could be approached for CSR funding support.

d) Challenges:

- Attracting good students for M.Tech & PhD program (Support from Alumni/ institute for top up salary)
- International travel for conferences for faculties is very less. Support from institute/alumni can be asked for.
- There is a need to develop research infrastructure at department level.

5

✓ Au PE PD



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YEARS  
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## Academic Audit (2022-23)-Department of Chemical Engineering

### Comments for improvement

- Few electives over recent topics e.g. sustainability, green synthesis etc. can be included in the curriculum.
- To improve teaching; best teacher award at dept. level can be initiated.
- Sponsored research grant as well as publications per faculty could be improved
- Department outreach via social media could be improved.
- Research infrastructure at dept. level need to be improved.

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

\*\*\*\*\*

Ashish Kishore

hw

*(Signature)*



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1921 - 2021



### Academic Audit (2022-23)-Department of Chemical Engineering

#### 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: *Chemical Engg., HBTU KANPUR*
2. Name and Designation of Auditor: *Prof. RAJU KUMAR GUPTA, IIT KANPUR*
3. Date of Audit: *22/11/2023*

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	117
		A.2. Industry – Institute Interaction	70	53
		A.3. Laboratory Development	50	37
B.	Research	--	70	52
C.	Outreach Activities	--	70	63
D.	Departmental Infrastructure and Human Resources	--	100	83
E.	Outcomes	--	60	44
Total Score			550	449

Strengths	Opportunities
<ol style="list-style-type: none"> <li>1. Faculty more than 90% with Ph.D &amp; strong research experience</li> <li>2. Strong UG program resulting in core job.</li> <li>3. separate building &amp; this will improve research collaboration b/w faculties</li> <li>4. Strong internship &amp; good placement</li> </ol>	<ol style="list-style-type: none"> <li>1. Good alumni database &amp; this should be utilized for lab &amp; research development</li> <li>2. Alumni support to be look for specific grant &amp; lab development</li> <li>3. To approach chemical industries for CSIR funding.</li> </ol>
Weaknesses	Challenges
<ol style="list-style-type: none"> <li>1. Technical staff strength to be improved</li> <li>2. M.Tech &amp; Ph.D program needs to be strengthened</li> <li>3. To improve sponsored research funding</li> <li>4. Computational facilities &amp; research infrastructure to be improved.</li> </ol>	<ol style="list-style-type: none"> <li>1. To attract good student for Ph.D &amp; M.Tech prog.</li> <li>2. Looking for option for getting sponsored, international travel for conferences (industry alumni to be asked for support).</li> <li>3. developing research infrastructure at dept. level</li> </ol>

General Remarks: *lectures on recent topics like sustainability, green synthesis to be included in curriculum. Sponsored research grant to be improve dept. outreach activities/ research infrastructure to be improved*

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

Signatures with date:

*Ashish Kumar*  
22/11/23 (HoD)

*[Signature]*  
(Dean of School)

*Raju Kumar Gupta*  
(Auditor)

*[Signature]*  
22/11/2023  
(Dean - CEIQA / IQAC Coordinator)

Place: HBTU, Kanpur





# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Chemical Engineering

### Comments for improvement

- few electives over recent topics e.g. sustainability, green synthesis etc. can be included in the curriculum.
- To improve teaching; best teacher award at dept. level can be initiated.
- sponsored research grant as well as publications per faculty could be improved
- Department outreach via social media could be improved.
- Research infrastructure at dept. level need to be improved.

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

\*\*\*\*\*

Ashish Kataria

*hw*

*Dr. Dixit*



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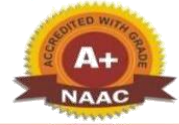
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100+ YEARS  
1921 - 2021



### Academic Audit (2022-23)-Department of Chemical Engineering

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

- Name of the Department: **Chemical Engrs., HBTU KANPUR**
- Name and Designation of Auditor: **Prof. RAJU KUMAR GUPTA, IIT KANPUR**
- Date of Audit: **22/11/2023**

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	117
		A.2. Industry – Institute Interaction	70	53
		A.3. Laboratory Development	50	37
B.	Research	--	70	52
C.	Outreach Activities	--	70	63
D.	Departmental Infrastructure and Human Resources	--	100	83
E.	Outcomes	--	60	44
Total Score			550	449

<b>Strengths</b> 1. Faculty more than 90% with Ph.D & strong research experience 2. Strong UG program resulting in core job. 3. Separate building & this will improve research collaboration b/w faculties 4. Strong internship & good placement	<b>Opportunities</b> 1. Good alumni database & this should be utilized for lab & research development 2. Alumni support to be look for specific grant & lab development 3. To approach chemical industries for CSIR funding.
<b>Weaknesses</b> 1. Technical staff strength to be improved 2. M.Tech & Ph.D program needs to be strengthened 3. To improve sponsored research funding 4. Computational facilities & research infrastructure to be improved.	<b>Challenges</b> 1. To attract good student for Ph.D & M.Tech prog. 2. Looking for option for getting sponsored, international travel for conferences (invite alumni to be asked for support. 3. Developing research infrastructure at dept. level
<b>General Remarks:</b> Electives on recent topics like sustainability, green synthesis to be included in curriculum. Sponsored research grant to be improved. Decision about the state of academic processes and their outcomes: Good / Medium / Poor (Please tick any one)	

Signatures with date:

Ashish Kumar  
22/11/23 (HoD)

Place: HBTU, Kanpur

(Dean of School)

(Auditor)

(Dean - CEIQA / IQAC Coordinator)



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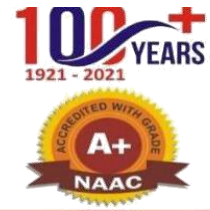
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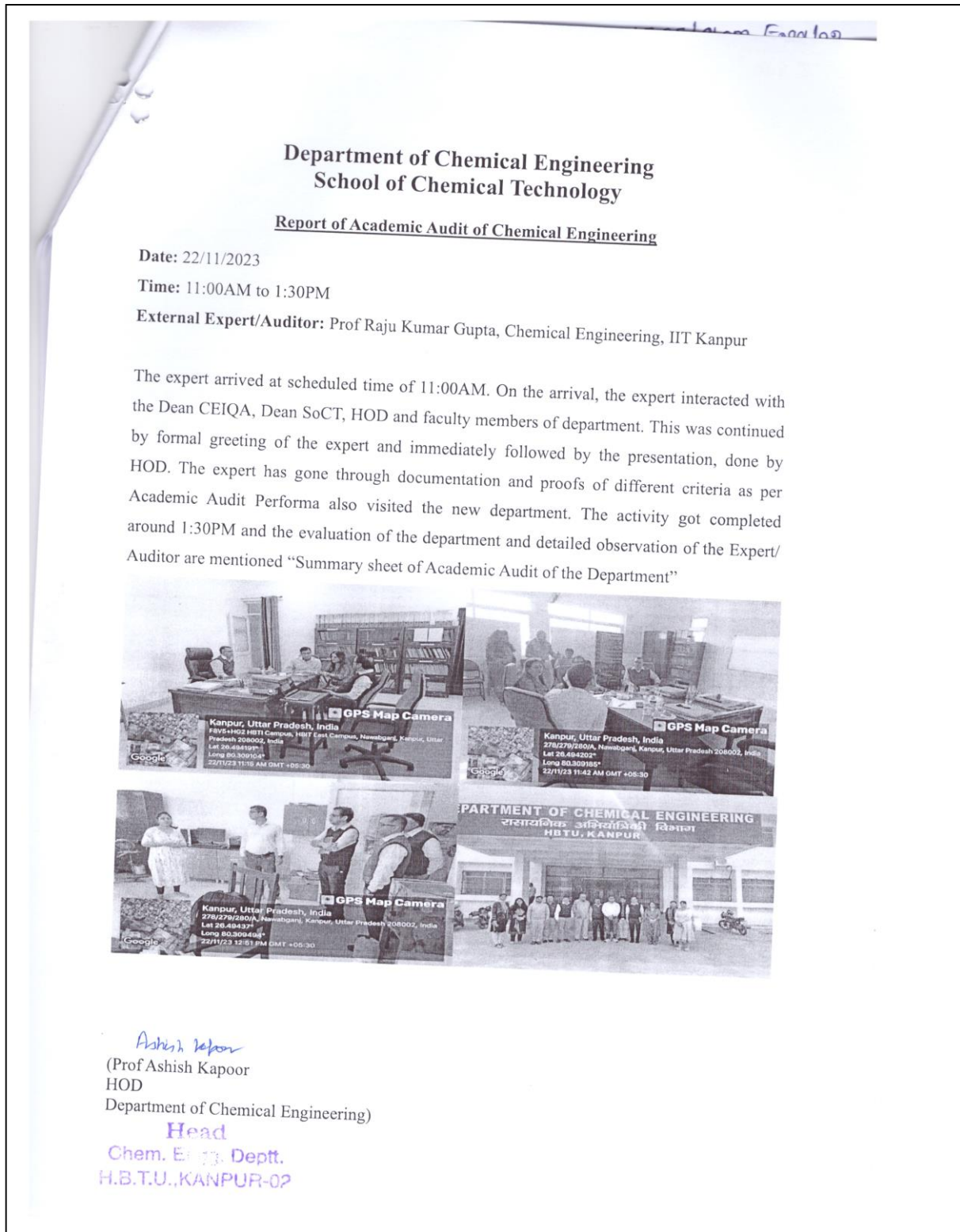
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**Academic Audit (2022-23)-Department of Chemical Engineering**



**Department of Chemical Engineering  
School of Chemical Technology**

**Report of Academic Audit of Chemical Engineering**

Date: 22/11/2023

Time: 11:00AM to 1:30PM

External Expert/Auditor: Prof Raju Kumar Gupta, Chemical Engineering, IIT Kanpur

The expert arrived at scheduled time of 11:00AM. On the arrival, the expert interacted with the Dean CEIQA, Dean SoCT, HOD and faculty members of department. This was continued by formal greeting of the expert and immediately followed by the presentation, done by HOD. The expert has gone through documentation and proofs of different criteria as per Academic Audit Performa also visited the new department. The activity got completed around 1:30PM and the evaluation of the department and detailed observation of the Expert/Auditor are mentioned "Summary sheet of Academic Audit of the Department"



Ashish Kapoor  
(Prof Ashish Kapoor  
HOD  
Department of Chemical Engineering)  
Head  
Chem. Engg. Deptt.  
H.B.T.U.,KANPUR-02



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100+ YEARS  
1921 - 2021



### Academic Audit (2022-23)-Department of Chemistry

#### 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

- Name of the Department: CHEMISTRY
- Name and Designation of Auditor: Prof. J. K. Beva, Prof. & Head, Chemistry, IIT Kanpur
- Date of Audit: 24/11/23

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130 120	92
		A.2. Industry - Institute Interaction	20 20	17
		A.3. Laboratory Development	50	40
B.	Research	--	20 60	46
C.	Outreach Activities	--	20 60	49
D.	Departmental Infrastructure and Human Resources	--	200 90	64
E.	Outcomes	--	60 30	21
<b>Total Score</b>			<b>550 420</b>	<b>312</b>

<b>Strengths</b> 1. Good Students 2. New M.Sc. programme 3. Three new faculty 4.	<b>Opportunities</b> 1. New academic programme 2. Support for administration 3. 4.
<b>Weaknesses</b> 1. Small department 2. Lack of funding for growth of the dept. 3. Lack of visibility of faculty in National level 4. Research ambience should be improved.	<b>Challenges</b> 1. To attract student/faculty 2. To create research facility. 3. 4.

General Remarks: \* Minimum three years contract for guest faculty.  
 \* Revised the pay for guest faculty as per UGC norms.  
 \* Ph-D Scholarships like as per UGC norms.

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

Signatures with date:

(HoD) 24/11/23

(Dean of School) 24/11/23

(Auditor)

(Dean - CEIQA / IQAC Coordinator) 24/11/2023

Place: HBTU, Kanpur  
 Prof. C. L. Gehlot  
 Head  
 Department of Chemistry  
 HBTU, Kanpur-208002

Dr. C.L. Gehlot  
 Dean  
 School of Basic and  
 Applied Sciences  
 HBTU, Kanpur-208002



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100+ YEARS  
1921 - 2021



**Department of Computer Science and Engineering-Academic Audit (2022-23)**

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: *Computer Science & Engg.*

2. Date of Audit: *25/11/2023*

**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)	8
6	Number of technical staff in labs	7
7	E-Assisted Learning i. Availability of Library Resources (books, book bank, journals and Major	

*[Signature]*

*[Signature]*  
25/11/2023

*[Signature]*  
25/11/23



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**Department of Computer Science and Engineering-Academic Audit (2022-23)**

	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)	9
8	Technical Societies for Students	
	i. Departmental Society	7
	ii. Student Chapter(s) of Professional Societies	
9	Educational Tour/Training/Industrial visits/Internship opportunities	10
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	10
11	Faculty Mentoring/Faculty Advisor for Students	9
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.)	9
	<b>Total Score (out of 130)</b>	<b>119</b>

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	10
3	Organizing expert lectures from industry.	10
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	10
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
	<b>Total Score (out of 70)</b>	<b>66</b>

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	8
2.	Development of infrastructure in existing labs.	9
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.	10
	<b>Total Score (out of 50)</b>	<b>47</b>

*[Signature]*

*[Signature]* 25/11/2023

*[Signature]* 25/11/23



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100+ YEARS  
1921 - 2021



**Department of Computer Science and Engineering-Academic Audit (2022-23)**

**B. Research**

B.	Research	Score
1.	Research Ambience in the Department (Phd-41) (MT-89)	8
2.	Quality of Publications (1 yr. ~ 30)	7
3.	Relevance of Research to society	7
4.	Student Exposure to Attending Quality Conferences/Symposia	9
5.	Research Intensity of Faculty Members	8
6.	Inter Departmental Research Collaborations	8
7.	Industry/externally funded sponsored research	7
	<b>Total Score (out of 70)</b>	<b>54</b>

**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
	<b>Total Score (out of 70)</b>	<b>63</b>

*P Dixit*

*25/11/2023*

*25/11/23*



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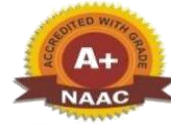
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**Department of Computer Science and Engineering-Academic Audit (2022-23)**

**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	10
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	10
6	Departmental Library	9
7	Computing Facilities and Software	9
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-fi etc.)	9
9	Faculty- Student Ratio (1:23)	8
10	Support Staff (Technical/Administrative) Adequacy	7
	<b>Total Score (out of 100)</b>	<b>90</b>

**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
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	7
4	Recognitions; Awards(National/International) to Faculty/Students	6
5	Consultancy and Externally Funded Projects	7
6	No. of B. Tech. / M. Tech. / Ph.D. graduates to have taken up career in Academics	8
	<b>Total Score (out of 60)</b>	<b>46</b>

Grand total (out of 550): 485

4

*P. Dixit*

*25/11/2023*

*25/11/23*





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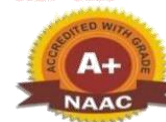
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### Department of Computer Science and Engineering-Academic Audit (2022-23)

#### 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

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2. Name and Designation of Auditor:
3. Date of Audit:

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C.	Outreach Activities	--	70	63
D.	Departmental Infrastructure and Human Resources	--	100	90
E.	Outcomes	--	60	46
Total Score			550	485

88.18%

<b>Strengths</b> 1. Faculty strength has increased by two. 2. The labs & classes are e-assisted. 3. The placement of students is excellent. 4. There are external lectures & workshop exposure. 5. There is contact with the industry experts.	<b>Opportunities</b> 1. Hire a social media content manager who can contact and organize the HBTU Alumni online. 2. Start an alumni campaign to create an Alumni Grant/Foundation to build new infrastructure.
<b>Weaknesses</b> 1. The faculty should get more research & consultancy projects. 2. The faculty should mentor more research students and more startup possibilities. 3. The regular & contractual faculty members should be increased by 40% and similarly the student strength.	<b>Challenges</b> 1. More support from the State authorities to get more employees/faculty/students and space. 2. A computer center for the whole institute is necessary.

General Remarks:

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

Signatures with date:

(HoD)

(Dean of School)

(Auditor)

(Dean - CEIQA / IQAC Coordinator)

Place: HBTU, Kanpur



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**Department of Computer Science and Engineering-Academic Audit (2022-23)**

SWOC Analyses

- a) Strength: Faculty strength has increased by two. The labs and classes are e-assisted. The placement of students is excellent. There are external lectures + workshop exposure. There is contact with the industry Experts.
- b) Weakness:  
The faculty should get — more research projects,  
— more consultancy projects.  
The faculty should mentor — more research students,  
— more startup possibilities.  
The regular + contractual faculty number should be increased by 40% & similarly the student strength.
- c) Opportunities:  
— same as above —
- Hire a social media content manager who can contact, and organize, the HBTU Alumni online.
  - Start an alumni campaign to create an Alumni Grants/Foundation to build new infrastructure.
- d) Challenges:  
— More support from the State authorities to get more employees / faculty / students, and space,  
— A Computer Center for the whole institute is necessary.

5



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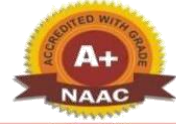
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100+ YEARS  
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**Department of Computer Science and Engineering-Academic Audit (2022-23)**

Comments for improvement	
<i>same as above</i>	
Signature of the Auditor	<i>M. Saxena</i> <i>25 Nov '23</i>
Name, Designation and Affiliation	<i>Prof. Nitin Saxena</i> <i>CSE Dept. IIT Kanpur</i>

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100+ YEARS  
1921 - 2021



**Department of Computer Science and Engineering-Academic Audit (2022-23)**

Comments for improvement	
Same as above —	
Signature of the Auditor	 25 Nov '23
Name, Designation and Affiliation	Prof. Nitin Saxena CSE Dept. IIT Kanpur

\*\*\*\*\*

6

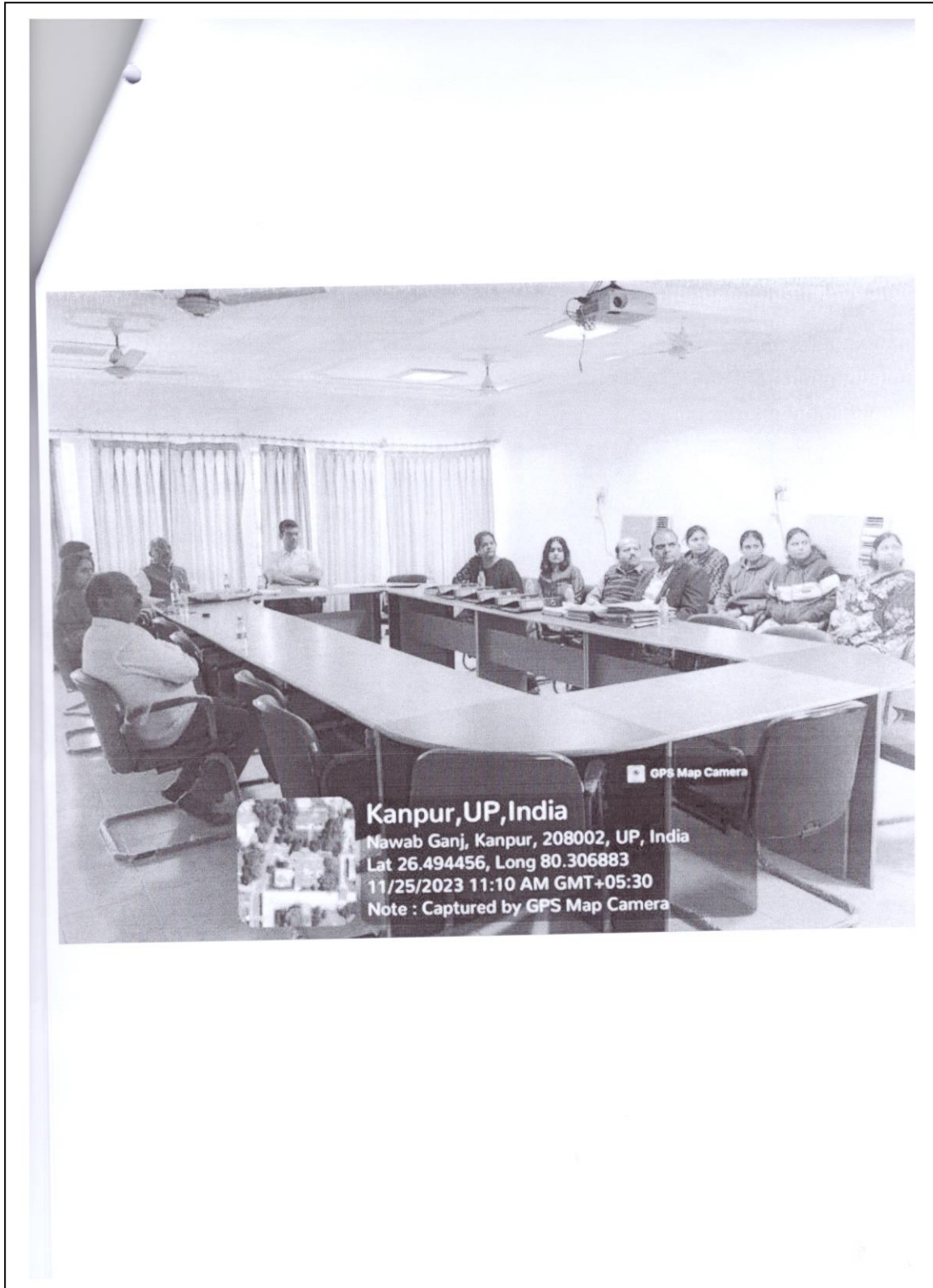


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**HARCOURT BUTLER TECHNICAL UNIVERSITY**  
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**Department of Computer Science and Engineering-Academic Audit (2022-23)**



Kanpur, UP, India  
Nawab Ganj, Kanpur, 208002, UP, India  
Lat 26.494456, Long 80.306883  
11/25/2023 11:10 AM GMT+05:30  
Note : Captured by GPS Map Camera



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100+ YEARS  
1921 - 2021



### Department of Computer Science and Engineering-Academic Audit (2022-23)

#### 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	90
		A.2. Industry – Institute Interaction	70	48
		A.3. Laboratory Development	50	38
B.	Research	--	70	60
C.	Outreach Activities	--	70	50
D.	Departmental Infrastructure and Human Resources	--	100	90
E.	Outcomes	--	60	48
<b>Total Score</b>			550	424

<b>Strengths</b> 1. Experienced and Qualified Faculty 2. Self sustained profitable Department 3. Legacy of STEP-HBTI 4. Socially Involved (through Outreach Activities) 5. Lush Green Campus	<b>Opportunities</b> 1.Opportunity of Expansion (New Specialized Courses, Executive Programme.) 2.Multidisciplinary Courses (Integrated with Engineering & Technology) 3.Consultancy and Projects 4.Interdepartmental Research (Management & Technology) 5.Entrepreneurship Programmes
<b>Weaknesses</b> 1. IT Infrastructure 2. Lack of Administrative Staff 3. Rewarding Publication Policy 4. <del>Promotion Policy (Being Self Financed Department)</del> 5. <del>Centralized Decision Making</del>	<b>Challenges</b> 1.Private and Foreign Universities with Huge Infrastructure and Funds 2.Online Courses 3.Migration of Students from City 4.Increased Number of IITs & IIMs 5. Getting Poor quality Input

Co-PO mapping and attainment  
 Integrity based Curriculum  
 Monitoring records

General Remarks:  
 Since this is the first year, proper recording of data needs to be done

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

Signatures with date:

*(Signature)* on leave  
 (HoD) (Dean of School)

Place: HBTU, Kanpur

*(Signature)*  
 (Auditor) (Dean - CEIQA / IQAC Coordinator) / *(Signature)*  
 09/11/2023 09/11/2023  
 Acade Audit Coord. dt



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100+ YEARS  
1921 - 2021



**Academic Audit (2022-23)-Department of Electrical Engineering**

**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: **EED, HBTU Kanpur**
2. Date of Audit: **06-11-2023**

**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	08
7	E-Assisted Learning	09
	i. Availability of Library Resources (books, book bank, journals and Major	

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06.11.2023

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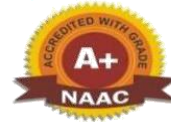
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electrical Engineering

	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)	
8	Technical Societies for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	09
9	Educational Tour/Training/Industrial visits/Internship opportunities	10
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	09
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.)	09
	<b>Total Score (out of 130)</b>	<b>123</b>

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	09
3	Organizing expert lectures from industry.	08
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	08
5	Participation of students in industrial tours and internship programs.	09
6	Interaction of faculty with industries in terms of visits, lab development.	08
7	Industrial research projects	06
	<b>Total Score (out of 70)</b>	<b>58</b>

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	09
2.	Development of infrastructure in existing labs.	09
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.	09
	<b>Total Score (out of 50)</b>	<b>47</b>

2

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08.11.2023

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# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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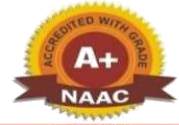
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electrical Engineering

### B. Research

B.	Research	Score
1.	Research Ambience in the Department	07
2.	Quality of Publications	08
3.	Relevance of Research to society	08
4.	Student Exposure to Attending Quality Conferences/Symposia	07
5.	Research Intensity of Faculty Members	08
6.	Inter Departmental Research Collaborations	08
7.	Industry/externally funded sponsored research	08
	<b>Total Score (out of 70)</b>	<b>54</b>

### 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.	08
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoS etc.	08
5.	Contribution to Professional Societies.	09
6.	Editorial responsibilities / reviews of SCI Journals.	08
7.	Organization of Seminar, Workshops, Symposia, FDP.	09
	<b>Total Score (out of 70)</b>	<b>60</b>

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06.11.2023

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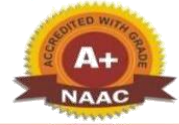
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electrical Engineering

### 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	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	10
7	Computing Facilities and Software	09
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	08
Total Score (out of 100)		92

### 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)	08
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	08
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	07
Total Score (out of 60)		47

Grand total (out of 550):

4

481

*[Signature]*  
06.11.2023

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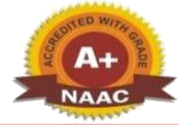
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electrical Engineering

SWOC Analyses

a) Strength:

1. Teaching Program is good
2. UG Labs are well maintained
3. Faculty members are qualified
4. Good Placement

b) Weakness:

1. Research output may be improved
2. Less Faculty student Ratio
3. Sponsored Projects very Low
4. Less number of Technical staff

c) Opportunities:

1. Support from Government
2. Near to IIT Kanpur
3. Few young Faculty members have to
4. IEEE participation may increase

d) Challenges:

1. Collaboration with industry
2. High quality M.Tech. and Ph.D. Stud
3. Sponsored Project Funding

5

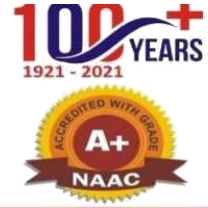
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**Academic Audit (2022-23)-Department of Electrical Engineering**

Comments for improvement	
Overall Performance of the Department is impressive.	
- No. of M.Tech and Ph.D. students needs to be increased	
- Young Faculty should be encouraged to submit Research Proposals.	
Signature of the Auditor	
Name, Designation and Affiliation	PROF. M. J. AKHTAR BSED, IIT KANPUR

08.11.2022

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### Academic Audit (2022-23)-Department of Electrical Engineering

#### 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: *DEPT. OF ELECTRICAL ENGINEERING, HBTU, KANPUR*
2. Name and Designation of Auditor: *PROF. M. V. AKHTAR*
3. Date of Audit: *06.11.2022*

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	<i>123</i>
		A.2. Industry – Institute Interaction	70	<i>58</i>
		A.3. Laboratory Development	50	<i>47</i>
B.	Research	--	70	<i>54</i>
C.	Outreach Activities	--	70	<i>60</i>
D.	Departmental Infrastructure and Human Resources	--	100	<i>92</i>
E.	Outcomes	--	60	<i>47</i>
<b>Total Score</b>			550	<i>481</i>

<b>Strengths</b> <ol style="list-style-type: none"> <li>1. <i>Teaching Program is good</i></li> <li>2. <i>UG Labs are well maintain.</i></li> <li>3. <i>Faculty members are qualified.</i></li> <li>4. <i>Good Placements</i></li> </ol>	<b>Opportunities</b> <ol style="list-style-type: none"> <li>1. <i>support from Government</i></li> <li>2. <i>Near to IIT Kanpur</i></li> <li>3. <i>Few young faculty have joined</i></li> <li>4. <i>IEEE Participation may increase</i></li> </ol>
<b>Weaknesses</b> <ol style="list-style-type: none"> <li>1. <i>Research Output may be improved</i></li> <li>2. <i>Less Faculty-Student Ratio</i></li> <li>3. <i>Sponsored Projects - Very low</i></li> <li>4. <i>Less number of Technical Staff</i></li> </ol>	<b>Challenges</b> <ol style="list-style-type: none"> <li>1. <i>Collaboration with Industry</i></li> <li>2. <i>High Quality MTech &amp; PhD Students</i></li> <li>3. <i>Sponsored Project funding</i></li> <li>4. <i>_____</i></li> </ol>

General Remarks: *Overall Performance of the Department is impressive.*

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

Signatures with date:

*Jalant*  
*6/11/2023*

*[Signature]*  
*06/11/23*  
(HoD)

*[Signature]*  
*06/11/23*  
(Dean of School for DS&E)

*Jalant*  
(Auditor)

*[Signature]*  
*06.11.2022*  
(Dean - CEIQA / IQAC Coordinator)

*Academic*  
*Audit*  
*Coordinator*

Place: HBTU, Kanpur



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1921 - 2021



## Academic Audit (2022-23)-Department of Electronics Engineering

HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR

Dean (Continuing Education and Internal Quality Assurance)

Internal Quality Assurance Cell (IQAC)

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### PERFORMA OF ACADEMIC AUDIT OF DEPARTMENTS

1. Name of the Department: **ELECTRONICS ENGINEERING**

2. Date of Audit: **06-11-2023**

**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)	08
6	Number of technical staff in labs	09
7	E-Assisted Learning	09
	i. Availability of Library Resources (books, book bank, journals and Major	



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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electronics Engineering

	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)	
8	Technical Societies for Students i. Departmental Society ii. Student Chapter(s) of Professional Societies	
9	Educational Tour/Training/Industrial visits/Internship opportunities	08
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	10
11	Faculty Mentoring/Faculty Advisor for Students	10
12	Number of teaching days in a semester	09
13	Formal mechanism to obtain feedback from students and stakeholders on Curriculum (Such as Student feedback for teaching & Course evaluation etc.)	10
		09
	<b>Total Score (out of 130)</b>	<b>122</b>

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	09
3	Organizing expert lectures from industry.	08
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	09
5	Participation of students in industrial tours and internship programs.	09
6	Interaction of faculty with industries in terms of visits, lab development.	08
7	Industrial research projects	06
	<b>Total Score (out of 70)</b>	<b>59</b>

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	09
2.	Development of infrastructure in existing labs.	09
3.	Up Gradation of existing equipment's including replacement.	09
4.	Development of Laboratory manuals of experiments in existing labs.	10
5.	Development of new experiments in existing labs.	09
	<b>Total Score (out of 50)</b>	<b>46</b>

Jain



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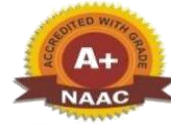
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electronics Engineering

### B. Research

B.	Research	Score
1.	Research Ambience in the Department	07
2.	Quality of Publications	06
3.	Relevance of Research to society	07
4.	Student Exposure to Attending Quality Conferences/Symposia	07
5.	Research Intensity of Faculty Members	07
6.	Inter Departmental Research Collaborations	06
7.	Industry/externally funded sponsored research	06
	<b>Total Score (out of 70)</b>	<b>46</b>

### C. Outreach activities

C.	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	08
2.	Delivering of talk / lecture in HBTU apart from regular courses.	07
3.	Expert lectures in other institutes.	07
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoS etc.	08
5.	Contribution to Professional Societies.	07
6.	Editorial responsibilities / reviews of SCI Journals.	07
7.	Organization of Seminar, Workshops, Symposia, FDP.	08
	<b>Total Score (out of 70)</b>	<b>52</b>

*Jan*





# हरकोटे बटलर प्राविधिक विश्वविद्यालय

नवाबगंज, कानपुर - 208002, उ.प्र., भारत

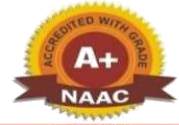
**HARCOURT BUTLER TECHNICAL UNIVERSITY**

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Phone : +91-0512-2534001-5, 2533812, website : <http://www.hbtu.ac.in>, Email : [vc@hbtu.ac.in](mailto:vc@hbtu.ac.in)

**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electronics Engineering

### 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	10
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	09
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-fi etc.)	10
9	Faculty- Student Ratio	08
10	Support Staff (Technical/Administrative) Adequacy	08
	<b>Total Score (out of 100)</b>	<b>92</b>

### 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)	07
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	06
4	Recognitions; Awards(National/International) to Faculty/Students	07
5	Consultancy and Externally Funded Projects	06
6	No. of B. Tech. / M. Tech. / Ph.D. graduates to have taken up career in Academics	08
	<b>Total Score (out of 60)</b>	<b>43</b>

Grand total (out of 550):



Academic Audit (2022-23)-Department of Electronics Engineering

SWOC Analyses

a) Strength:

- Teaching Quality and Relevant Infrastructure is adequate.
- UG Student Program is well established.
- Placement Record of Students is good.
- Facilities to Student and Faculty member is good in terms of infrastructure.

b) Weakness:

- The overall Research Profile of the Department is not very good.
- Number of Students in M.Tech and PhD programs should be improved.
- Project (Sponsored/consultancy) is not up to mark.

c) Opportunities:

- The new faculty members in the Department should be encouraged to write Project proposals and improve research profile.
- Industry interaction should improve.
- Professional activities like IEEE membership of faculty/Students should be encouraged.

d) Challenges:

- The biggest challenge appears to be that of the reduced faculty strength over years as the number of Students has increased.
- The overall research output can be increased by only increasing number of PhD/M.Tech Studies.

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हरकोटे बटलर प्राविधिक विश्वविद्यालय

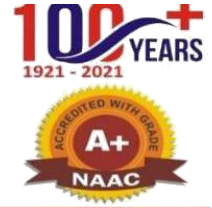
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**Academic Audit (2022-23)-Department of Electronics Engineering**

Comments for improvement	
<ul style="list-style-type: none"><li>- Improve Research output by Publications in SCI Journals.</li><li>- Increase the strength of M.Tech/PhD Students in the Department by giving some benefits/allowance.</li><li>- Encourage young faculty members to apply for Sponsored Projects/ Industry collaboration.</li></ul>	
Signature of the Auditor	
Name, Designation and Affiliation	Dr. M. Jaleel Akhtar Chair Professor, Department of EE, IIT Kanpur.

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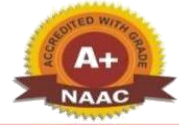
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Electronics Engineering

**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: *Electronics Engg.*
2. Name and Designation of Auditor: *Prof. M.J. Akhtar, EED, IIT Kanpur*
3. Date of Audit: *06/11/2023*

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	122
		A.2. Industry – Institute Interaction	70	59
		A.3. Laboratory Development	50	46
B.	Research	--	70	46
C.	Outreach Activities	--	70	52
D.	Departmental Infrastructure and Human Resources	--	100	92
E.	Outcomes	--	60	43
<b>Total Score</b>			550	460

<b>Strengths</b> 1. Teaching quality & Infrastructure 2. UG Program 3. Placement of students 4. Facilities to students & Faculty members	<b>Opportunities</b> 1. Project proposal by new faculties 2. Industry Interaction 3. Professional activities like IEEE 4. -
<b>Weaknesses</b> 1. Research Profile 2. Admission to M.Tech. & Ph.D. 3. Sponsored Project/consultancy 4. -	<b>Challenges</b> 1. Student Faculty Ratio 2. Admission to M.Tech. & Ph.D. 3. - 4. -

General Remarks: *The overall performance of the department is good.*

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

Signatures with date:

*[Signature]*  
06/11/2023  
(HoD)

*[Signature]*  
06/11/2023  
(Dean of School)

*[Signature]*  
(Auditor)

*[Signature]*  
06.11.2023  
(Dean - CEIQA / IQAC Coordinator)

Place: HBTU, Kanpur

*[Signature]*  
Academic  
Audit  
Coordinator



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100+ YEARS  
1921 - 2021



### Academic Audit (2022-23)-Department of Humanities and Social Sciences (HSS)

**HARCOURT BUTLER TECHNICAL UNIVERSITY, KANPUR**  
 Dean (Continuing Education and Internal Quality Assurance)  
 Internal Quality Assurance Cell (IQAC)

Ref No: 260/HSS/2023  
 Dt: 02/11/23

Summary Sheet of Academic Audit of the Department

- Name of the Department: **HUMANITIES & SOCIAL SCIENCES (HSS)**
- Name and Designation of Auditor:
- Date of Audit:

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	110
		A.2. Industry – Institute Interaction	70	50
		A.3. Laboratory Development	50	44
B.	Research	--	70	50
C.	Outreach Activities	--	70	60
D.	Departmental Infrastructure and Human Resources	--	100	80
E.	Outcomes	--	60	40
<b>Total Score</b>			550	434





Strengths	Opportunities
1. Open electives	1. Collaboration with industry
2. Language lab	2.
3.	3.
4.	4.

Weaknesses	Challenges
1. Preparation of individual course file	1. Faculty strength
2. Course attainment file	2.
3. Remedial classes record	3.
4.	4.

**General Remarks:**

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

Signatures with date:

 09/11/23 (HoD)  
 R. B. Singh 09/11/2023 (Dean of School)  
 (Auditor)  
 P. Dixit 09/11/2023 (Dean - CEIQA / IQAC Coordinator)

Place: HBTU, Kanpur



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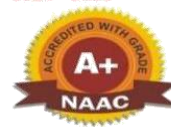
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100+ YEARS  
1921 - 2021



**Academic Audit (2022-23)-Department of Management studies**

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	90
		A.2. Industry – Institute Interaction	70	48
		A.3. Laboratory Development	50	38
B.	Research	--	70	60
C.	Outreach Activities	--	70	50
D.	Departmental Infrastructure and Human Resources	--	100	90
E.	Outcomes	--	60	48
<b>Total Score</b>			550	424

<p><b>Strengths</b></p> <ol style="list-style-type: none"> <li>1. Experienced and Qualified Faculty</li> <li>2. Self sustained profitable Department</li> <li>3. Legacy of STEP-HBTI</li> <li>4. Socially Involved (through Outreach Activities)</li> <li>5. Lush Green Campus</li> </ol>	<p><b>Opportunities</b></p> <ol style="list-style-type: none"> <li>1. Opportunity of Expansion (New Specialized Courses, Executive Programme.)</li> <li>2. Multidisciplinary Courses (Integrated with Engineering &amp; Technology)</li> <li>3. Consultancy and Projects</li> <li>4. Interdepartmental Research (Management &amp; Technology)</li> <li>5. Entrepreneurship Programmes</li> </ol>
<p><b>Weaknesses</b></p> <ol style="list-style-type: none"> <li>1. IT Infrastructure</li> <li>2. Lack of Administrative Staff</li> <li>3. Rewarding Publication Policy</li> <li>4. Promotion Policy (Being Self Financed Department)</li> <li>5. Centralized Decision Making</li> </ol>	<p><b>Challenges</b></p> <ol style="list-style-type: none"> <li>1. Private and Foreign Universities with Huge Infrastructure and Funds</li> <li>2. Online Courses</li> <li>3. Migration of Students from City</li> <li>4. Increased Number of IITs &amp; IIMs</li> <li>5. Getting Poor quality Input</li> </ol>

CO-PO mapping and attainment  
Integrity based curriculum  
Mentoring records

General Remarks:

Since this is the first year, proper recording of data needs to be done

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

Signatures with date:

*[Signature]* on leave  
(HoD) (Dean of School)

*[Signature]*  
(Auditor)

(Dean - CEIQA / IQAC Coordinator) / *[Signature]*

Place: HBTU, Kanpur

*[Signature]* 09/11/2023  
*[Signature]* 09/11/2023  
Academi  
Audit  
Coord.  
Date



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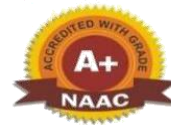
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23) - Department of Mechanical Engineering

### 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	127
		A.2. Industry – Institute Interaction	70	62
		A.3. Laboratory Development	50	44
B.	Research	--	70	57
C.	Outreach Activities	--	70	56
D.	Departmental Infrastructure and Human Resources	--	100	69
E.	Outcomes	--	60	51
<b>Total Score</b>			550	466

Strengths	Opportunities
<ol style="list-style-type: none"> <li>1. Relatively Young dept.</li> <li>2. Faculty mix is appropriate</li> <li>3. Good infrastructure</li> <li>4. Proximity to good institutes / industries</li> </ol>	<ol style="list-style-type: none"> <li>1. Dept. should sync with entrepreneurial ecosystem in the country</li> <li>2. Tab the scope of industrial projects</li> <li>3. Explore programs like e- modules etc. for attracting industries</li> <li>4.</li> </ol>
Weaknesses	Challenges University
<ol style="list-style-type: none"> <li>1. OFR should be reduced further</li> <li>2. No. of Technical/administrative staff should be increased</li> <li>3. Increase impact of research</li> <li>4. No initiation grant for new faculty</li> </ol>	<ol style="list-style-type: none"> <li>1. Needs a central computational facility</li> <li>2. Capture of student feedback based on conception</li> <li>3. Progs. like M.Tech (full time) &amp; MBR, Dual degree etc to be incorporated</li> <li>4.</li> </ol>

#### General Remarks:

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

Signatures with date:

(HOD) 21/11/2023

(Dean of School) 21/11/2023

(Auditor)

(Dean - CEIQA / IQAC Coordinator) 21/11/2023

Place: HBTU, Kanpur



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100+ YEARS  
1921 - 2021



## Academic Audit (2022-23) - Department of Mechanical Engineering

### 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:

2. Date of Audit:

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)	9
3	Formal Academic Load on Students (Teaching, Laboratory/Practical, Projects)	9
4	Evaluation Process (Continuing Evaluation, End-Term Evaluation, transparency, redressal mechanism for students)	9
5	Number of faculty members (Sanctioned, Filled, Vacant, On contract against vacant)	8
6	Number of technical staff in labs	7
7	E-Assisted Learning	10
	i. Availability of Library Resources (books, book bank, journals and Major	





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**Academic Audit (2022-23) - Department of Mechanical Engineering**

	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)	9
8	Technical Societies for Students	
	i. Departmental Society	9
	ii. Student Chapter(s) of Professional Societies	
9	Educational Tour/Training/Industrial visits/Internship opportunities	10
10	Effectiveness of Assisted Learning, Tutorial System, Seminars for B. Tech Students	10
11	Faculty Mentoring/Faculty Advisor for Students	10
12	Number of teaching days in a semester	9
13	Formal mechanism to obtain feedback from students and stakeholders on Curriculum (Such as Student feedback for teaching & Course evaluation etc.)	8
	<b>Total Score (out of 130)</b>	<b>127</b>

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)	9
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
	<b>Total Score (out of 70)</b>	<b>62</b>

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	9
2.	Development of infrastructure in existing labs.	8
3.	Up Gradation of existing equipment's including replacement.	8
4.	Development of Laboratory manuals of experiments in existing labs.	10
5.	Development of new experiments in existing labs.	9
	<b>Total Score (out of 50)</b>	<b>44</b>



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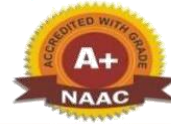
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100+ YEARS  
1921 - 2021



**Academic Audit (2022-23) - Department of Mechanical Engineering**

**B. Research**

B.	Research	Score
1.	Research Ambience in the Department	9
2.	Quality of Publications	7
3.	Relevance of Research to society	8
4.	Student Exposure to Attending Quality Conferences/Symposia	9
5.	Research Intensity of Faculty Members	8
6.	Inter Departmental Research Collaborations	8
7.	Industry/externally funded sponsored research	8
	<b>Total Score (out of 70)</b>	<b>57</b>

**C. Outreach activities**

C.	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	10
2.	Delivering of talk / lecture in HBTU apart from regular courses.	8
3.	Expert lectures in other institutes.	7
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoS etc.	9
5.	Contribution to Professional Societies.	8
6.	Editorial responsibilities / reviews of SCI Journals.	7
7.	Organization of Seminar, Workshops, Symposia, FDP.	7
	<b>Total Score (out of 70)</b>	<b>56</b>



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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23) - Department of Mechanical Engineering

### 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	9
3	Availability of Conference/Seminar Room, etc	10
4	Availability of adequate Seating Space/Offices and furnishings for Faculty and Research Students	10
5	Availability of Internet Services in Research Labs and Class Rooms	10
6	Departmental Library	10
7	Computing Facilities and Software (Should be centralized)	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	7
	<b>Total Score (out of 100)</b>	<b>69</b>

### 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
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	8
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	9
	<b>Total Score (out of 60)</b>	<b>51</b>

**Grand total (out of 550):**



Academic Audit (2022-23) - Department of Mechanical Engineering

SWOC Analyses

- a) Strength:
- (a) Average age of the faculty members is low. Department is quite young.
  - (b) Faculty mix is appropriate & well represents the broad domain of Mechanical Engg.
  - (c) Good infrastructure for starting new research domains. Good location & connectivity to city.
  - (d) Proximity to good institutes like IITK and industries like HAL, ALICO.
- b) Weakness:
- (a) SFR should be reduced further. It is a must that faculty strength be further increased to start programs within ME like full time M.Tech program & also set up new research directions.
  - (b) Technical staff allocation should be increased to run ME labs seamlessly.
  - (c) New faculty should be provided startup grant for initiating research activities in new areas.
- c) Opportunities:
- (a) Impact of research should be strengthened.
  - (a) Department can sync with the entrepreneurial ecosystem setup in the nation.
  - (b) Lot of scope of industrial projects. There may be a communication cell who can provide consultancy project information to faculty.
  - (c) Develop programs like e-masters for industry.
- d) Challenges:
- (a) Need to develop a central facility for computational activities.
  - (b) Need to capture student feedback accurately through filing of course plan by faculty at the beginning of the semester.
  - (c) One may introduce programs like MS by research, dual degree programs etc.



हरकोटे बटलर प्राविधिक विश्वविद्यालय

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100+ YEARS  
1921 - 2021



**Academic Audit (2022-23) - Department of Mechanical Engineering**

Comments for improvement

- Provide startup/initiation grant to newly joining faculty members
- Increase staff (Both Technical/administrative)
- Try to start M.Tech full time, MS by research etc.
- Try to incorporate central computational facility at university level

Signature of the Auditor

Name, Designation and Affiliation

SHANTANU BHATTACHARYA  
PROFESSOR, IIT-KANPUR

\*\*\*\*\*  
A. Dixit

21/11/2023



हरकोटे बटलर प्राविधिक विश्वविद्यालय

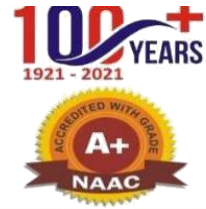
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## Academic Audit (2022-23)-Department of Oil Technology

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:

2. Date of Audit:

**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	8
2	Curriculum (Development, Structure, Course Syllabi, Flexibility)	9
3	Formal Academic Load on Students (Teaching, Laboratory/Practical, Projects)	9
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
6	Number of technical staff in labs	6
7	E-Assisted Learning	10
	i. Availability of Library Resources (books, book bank, journals and Major	



# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Oil Technology

	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)	10
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	9
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.)	9
	<b>Total Score (out of 130)</b>	<b>117</b>

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	10
3	Organizing expert lectures from industry.	10
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	9
5	Participation of students in industrial tours and internship programs.	9
6	Interaction of faculty with industries in terms of visits, lab development.	9
7	Industrial research projects	9
	<b>Total Score (out of 70)</b>	<b>66</b>

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



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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Oil Technology

### B. Research

B.	Research	Score
1.	Research Ambience in the Department	9
2.	Quality of Publications	8
3.	Relevance of Research to society	9
4.	Student Exposure to Attending Quality Conferences/Symposia	9
5.	Research Intensity of Faculty Members	8
6.	Inter Departmental Research Collaborations	8
7.	Industry/externally funded sponsored research	8
	<b>Total Score (out of 70)</b>	<b>59</b>

### C. Outreach activities

C.	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	8
2.	Delivering of talk / lecture in HBTU apart from regular courses.	9
3.	Expert lectures in other institutes.	10
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.	8
7.	Organization of Seminar, Workshops, Symposia, FDP.	10
	<b>Total Score (out of 70)</b>	<b>63</b>





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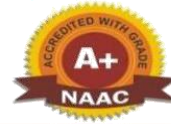
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Oil Technology

### 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	10
4	Availability of adequate Seating Space/Offices and furnishings for Faculty and Research Students	10
5	Availability of Internet Services in Research Labs and Class Rooms	9
6	Departmental Library	10
7	Computing Facilities and Software	9
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-fi etc.)	9
9	Faculty- Student Ratio	7
10	Support Staff (Technical/Administrative) Adequacy	6
	<b>Total Score (out of 100)</b>	<b>90</b>

### 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
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	8
4	Recognitions; Awards(National/International) to Faculty/Students	9
5	Consultancy and Externally Funded Projects	9
6	No. of B. Tech. / M. Tech. / Ph.D. graduates to have taken up career in Academics	10
	<b>Total Score (out of 60)</b>	<b>54</b>

Grand total (out of 550):

4



Academic Audit (2022-23)-Department of Oil Technology

SWOC Analyses

a) Strength:

- \* Strong alumni base
- \* Strong industry-university base
- \* Almost 100% Placement
- \* Active participation of faculty members to scientific organizations like BIS.

b) Weakness:

- \* Lack of faculty and technical staff
- \* Excess administrative load on faculty

c) Opportunities:

- \* Strong alumni network.
- \* Strong potential entrepreneurship
- \* Strong affiliation with associations of international repute.

d) Challenges:

- \* Recruitment of faculty members at senior level.
- \* Infrastructure facilities to meet the need of increased intake of students.

5

RS



# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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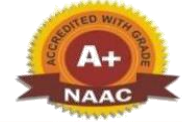
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Oil Technology

<b>Comments for improvement</b>	
<p>* Need improvement in the <sup>number of</sup> faculty members and technical staff.</p> <p>* Funding should be increased in the form of scholarship to attract MTech/ PhD students.</p>	
Signature of the Auditor	
Name, Designation and Affiliation	Dhananjay Singh Professor Deptt of Chemical Engrg IET Lucknow, Lucknow-21

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100+ YEARS  
1921 - 2021



**Academic Audit (2022-23)-Department of Paint Technology**

Dept. of Paint Technology

Ref. No. 256/PT/2023

Date: 29/11/2023

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:

Paint Technology

2. Date of Audit:

08.11.2023

**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)	5
6	Number of technical staff in labs	5
7	E-Assisted Learning	
i.	Availability of Library Resources (books, book bank, journals and Major	

Amal K



# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Paint Technology

	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)	10
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	10
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
	<b>Total Score (out of 130)</b>	<b>120</b>

A. 2	Industry - Institute Interaction	Score
1	Industrial Training as a part of curriculum	10
2	Involvement of industry expert in designing curriculum.	10
3	Organizing expert lectures from industry.	10
4	Involvement of industry expert in UG/PG projects (as Joint Supervision)	10
5	Participation of students in industrial tours and internship programs.	10
6	Interaction of faculty with industries in terms of visits, lab development.	10
7	Industrial research projects	0
	<b>Total Score (out of 70)</b>	<b>60</b>

A. 3	Laboratory Development	Score
1.	New labs developed in last three year.	5
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.	10
	<b>Total Score (out of 50)</b>	<b>65</b>

*NAAC*



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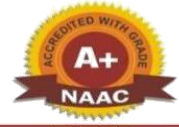
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Paint Technology

### B. Research

B.	Research	Score
1.	Research Ambience in the Department	10
2.	Quality of Publications	7
3.	Relevance of Research to society	10
4.	Student Exposure to Attending Quality Conferences/Symposia	10
5.	Research Intensity of Faculty Members	10
6.	Inter Departmental Research Collaborations	10
7.	Industry/externally funded sponsored research	0
	<b>Total Score (out of 70)</b>	<b>57</b>

### C. Outreach activities

C.	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	10
2.	Delivering of talk / lecture in HBTU apart from regular courses.	10
3.	Expert lectures in other institutes.	10
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoS etc.	10
5.	Contribution to Professional Societies.	10
6.	Editorial responsibilities / reviews of SCI Journals.	0
7.	Organization of Seminar, Workshops, Symposia, FDP.	10
	<b>Total Score (out of 70)</b>	<b>60</b>

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# हरकोटे बटलर प्राविधिक विश्वविद्यालय

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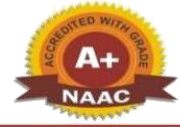
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Paint Technology

### 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	10
4	Availability of adequate Seating Space/Offices and furnishings for Faculty and Research Students	10
5	Availability of Internet Services in Research Labs and Class Rooms	10
6	Departmental Library	10
7	Computing Facilities and Software	10
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband / Wi-fi etc.)	10
9	Faculty- Student Ratio	10
10	Support Staff (Technical/Administrative) Adequacy	8
	<b>Total Score (out of 100)</b>	<b>98</b>

### 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)	10
3	Average Citations per Faculty/Year (Last-three Years) (Web of Science / Scopus)	10
4	Recognitions; Awards(National/International) to Faculty/Students	10
5	Consultancy and Externally Funded Projects	8
6	No. of B. Tech. / M. Tech. / Ph.D. graduates to have taken up career in Academics	10
	<b>Total Score (out of 60)</b>	<b>58</b>

Grand total (out of 550):

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# हरकोटे बटलर प्राविधिक विश्वविद्यालय

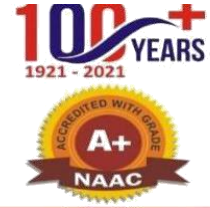
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## Academic Audit (2022-23)-Department of Paint Technology

### SWOC Analyses

#### a) Strength:

1. Dedicated faculty members
2. Very strong alumni base
3. Good placement of students
4. Good analytical and testing facilities
5. Contractual faculty have higher degrees from reputed institutes, like IITs, DTU, and have good blend of industrial & professional experience
6. Department is running PG and doctoral programs.
7. Department has a separate seminar hall/Smart classroom with Audio-Visual facility
8. We are in the process of developing a Centre of Excellence in the department with the help of Alumni & PACT
9. 10 MoUs signed with different industries for research, training, and technology transfer.

#### b) Weakness:

1. There are very few doctoral students in the department.
2. There are very few sponsored research projects

#### c) Opportunities:

1. Owing to well qualified (with Doctoral degrees) faculty members, we are trying to run a good no. of sponsored/funded research projects which will lead to further strengthening the infrastructure facilities, and good research publications & patents.
2. We are trying to fill the vacant faculty positions at the earliest.
3. Simultaneously, we are trying to motivate good UG students to get enrolled for the PG program, and acquired Ph.D., so that they can be received as regular faculty, in future.

#### d) Challenges:

1. Only three faculty members are in regular employment in Paint Technology while three are guest faculty, and one retired professor, working as Visiting Professor.

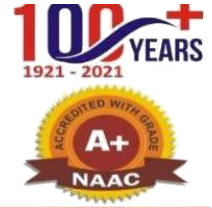
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**Academic Audit (2022-23)-Department of Paint Technology**

<p>Comments for improvement</p> <p>- Lack of Govt. funded sponsored project</p>	
Signature of the Auditor	
Name, Designation and Affiliation	<p>Kamal K Kan. Professor. IIT- Kanpur.</p>

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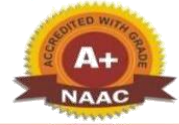
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Paint Technology

### 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: *Paint Tech.*
2. Name and Designation of Auditor: *Prof. Kamal K. Kar, B.E. ME, IIT Kanpur*
3. Date of Audit: *08-11-2023*

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	<i>120</i>
		A.2. Industry – Institute Interaction	70	<i>66</i>
		A.3. Laboratory Development	50	<i>65</i>
B.	Research	--	70	<i>57</i>
C.	Outreach Activities	--	70	<i>60</i>
D.	Departmental Infrastructure and Human Resources	--	100	<i>98</i>
E.	Outcomes	--	60	<i>58</i>
<b>Total Score</b>			550	<i>524</i>

Strengths	Opportunities
1. 2. 3. 4.	1. 2. 3. 4.
Weaknesses	Challenges
1. 2. 3. 4.	1. 2. 3. 4.

*As per Attachment*

General Remarks: *Very good Performance of the Paint Tech. Dept.*

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

Signatures with date:

*[Signature]*  
(HoD)

*[Signature]*  
(Dean of School)

*[Signature]*  
(Auditor)

*[Signature]*  
08.11.2023  
(Dean - CEIQA / IQAC Coordinator)  
Academic Audit  
Coordinator

Place: HBTU, Kanpur



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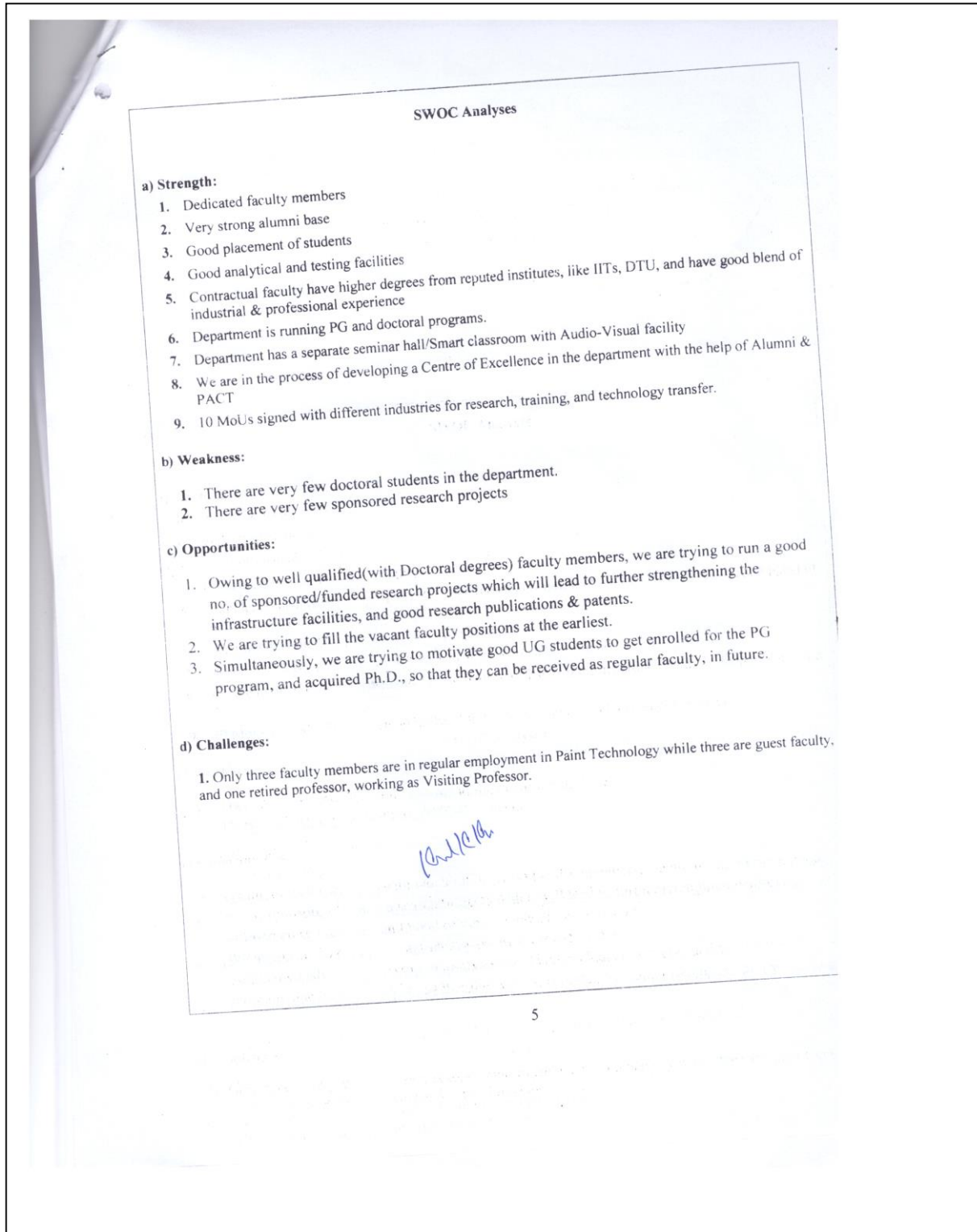
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100+ YEARS  
1921 - 2021



### Academic Audit (2022-23)-Department of Paint Technology



#### SWOC Analyses

**a) Strength:**

1. Dedicated faculty members
2. Very strong alumni base
3. Good placement of students
4. Good analytical and testing facilities
5. Contractual faculty have higher degrees from reputed institutes, like IITs, DTU, and have good blend of industrial & professional experience
6. Department is running PG and doctoral programs.
7. Department has a separate seminar hall/Smart classroom with Audio-Visual facility
8. We are in the process of developing a Centre of Excellence in the department with the help of Alumni & PACT
9. 10 MoUs signed with different industries for research, training, and technology transfer.

**b) Weakness:**

1. There are very few doctoral students in the department.
2. There are very few sponsored research projects

**c) Opportunities:**

1. Owing to well qualified (with Doctoral degrees) faculty members, we are trying to run a good no. of sponsored/funded research projects which will lead to further strengthening the infrastructure facilities, and good research publications & patents.
2. We are trying to fill the vacant faculty positions at the earliest.
3. Simultaneously, we are trying to motivate good UG students to get enrolled for the PG program, and acquired Ph.D., so that they can be received as regular faculty, in future.

**d) Challenges:**

1. Only three faculty members are in regular employment in Paint Technology while three are guest faculty, and one retired professor, working as Visiting Professor.

*(Handwritten signature)*



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**Academic Audit (2022-23)-Department of Physics**

HARCOURT BUTLER TECHNICAL UNIVERSITY

Office of the Dean (Continuing Education and Internal Quality Assurance)

**Summary Sheet for Departmental Academic Audit**

- Name of the Department: **Physics**
- Name and Designation of Experts: **Rajeev Gupta, Prof. IIT Kanpur**
  - 
  - 
  -
- Date of Meeting: **20/11/2023**
- 

S. No.	Items	Sub-Item	Max. Score	Score
A.	Academic	A.1. UG Program	<del>130</del> 90	65
		A.4. Industry – Institute Interaction	<del>70</del> 00	NA
		A.5. Laboratory Development	50	50 42
B.	Research	--	<del>70</del> 60	46
C.	Outreach Activities	--	70	70 50
D.	Departmental Infrastructure and Human Resources	--	100	90 70
E.	Outcomes	--	<del>60</del> 50	35
<b>Total Score</b>			<del>550</del> 410	308

<b>Strengths</b> 1. FACULTY STRENGTH INCREASED TO 4. 2. EXTERNALLY FUNDED PROJECTS 3. NEW LAB FACILITY DEVELOPED 4.	<b>Suggestions for Improvement</b> 1. NEED MORE PHD STUDENTS. 2. INITIATE MASTERS' PROGRAMME 3. REVISE 1 <sup>ST</sup> YEAR COURSE. 4. NEED TO STREAMLINE & FACILITATE PURCHASE OF EQUIPMENT.
<b>Weakness</b> 1. LACK OF INTRA- DEPT. COLLABORATIONS 2. LACK OF SUFFICIENT LAB SPACE. 3. LACK OF TRAINED LAB/OFFICE STAFF. 4.	<b>Remarks /Any Other Point</b> + MORE EFFORTS REQUIRED FOR RESTARTING MSc PROGRAMME.

(Name & Signature of HOD)  
**(Prof. S. K. Sharma)**

(Name & Signature of Expert)  
**RAJEEV GUPTA**

(Name & Signature of Expert)  
**Argh. SoBAC**



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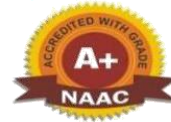
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100+ YEARS  
1921 - 2021



**Academic Audit (2022-23)-Department of Physics**

**HARCOURT BUTLER TECHNICAL UNIVERSITY**

Office of the Dean (Continuing Education and Internal Quality Assurance)

*Note: This Proforma has been designed by the university to carryout in house Academic Audit of the University Departments. (Academic Audit is a scientific and systematic method of reviewing the quality of academic process in the institution. It is related to quality assurance and enhancement of quality in academic activities. It is aimed at understanding the existing system; assessing the strengths and weaknesses of the Departments; suggesting methods for improvement and for overcoming the weaknesses and identifying the opportunities for academic reforms)*

**PROFORMA OF DEPARTMENTAL ACADEMIC AUDIT**

1. Name of Department : Physics

2. Date of Review: 20/11/2023

**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/criteria. For some of the criteria, 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 improvement

**A. ACADEMICS**

A.1	Teaching and learning	Score
1	Admissions in first year	NA
2	Curriculum (Development, Structure, Course Syllabi, Flexibility)	8
3	Formal Academic Load on Students (Teaching, Laboratory/Practical, Projects)	8
4	Evaluation Process (Continuing Evaluation, End-Term Evaluation, transparency, redressal mechanism for students)	9
5	Number of faculty members (Sanctioned, Filled, Vacant, On contract against vacant)	8
6	Number of technical staff in labs	0
7	E-Assisted Learning	8
	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)	
8	Technical Societies for Students	
	i. Departmental Society	
	ii. Student Chapter(s) of Professional Societies	NA

*(Handwritten signatures and initials)*



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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Physics

### C. OUTREACH ACTIVITIES

	Outreach activities	Score
1.	Visit to other institutes of higher learning like IITs, IISc, IISER, etc. by faculty.	8
2.	Delivering of talk / lecture in HBTU apart from regular courses.	7
3.	Expert lectures in other institutes.	6
4.	Visits to other institutes for academic activities like accreditation, academic audit, attending RDCs, BoSetc	7
5.	Contribution to Professional Societies.	8
6.	Editorial responsibilities / reviews of SCI Journals.	8
7.	Organization of Seminar, Workshops, Symposia, FDP.	7
	Total Score (out of 70)	50

### D. Departmental Infrastructure and Human Resource

		Score
1	Adequacy of Class Rooms and Multi-Media Facility	9
2	Availability of adequate Laboratories	8
3	Availability of Conference/Seminar Room, etc	8
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	9
8	Computer and internet facilities: (terminals with LAN facilities, hardwares, printers, photocopy machine, UPS, internet-broadband/wi-fi etc)	9
9	Faculty- Student Ratio	NA
10	Support Staff (Technical/Administrative) Adequacy	0
	Total Score (out of 100)	70

### E. Outcomes

		Score
1	Placements of B.Tech Students	NA
2	Publications per Faculty in Indexed Journals/Year (Average of last three years)	8
3	Average Citations per Faculty/Year (Last-Three Years) (Web of Science/Scopus)	7
4	Recognitions: Awards(National/International) to Faculty/Students	5
5	Consultancy and Externally Funded Projects	9
6	No. of B. Tech / M.Tech /PhD graduates to have taken up career in Academics	6
	Total Score (out of 60)	35



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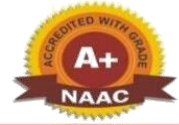
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**100+**  
YEARS  
1921 - 2021



## Academic Audit (2022-23)-Department of Physics

Comments (not more than 100 words for each given below)

- a) Strength:
1. One new faculty added taking the faculty strength to 4.
  2. New funding obtained from external agencies.
  3. New research lab on 2D materials on electronic devices lab.
- b) Weakness:
1. Need to have more Ph.D. Students.
  2. Revised Master's Programme.
  3. There is need of revision of contents of 1<sup>st</sup> yr. course.
  4. Need for more intra-dept. collaborations.
  5. More lab space required.
  6. Augmentation of lab staff.
- c) Suggestions for Improvement
1. Need to streamline & facilitate purchase of Equipment.
  2. More efforts required for starting M.Sc. Programme.

Signature of the Experts			
Name, Designation and Affiliation	Prof. Rajeev Gupta Prof., IIT Kanpur	G. L. Gehlot Dean, SOBAC	Prof. S. K. Sharma HOD - Physics HBTU, Kanpur



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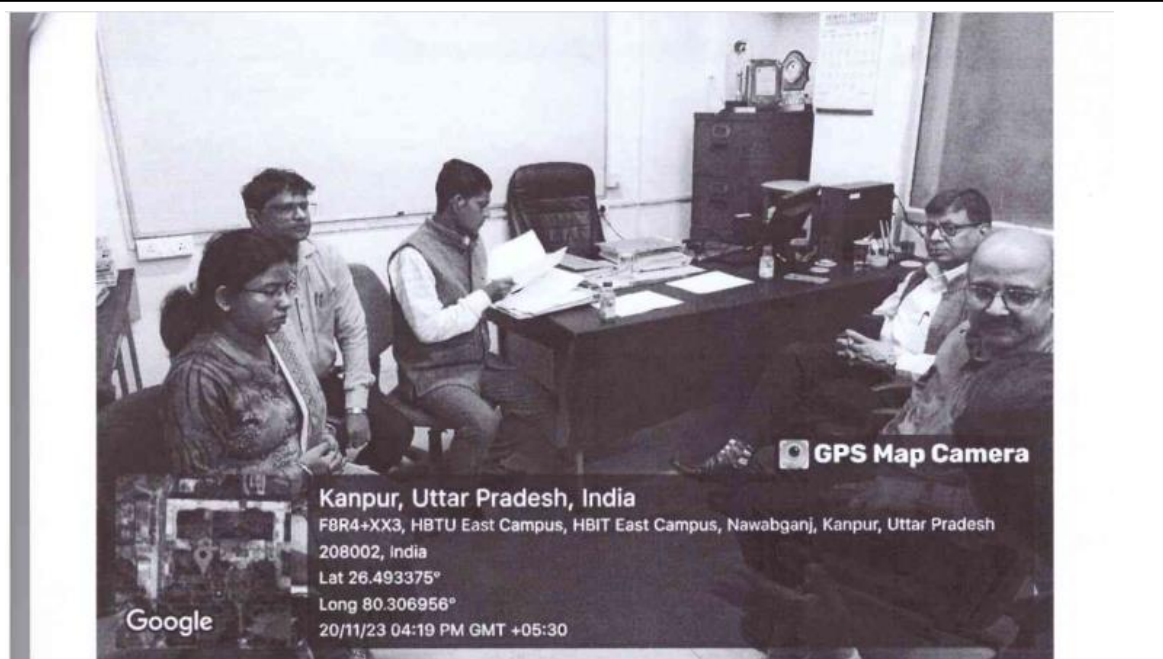
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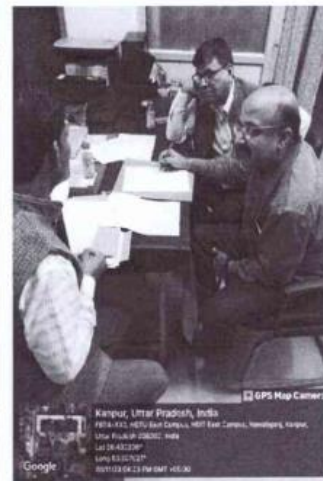
## Academic Audit (2022-23)-Department of Physics



(Left to right): Dr. Divya Samvanshi, Dr. Suresh Kumar Sharma, Dr. Abhishek Kumar Gupta, Prof. S.K.Sharma (HoD) and Prof. Rajeev Gupta (Academic Auditor)



(Left to right): Prof.S.K.Sharma, Prof. Rajeev Gupta, Dr. Braj Bhusan Singh and Dr. Divya Samvanshi



(Left to right): Dr. Abhishek Gupta, Prof.S.K.Sharma





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100+ YEARS  
1921 - 2021



### Academic Audit (2022-23)-Department of Plastic Technology

#### 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

- Name of the Department: *Plastic Technology*
- Name and Designation of Auditor: *Kantesh Balani, Asst. Professor, MSE Depart. IIT Kan*
- Date of Audit: *09/11/2023*

Sl. No.	Items	Sub-Item (s)	Max. Score	Acquired Score
A.	Academics	A.1. Teaching and Learning	130	<i>115</i>
		A.2. Industry - Institute Interaction	70	<i>63</i>
		A.3. Laboratory Development	50	<i>39</i>
B.	Research	--	70	<i>58</i>
C.	Outreach Activities	--	70	<i>60</i>
D.	Departmental Infrastructure and Human Resources	--	100	<i>84</i>
E.	Outcomes	--	60	<i>47</i>
Total Score			550	<i>466</i>

<b>Strengths</b> <ol style="list-style-type: none"> <li><i>Positive vibe of faculty / very caring</i></li> <li><i>Progressive &amp; building up despite limitations</i></li> <li><i>Active student chapter</i></li> <li><i>Good projection (newsletter)</i></li> </ol>	<b>Opportunities</b> <ol style="list-style-type: none"> <li><i>To reach out to industries</i></li> <li><i>Involve students more</i></li> <li><i>Explore AI/ML</i></li> <li><i>Need to be of value-addition to industry</i></li> </ol>
<b>Weaknesses</b> <ol style="list-style-type: none"> <li><i>Need to reach out to industry</i></li> <li><i>Poor support system (from institute)</i></li> <li><i>Low faculty strength</i></li> <li><i>Need to enhance research-quality</i></li> </ol>	<b>Challenges</b> <ol style="list-style-type: none"> <li><i>Enhance quality of research</i></li> <li><i>Secure sponsored funding</i></li> <li><i>come out of comfort zone</i></li> <li><i>Next 10 year plan/vision + industry AI/ML</i></li> </ol>

General Remarks:

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

Signatures with date:

*[Signature]*  
(HOD)

*[Signature]*  
(Dean of School)

*[Signature]*  
(Auditor)

*[Signature]*  
09/11/2023  
(Dean - CEIQA / IQAC Coordinator)

Place: HBTU, Kanpur