

HALDIA INSTITUTE OF TECHNOLOGY

INTERNAL QUALITY ASSURANCE CELL

Academic Audit 2020-2021

Evaluation Sheet

Department Name: **Mechanical Engineering**
 Programme Name: B.Tech, M.Tech
 Academic Year: **2020-2021**

I. PEOs, POs and Curriculum		
SI No	Criterion	Observations
1	PSO's and PO's attainment	All the PSOs & POs have been attained.
2	Revision in curriculum and validation date (provide details)	25/09/2020 Initial inputs for the curriculum revision/modification were sought from the experts of the BOS. The final validation of the curriculum was done on 12 th July 2021 through a BOS meeting.
3	The extent of its satisfaction with curriculum revision	The previous curriculum gaps are mitigated through this newly framed Curriculum. More revisions may be executed in due course of time depending upon the feedback received.

II. Faculty information and their contribution		
SI No	Criterion	Observations
1	Teacher-Student ratio	1:24
2	Faculty Cadre ratio	3:4:13
3	Faculty qualifications	PhD:9, M.Tech:11
4	Average experience of faculty	13 years
5	Faculty contribution to writing	
	Books	2
	Chapters	9

6	Members of Editorial boards	1
7	Faculty in professional organisations	8
8	Awards/ Rewards received	NIL
9	Industry collaborative projects	2
10	Faculty as resource persons in workshops/ trainingactivities	12
11	National-level events organised Conference Workshops/Seminars- FDPs International-level events organised Conferences- Workshops-Seminars	4 0 0 1
12	Number of conferences /seminars workshops/ FDP's anyexclusive programs attended for the enrichment of the teaching-learning process	8

III. Teaching-Learning Process and Evaluation

SI No	Criterion	Observations
1	Mechanisms and activities for slow learners for their improvement outcomes	(i) Remedial/Extra classes are conducted with an appropriate focus on the subject/topic codes in which the students are found to be slow learners (ii) Individual academic counselling is done by the concerned subject teacher. (iii) Student helpdesk. (iv) Student study groups are formed for peer-to-peer learning. (v) Personal counselling is done through the mentoring (Teacher-guardian) scheme which takes care of the student's mentors and maintains the entire academic record of the student which is also conveyed to the parents from time to time by the teacher-guardian. Slow learners are counselled and motivated by their mentors.
2	Student counselling mentoring	The student mentorship programme incorporates the support of faculty members as "Mentors" to all the

	mechanism	<p>students in the college. Each student shall be assigned a “Mentor” to overcome their hurdles to achieve the goals desired by them in their academic career.</p> <p>The target of this Mentoring Programme is to identify fundamental mechanisms that will:</p> <ol style="list-style-type: none"> 1. Provide students with career and non-academic counselling. 2. Provide students with information on preparatory courses such as skill courses, bridge courses etc. for their academic prosperity. 3. Focus and motivate students to achieve learning goals and thereby improve their academic performance. 4. Guide, encourage, and advise the students about their upcoming student life, student health, and mental and emotional well-being listen to their issues with patience and help them solve their concerns with appropriate resources, support and referral available. 5. Generate curiosity and interest in academics and other institutional activities amongst the students.
3	Tutorial classes	<p>In tutorial classes, students undertake group discussions, problems faced in the lecture room, quizzes, class tests, and work exercises, under the supervision of a faculty. These measures improve the knowledge of the subject and appropriate planning of any work for achieving the objective.</p>
4	<p>Monitoring of the teaching-learning process</p> <ol style="list-style-type: none"> (a) E-learning models: (b) Assessment of the teaching process in classrooms (c) Innovative teaching process in presented if any (d) Verification of course files: 	<p>(a) Different types of assessment activities that are:</p> <ul style="list-style-type: none"> • Ungraded activities and feedback built into study materials • Self-assessment quizzes and tests that allow learners to check their learning • Formal feedback on assignments from instructors, peers, workplace colleagues or mentors • Informal dialogue with instructors, peers or others • Ungraded tests that prepare learners for formal graded assessments <p>(b) Assessment of the teaching process in classrooms:</p> <p>The faculty practices diagnostic assessment, formative</p>

		assessment, summative assessment and informal assessment in the classroom so that they can be used throughout the learning process so that the students can explore and use a wide range of assessment methods to monitor their learners. (d) Verification of course files is done at the end of the semester.
5	Training programs conducted for students	Industrial vocational training and internship at various industries
6	Students' feedback & steps taken	Online student feedback for faculty is conducted in the department and based on the comments faculties are guided and instructed accordingly.
7	Scope for Self-learning Certified course Online courses	Students are instructed to attend online courses through NPTEL, COURSERA etc.
8	Results Analysis	Semester-wise result analyses for individual subjects are carried out by the respective subject teachers.
9	Parents meeting on evaluations of student's progress	Department organise parents meeting for analysing year wise students progress.
10	Student involvement in extracurricular & Co-curricular activities:	Students participate in the institute's sports programme and cultural meet. The department has the SAE collegiate club, ISHRAE Club etc. In the department students indigenously design and develop Formula 1 as well as Go Kart vehicles for participating in various national-level competitions. There are three different clubs which are run by the students through faculty monitoring viz. technical club, sports club and cultural club. Alumni meetings of the department are organised by the present as well as past students regularly.

IV. Research, Consultancy and Extension		
Sl No.	Criterion	Observations
1	Faculty publications in journals National-	0 7

	International-	
2	Publications in conference National- International-	5
3	PhDs-Registered Awarded Pursuing	0 1 6
4	Funded R&D projects Applied Sanctioned Ongoing Completed	1 2(CSIR and AICTE Funded) 0
5	Patent applied Patent awarded	0
6	In-house R & D grants & projects	6
7	New research facilities/ laboratory facilities provided	2
8	MOUs with industries/ R & D/ Premier institutes	1
9	Research centres of Excellence established	NIL

V. Infrastructure and Learning Resources		
SI No	Criterion	Observations
1	Adequacy of infrastructural facilities to improve the teaching-learning process Classrooms: Laboratories: ICT/e-classrooms: Seminar halls:	Smart classroom with normal classrooms(04 Nos.) available. 15 laboratories available. 1 e-class rooms
2	Internet facilities for faculty & students	Yes

3	Modern/ new equipment added in laboratories	Yes
4	Details of computing facilities and improvement	CAD/CAM Laboratory
5	Department-level library resources	Yes

VI. Student information, Support and Progression		
Sl. No.	Criterion	Observations
1	Department student clubs	SAE Collegiate Club, ME Club, NEEDS, SAMARPAN
2	Details of coaching provided for GATE/ GRE/ any other competitive exams for higher studies	Yes, coaching is provided to students for GATE.
3	Industrial visits and academic visits	The college organises industrial visits and internships.

VII. SWOC Analysis of the Department		
Sl. No.	Criterion	Observations
1	Strength:	<ol style="list-style-type: none"> 1. Qualified faculty. 2. Organized administrative activities. 3. Good industry interactions
2	Weakness:	<ol style="list-style-type: none"> 1. Less number of research funding. 2. Quality time for the faculty members for self-development. 3. Student involvement in research activities. 4. Interdisciplinary interactions.

3	Opportunities	<ol style="list-style-type: none"> 1. Location and connectivity (Proximity to industry hubs, core and IT). 2. Aspiring students, and faculty members. 3. New industry demands on machine learning, AI, automation, etc.
4	Best practice/ Innovative:	<ol style="list-style-type: none"> 1. Emphasis on Design-based problem-solving. 2. Coverage beyond syllabus 3. Student project exhibitions and connect with the course activities 4. Systematic course mapping and use of course management tools both for faculty and students 5. Well-streamlined, transparent, centralized examination conducting activities like paper setting and evaluation.
5	Plans:	<ol style="list-style-type: none"> 1. gradation of departmental infrastructures (e.g. laboratory facilities and space, library and other academic infrastructures) to suit the pace of modernisation and emerging technological upliftment 2. Upgrading skills of Faculty members to match rapid growth and technology advancements in industries 3. Attracting more students with outstanding academic records towards engineering education and prospects 4. Routine upgradation and improvement of curriculum 5. Training and development of English communication skills, and other aspects of professional communication and teamwork in students from rural / semi-urban background

Academic Audit Report 2020-21

1. Name of Department: **Mechanical Engineering**
2. No of full-time permanent faculty: 20
3. No part-time Visiting temporary contractual faculty: Nil
4. No of PG/UG courses: UG-1, PG-1
5. Curriculum Revisions during the year: Revised
6. Research: Publications in journals: International-7 National-Nil
7. PhD Awarded:
8. Faculty guiding Ph.D: 1
9. Number of Conferences/Lectures Organized: 6
10. Ongoing Sponsored projects & amount: 2, amount 26 Lakhs (Total)
11. No of Faculty using: ICT & PPT 20
12. New Equipment and Infrastructure added: Additive Manufacturing machine, Reverse engineering setup
13. Student feedback on Curriculum (Yes/ No): Yes

14. Strengths:

1. The Departments are competent and actively contribute towards the improvement of students' employability (70 – 80% rate of recruitment in the last 4 – 5 years) as well as their performance in competitive exams like GATE, GRE, TOEFL, CAT, MAT, etc.
2. Many of the faculties have been actively engaged in research with research grants from AICTE, CSIR, and other Government agencies.
3. Many of the faculties have been actively publishing in national/international journals, peer-reviewed journals, books, book chapters, etc.
4. Students passing out from the department have been strengthening a tremendously successful pool of alumni, who are achieving excellent heights as professionals in different academic, business and industry organizations of national and international repute.
5. Mentorship, guidance, counselling, and enhanced student-teacher communication in the department.

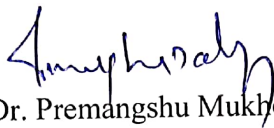
15. Weaknesses:

1. Less number of research funding.
2. Quality time for the faculty members for self-development.
3. Student involvement in research activities.
4. Interdisciplinary interactions.

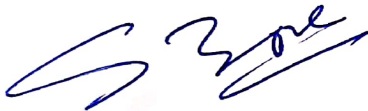
16. Suggestions for improvement

1. gradation of departmental infrastructures (e.g. laboratory facilities and space, library and other academic infrastructures) to suit the pace of modernisation and emerging technological upliftment
2. Upgrading skills of Faculty members to match rapid growth and technology advancements in industries
3. Attracting more students with outstanding academic records towards engineering education and prospects
4. Routine gradation and improvement of curriculum
5. Training and development of English communication skills, and other aspects of professional communication and teamwork in students from rural / semi-urban background

17. Academic Auditors:

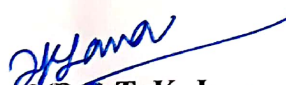

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