

HALDIA INSTITUTE OF TECHNOLOGY
INTERNAL QUALITY ASSURANCE CELL

ACADEMIC AUDIT

Evaluation Sheet

Assessment Year: 2022-23

NAME OF THE DEPARTMENT: CHEMICAL ENGINEERING

Name of the Program: B. Tech and M. Tech

| 1. PEO's, PO's and Curriculum | | |
|--------------------------------------|---|---|
| Sr. No | Criterion | Observations |
| 1. | PEO's, PO's attainment | Yes |
| 2. | Revision of curriculum if any (Provide Details) | <ul style="list-style-type: none"> • Autonomous Syllabus(B.Tech) was followed from 2nd year students • MAKAUT New syllabus was followed for one 4th year student. • Autonomous Syllabus (M.Tech) was followed from M.Tech ,1st year students |
| 3 | Extent of its satisfaction with Curriculum Revision | The Syllabus is well designed. Value added courses are there to enrich ethics, human values and core subjects |

2. A. List of the Faculty Members

| S. No. | Name | Qualification | Designation | Date of Joining |
|---------------|------------------------------|----------------------|--|------------------------|
| 1 | Prof. Asit Kr. Saha | Ph.D. | Professor & Dean (Research) | 04.06.97 |
| 2 | Prof. Radha Das | Ph.D. | Professor & Dean (School of Chemical, Food and Biotech.) | 07.12.98 |
| 3 | Prof. Tapas Kr. Manna | Ph.D. | Professor | 30.06.99 |
| 4 | Prof. Sunil BaranKuila | Ph.D. | Professor & Head | 01.10.05 |
| 5 | Dr. Rabindranath Jana | Ph.D. | Associate Professor | 11.01.10 |
| 6 | Dr. Somak Jyoti Sahu | Ph. D. | Associate Professor | 06.09.05 |
| 7 | Dr.BiswajitMandal | Ph.D. | Associate Professor | 01.06.06 |
| 8 | Dr. Siddhartha SankarBoxi | Ph.D. | Associate Professor | 01.09.17 |
| 9 | Dr.Sutapa Roy | Ph.D | Assistant Professor | 30.07.07 |

| | | | | |
|----|----------------------|---------|---------------------|----------|
| 10 | Ms.KekaRana | M. Tech | Assistant Professor | 12.06.09 |
| 11 | Mrs.SonaliSamanta | M. E. | Assistant Professor | 01.08.14 |
| 12 | Dr.BarnaliBej | Ph.D | Assistant Professor | 05.02.16 |
| 13 | Dr.LipikaDas Samanta | Ph.D | Assistant Professor | 07.03.16 |
| 14 | Mrs.AditiSinha | M. Tech | Assistant Professor | 01.08.18 |
| 15 | Mrs.TanushreeGhosh | M. Tech | Assistant Professor | 01.08.22 |
| 16 | Sri Sukhen Das | M. Tech | Assistant Professor | 17.05.22 |
| 17 | Dr.Anoar Ali Khan | PhD | Assistant Professor | 17.05.22 |
| 18 | Ms.SusmitaMaity | M. Tech | Assistant Professor | 08.06.22 |
| 19 | Sri BiswajitMaity | M. Tech | Assistant Professor | 13.06.22 |
| 20 | Sri Tanmoy Manna | M. Tech | Assistant Professor | 13.06.22 |
| 21 | Sri KrishnenduDolai | M. Tech | Assistant Professor | 20.05.22 |
| 22 | Sri DipkinkarMaity | M. Tech | Assistant Professor | 20.05.22 |
| 23 | Sri UttamPanja | M. Tech | Assistant Professor | 21.05.22 |

| 2.B. Faculty Information and their Contribution | | |
|--|---|--|
| Sr. No | Criterion | Observations |
| 1. | Teacher Students Ratio (B.Tech) 1 Faculty is dedicated for PG course | 16.52 |
| 2. | Faculty Contribution a) Book Publication b) Book Chapter c) Workshop/FDP/STP attended for enriching teaching learning process d) Conference Publication | a) 0 b) 1 c) 72 d) 38 |
| 3. | Members in Editorial Board | 2 |
| 4. | Membership in Professional Organisation | Indian Institute of Chemical Engineers (IChE)-15 Institution of Engineers India (IEI)-10 Indian Science Congress Association-1 Indian Chemical Society(ICS)-1 Indian Society for Technical Education (ISTE)-2 Enviro Media-1 Haldia Vigyan Parisad-1 |

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|-----|---|--|
| | | Indian Society for Technical Education-1 Society for Polymer Science (SPS), India-1 Materials Research Society of India (MRSI)-1 |
| 5. | Awards/ Rewards Received | 0 |
| 6. | Faculty as resource person in workshop/ training activities | 5 |
| 7. | Industrial Collaborative projects | 3 |
| 8. | National Level Event Organised a) Conference b) Seminar/ workshop c) FDP | 1 5 1 |
| 9. | International Level Event Organised | 0 |
| 10. | Departmental Level Committee | Yes (Annex 3) |
| 11. | Committee members in Institution Level | yes |
| 12. | Functional MoU with Industries | 3 |
| 13. | Industry Sponsored In-house Internship on Entrepreneurship / Start-up | 1 |
| 14. | Multi-disciplinary Consortium | 2 |

| 2. C. Sponsored Research/Consultancy | | | | | |
|---|---|--|--------------------------------|--|-------------------------|
| Name of the faculty | Project Title | Project Type Research/Consultancy | Funding Agency | Amount (Rs) | Duration |
| Siddhartha SankarBoxi, Sunil BaranKuila, Somak Jyoti Sahu, BarnaliBej | Preparation of DPR and Setting up of a Caustic Soda Plant | Consultancy | Grow Capital for Trading Estd. | 2,00,000/- | 01.06.2022-Continuing |
| BiswajitMandal& Sunil BaranKuila | Machine learning of real time images analysis of solar modules | Consultancy | Sunkconnect Pte | 40,000/- (1 st phase) out of total 80000/- sanction | 04.01.2022 - continuing |
| Radha Das | Production of SiO ₂ Nano Powder from Rice Husk Ash(Crop Residue)for its Industrial Uses :Waste to Wealth | Research | MSME (Govt. of India) | 15,00,000 | 23.07.22-Continuing |
| Sunil BaranKuila, BiswajitMandal | Synthesis and Characterization of Novel Nano Filled Polymeric Ion | Research | IICHE | 20,000 | 03.02.22 to 03.02.23 |

| | | | | | |
|----------------------------------|--|----------|---|----------|----------------------|
| | Membrane for Proton-Exchange Membrane Fuel Cells (PEMFC) and Pervaporative Separation | | | | |
| BiswajitMandal, Sunil BaranKuila | Synthesis and characterization of electrocatalyst for proton-exchange membrane fuel cells (pemfc) and regenerative fuel cell | Research | IICHE | 10,000 | 03.02.22 to 03.02.23 |
| Somak Jyoti Sahu, Sutapa Roy | Synthesis and Characterization of Cashew Nut Shell Oil (CNSL) by Solvent Extraction/ Supercritical Fluid Extraction | Research | IICHE | 20,000 | 03.02.22 to 03.02.23 |
| Somak Jyoti Sahu | Studies of Water Quality Parameters (Water Quality Index) around Haldia Industrial Region | Research | HIT, Haldia | 1,00,000 | 01.02.22 to 01.02.23 |
| BiswajitMandal | Smart sprinkler and smart firefighting strategies on domestic and industrial applications | Research | Terra Green Technologies Pvt. Ltd., Kolkata | 15,000 | 31.05.22 to 30.11.22 |

2. D. Details of the Proposal forwarded for approval

1. **Dr. BiswajitMandal along with the other co- principal investigators** (Dr. SubrataMondal, Dr. SomnathGhosh, CE, Dr. Tapas Kumar Manna, CHE, Dr. Somak Jyoti Sahu, CHE, Dr. Debasish Das Adhikari, ME, Dr. Sunil BaranKuila, CHE, Dr. Sutapa Roy, CHE, Dr. Lipika Das, CHE, Dr. AmitBiswas, Dr. Amiya Kumar Samanta, CE NIT Durgapur, Dr. AvijitGhosh, CHE, HIT Kolkata) of the multi institutional consortium (National consortium to use agricultural residue as Fuel and Construction Materials NCARFCM 22) Submitted a project entitled “Research & Technology Development for Blending of Agro-Residues with Coal in Thermal Power Plants”, to the Department of Science and Technology (Technology Mission Division-EWO), Amount - Rs. 4.63 Cores, on 31.09.2022.
2. **Prof. Radha Das**, Submitted a project, Title: Production of Bio-Ethanol from Waste Fruits & Vegetables: Waste to Wealth to MSME in December 2022 having fund value of 15 Lakhs.

3. **Prof. Radha Das**, submitted a project to WB Techathon Hunt on “Removal of Heavy Metals from Industrial Effluent Using Bio-Adsorbent: A Solution for emerging Water Crisis”.
4. **Dr.Somok Jyoti Sahu**, submitted one theme based proposal to MSME. Title “Studies on Agro based biomass up gradation as energy source A win -win condition for farmers and environment” amount 15 Lakh on October, 2022.
5. **Dr. Siddhartha SankarBoxi**, submitted one Project proposal on “Production of Hydrogen by Photocatalytic Water Splitting using Cobalt Oxide (Co₃O₄) Nanocatalyst” to SERB, DST in March, 2022 (Project value is 42 Lakh).
6. **Dr.S. B. Kuila**, submitted project proposal under the scheme of ‘DST-Sathi’ of costing Rs. 1200 Lac.(Approx) during Dec., 2021.
7. **Dr. R. Das, Dr. S.J. Sahu** submitted one Project proposal on “Effluent Water Treatment for its utilization as Process Water in Petrochemical Industries” to DST in January 2022 (Project value is 45.3 Lakh).
8. **Dr.R. Das**, submitted one Project for “Swami Vivekananda Award” Grant from DST West Bengal February 2022 (Project Value: 14.17 Lakh).
9. **Dr. S. J. Sahu**, submitted Expression of Interest in STI Policy Research towards establishment of Centre for Policy Research (CPR) to DST, “Formulation and implementation of appropriate Science & Technology Policy in Higher Education”, in Haldia Institute of Technology, Amount 100 lakhs, Date 10.12.2021.
10. **Dr.BiswajitMandal**, submitted Project proposal on “synthesis and characterization of electrocatalyst for proton-exchange membrane fuel cells (pemfc) and regenerative fuel cell” submitted to IChE, 2021.
11. **Dr.Radharani Das, Dr. R.N. Jana. Ms.AditiSinha**, “Removal of Hazardous Chemicals from Industrial Effluent using Activated Neem Leaf Powder for its Re-use: A Solution for Emerging Water Crisis” submitted to WB DST, 15.2.2022, Rs. 1417000/-.

3. Teaching-Learning Process and Evaluation

| Sl. No | Criterion | Observations |
|--------|---|--|
| 1. | Mechanism and activities for slow learners for their improvement and outcomes | <p>Guidelines for slow learner (Weak Students):</p> <ul style="list-style-type: none"> ● The connotation of academically slow learner (Weak Students) means those who could not keep pace with the classroom teaching needs extra attention so as to bring such students at par with the rest of the students of the class. ● Slow learners are identified based on their performance in University Examination of previous semester and internal examinations. <p>Measures taken for improving academic performance of these students as per following :</p> <p>(i) Remedial/Extra classes are conducted with appropriate</p> |

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|----|---|--|
| | | <p>focus on the subject/topic codes in which the students are found to be slow learners.</p> <p>(ii) Individual academic counselling is done by concerned subject teacher.</p> <p>(iii) Student helpdesk.</p> <p>(iv) Students study groups are formed for peer-to-peer learning.</p> <p>(v) Personal counselling is done through mentoring scheme which takes care of the students mentors maintain the entire academic record of the student which is also conveyed to the parents time to time by the teacher. Slow learners are counselled and motivated by the mentors.</p> |
| 2. | Student counselling / mentoring mechanism | <p>The teachers counsel a batch of about 25 students and remain in close contact with the students allotted to them. They cater to their emotional and intellectual needs and convey the progress report and feedback on attendance, examination results, and the overall progress to parents at regular interval.</p> <p>A mentor can always do more for the benefit of the students as per the following mechanism:</p> <ul style="list-style-type: none"> • Meet the group of students at least twice a month. • Continuously monitor, counsel, guide and motivate the students in all academic matters. • Advise students regarding choice of electives, project, summer training etc. • Contact parents/guardians if situation demands e.g. academic irregularities, negative behavioral changes and interpersonal relations, detrimental activities etc. • Advise students in their career development/professional guidance. • Keep contact with the students even after their graduation. • Intimate HOD and suggest if any administrative action is called for. • Maintain a brief but clear record of all discussions with students |
| 3. | Tutorial classes | <p>Whether in-person or online, facilitating tutorials is an opportunity to work closely with students and understand where they are in their learning. For many graduate students, teaching tutorials is often their first and sometimes only chance to apply and develop their technical skills.</p> <p>The most common tutorial types are:</p> <ul style="list-style-type: none"> • Discussion-based tutorials: these tutorials focus on a deeper exploration of course content through discussions and debates. • Problem-solving tutorials: these tutorials are common in math, science and engineering and focus on problem solving processes and quantitative reasoning. • Review and Q&A tutorials: in these tutorials, students ask |

| | | questions about the course content and assignments, review key course content in preparation for tests or exams, and consolidate their learning in the guiding presence of their instructor or Technical Assistant (TA) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|------------------------------------|-----|-----|----|-----|----------|--------|-------|--|--|--|----------|----------|----|----|----|----|----|----|----------|---|-------|-----|-----|--|--|-----|-----|----|---|--|--|-----|-----|-----|-----|-----|-----|-----|----|----|--|--|-----|-----|-----|--|--|-----|-----|----|----|--|--|-----|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|----------|----------|----|----|----|----|----|----|----------|---|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 4. | Monitoring of teaching-learning process -Assessment of teaching process in classroom. -Innovative teaching methods presented if any -Verification of course files | Annexure 2 Done by HOD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5. | Best Practices | Annexure 2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6. | Training programs conducted for students / Guest lecturers / Seminars / workshop: | 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7. | Student feedback | Satisfactory (Before end semester examination it was collected) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 8. | Scope for Self-learning Certified Online courses | Available (NPTEL, MOOCKS etc) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9. | Results Analysis: (Semester / year wise) | <table border="1"> <thead> <tr> <th colspan="11">Result Summary for 2022-2023 (ODD)</th> </tr> <tr> <th>Semester</th> <th>Appeared</th> <th>>4</th> <th>>5</th> <th>>6</th> <th>>7</th> <th>>8</th> <th>>9</th> <th>Withheld</th> <th>X</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>3rd</td> <td>120</td> <td></td> <td></td> <td>120</td> <td>100</td> <td>42</td> <td>4</td> <td></td> <td></td> <td>120</td> </tr> <tr> <td>5th</td> <td>125</td> <td>125</td> <td>124</td> <td>123</td> <td>112</td> <td>62</td> <td>11</td> <td></td> <td></td> <td>125</td> </tr> <tr> <td>7th</td> <td>120</td> <td></td> <td></td> <td>120</td> <td>117</td> <td>99</td> <td>23</td> <td></td> <td></td> <td>120</td> </tr> <tr> <td>Total</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">DEPARTMENT OF CHEMICAL ENGINEERING</p> <table border="1"> <thead> <tr> <th colspan="11">Result Summary for 2022-2023 (EVEN) (Results Awaited)</th> </tr> <tr> <th>Semester</th> <th>Appeared</th> <th>>4</th> <th>>5</th> <th>>6</th> <th>>7</th> <th>>8</th> <th>>9</th> <th>Withheld</th> <th>X</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> | Result Summary for 2022-2023 (ODD) | | | | | | | | | | | Semester | Appeared | >4 | >5 | >6 | >7 | >8 | >9 | Withheld | X | Total | 3rd | 120 | | | 120 | 100 | 42 | 4 | | | 120 | 5th | 125 | 125 | 124 | 123 | 112 | 62 | 11 | | | 125 | 7th | 120 | | | 120 | 117 | 99 | 23 | | | 120 | Total | | | | | | | | | | | Result Summary for 2022-2023 (EVEN) (Results Awaited) | | | | | | | | | | | Semester | Appeared | >4 | >5 | >6 | >7 | >8 | >9 | Withheld | X | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Result Summary for 2022-2023 (ODD) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Semester | Appeared | >4 | >5 | >6 | >7 | >8 | >9 | Withheld | X | Total | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3rd | 120 | | | 120 | 100 | 42 | 4 | | | 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 5th | 125 | 125 | 124 | 123 | 112 | 62 | 11 | | | 125 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7th | 120 | | | 120 | 117 | 99 | 23 | | | 120 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Result Summary for 2022-2023 (EVEN) (Results Awaited) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 10. | Placements (with details) | Annexure 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11. | Higher studies (with details) | <table border="1"> <tr> <td>M.Tech</td> <td>7</td> </tr> <tr> <td>MBA</td> <td>-</td> </tr> <tr> <td>MSc</td> <td>-</td> </tr> <tr> <td>Others</td> <td>-</td> </tr> </table> | M.Tech | 7 | MBA | - | MSc | - | Others | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M.Tech | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MBA | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MSc | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Others | - | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12. | List of student professional bodies: | IChE and IEI students Chapter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13. | Students Publication Journal | 3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | |
|--|-------------|----|
| | Conferences | 46 |
| | Awards | 28 |
| | Patent | 1 |

| 4. Research | | |
|--------------------|---|---|
| Sl. No. | Criterion | Observations |
| 1 | Faculty publications in journals: National – International - | 0 8 |
| 2 | Publication in conferences: National- International- | 30 8 |
| 3 | PhDs – Registered : Awarded : Pursuing : | 1 0 2 |
| 4 | Funded R&D Projects Applied: Sanctioned : Ongoing: Completed: | 11 3 5 |
| 5 | Patents applier : Patents awarded: | 1 0 |
| 6 | In-house R&D grants & Projects | 1 |
| 7 | New research facilities/ laboratory facilities provided : | <p>Apart from previous year instruments, analytical and laboratory facilities we have also few advanced research facilities developed through research project work as well as doctoral research work. We have faculty members regularly conducted research work using facilities created by their own their research activities. The frontline area of interest s are Fuel Cell Research, Hydrogen Energy, Water gas, Pervaporation, Innovative membrane composition for RFC and Finest Separation, Waste Water, Waste Plastic, Artificial Photosynthesis, Catalysis, Alternative Energy Sources, Advance adsorption technologies, Control strategies and Advance separation.</p> <p>Students can do their internship and research project including doctoral research on the said areas and will expand further</p> |

| 5. Infrastructure and Learning Resources | | |
|---|------------------|---------------------|
| Sl. | Criterion | Observations |

| No. | | |
|-----|---|-------------------------------------|
| 1 | Adequacy of Infrastructure facilities to improve the teaching learning process Class Rooms : Laboratories : ICT class rooms / e-class rooms : Seminar Halls : | 3 9 1 1 |
| 2 | Internet facilities for faculty & Students : | yes |
| 3 | Modern / new equipment added in laboratories | Yes |
| 4 | Details of computing facilities and improvement | Already exist |
| 5 | Department level library resources | Books – 134 Project Report -1154 |

| 6. Student information, Support and Progression | | |
|--|---------------------------------|--------------|
| Sr. No | Criterion | Observations |
| 1. | Departmental student club | Chem Voice |
| 2. | Industrial visit and internship | 124 |
| 3 | Coaching for skill development | Yes given |

Declaration by the Head of the department:

I am aware that the above information provided by the department will be validate by the academic audit committee.

Prof. Sunil BaranKuila
HOD, Chemical Engineering.

Annexure 1

Haldia Institute of Technology
DEPARTMENT OF CHEMICAL ENGINEERING
BATCH-2022
Placement Records

| Year | 2019-20 | 2020-21 | 2021-22 | 2022-23 (continued) |
|------------------------------|---------|---------|---------|---------------------|
| Total no. of students | 60 | 67 | 70 | 124 |
| Total no. of Placed | 53 | 57 | 64 | 110 |
| % Percentage | 88 | 85 | 91 | 79 |

| Year | Total no. of students | Total no. of Placed | % Percentage |
|---------------------|-----------------------|---------------------|--------------|
| 2019-20 | 60 | 53 | 88 |
| 2020-21 | 67 | 57 | 85 |
| 2021-22 | 70 | 64 | 91 |
| 2022-23 (continued) | 124 | 110 | 88.70967742 |

| Major Companies | Package | No. of Students Placed |
|----------------------------|----------|------------------------|
| Haldia Petrochemicals Ltd. | 8.20 LPA | 1 |
| JSW Group | 6.5 LPA | 1 |
| Wood India Ltd. | 6 LPA | 2 |
| Philips Carbon Black Ltd. | 6 LPA | 3 |
| Berger Paints | 5.5 LPA | 4 |
| SHV Energy | 4.63 LPA | 3 |
| Worley India | 4.25 LPA | 1 |
| MCPI Private Ltd. | 4.25 LPA | 1 |
| Indian Oil Tanking Ltd. | 4 LPA | 3 |
| Finorchem | 3.31 LPA | 1 |
| Himadri Chemicals | 3 LPA | 1 |
| Glenmark life sciences | 3 LPA | 9 |
| NRG Tech | 3 LPA | 4 |
| Carbon resources | 3 LPA | 2 |

| | | |
|--|--|--|
| | 12 people are not interested in placement | |
| | So the total unplaced are 14 | |

Annexure 2

Monitoring of teaching-learning process

- **Assessment of teaching process in classroom**

Frequent internal class tests to evaluate the students, ii) Interactive session before completion of each class iii) Technical Quiz contest , iv) To arrange question answering sessions to develop knowledge and practical concept of the students v) Submission of assignments by the students on each module vi) Arrangement of Surprise test . vii) Arrangement for mock interview for the students to prepare them for solving real problems. viii) Strictly monitoring of the absenteeism of students. ix) Surprise visit of Dean, HOD or senior experienced faculties into the class room to evaluate the effectiveness of the teaching process by the junior faculties.

- **Innovative teaching methods presented if any:**

- i) Teaching through LCD presentation
- ii) Teaching smart board
- iii) Periodic arrangement of seminar, invited talk and conferences on different subject topic to enhance the knowledge.
- iv) To change the class atmosphere.
- v) Submission of mini project by the students on a given topic and its presentation.
- vi) Arrangement of technical extempore on various topics.
- vii) To arrange brain storming sessions.
- viii) Teaching through animation for better understanding

Best Practices:

- **Practice 1: Emphasis on Design based problem solving.**

Objectives of the Practice:

1. To inculcate innovative thinking and problem solving ability.
2. To undertake challenges of providing solution to real-life problems
3. To apply the theoretical knowledge and innovative ideas to solve the industrial problems satisfactorily.

The Context:

1. Professional core courses are considered for implementation
2. Design based problem solving and use of modern tools

The Practices:

- In congruence with the present industry requirements of highly efficient and productive man power, it is the need of the hour that the fresh graduates would be able to contribute significantly in solutions to the ever increasing industrial problems. Problem-based learning is becoming increasingly popular in educational institutions as an approach to mitigate the gaps of traditional teaching. In comparison to the traditional approaches, the students participate actively to respond to a real-life problem. This is why problem-based learning is envisaged as

an innovative measure to encourage students to learn how to self-educate via real-life problems. In this direction, the institute emphasis on problem-based learning as a solution to produce graduates who are creative and can think critically, analytically to solve the problems. This process is introduced gradually and it is expected to grow to cover every area of engineering disciplines. Complex engineering problems solving, mini projects, data analysis etc. are undertaken to hone this ability.

- Small groups are formed combining bright and weak students. The faculty members act as the facilitator and mentor. Open source resources are consulted to aid the problem solving. Collaborative and Cooperative teaching learning is adopted for this purposes. A particular problem is dealt with due considerations to the system components, constraints, operating environments, solutions required, and multiple approaches in the solution and their relative merit and demerits.
- The result analysis is also an important component of such problem solving. Possibility or suggestions, if any, for the improvement of the process performance or the system performance or the product are also investigated and discussed as a part of the proposed problem solving approach.

Evidence of Success:

1. Improved grade points in End semester examination
2. Higher placement

Annexure 3

DEPARTMENT OF CHEMICAL ENGINEERING

**The Departmental Sub-Committees for the various responsibilities of the
Session 2022-2023**

| Sub-Committee | Responsibilities | Name of the Faculty and Staff Member |
|--|--|--|
| B.TechProgramme Coordinator | Admission of students; Syllabus; Monitoring of PO-CO mapping; Interaction with the B.Tech students in formal and non-formal way; Circulate the academic information; Co-ordination with Placement In-charge, Faculty, Mentor & HOD | Dr. Somak Jyoti Sahu Dr. BiswajitMandal |
| M.TechProgramme Coordinator | Admission of students; Syllabus; PO-CO mapping; Interaction with the M.Tech students in formal and non-formal way; Circulate the academic information; Co-ordination with Placement In-charge, Faculty, Mentor & HOD | Dr. Tapas Kumar Manna |
| Departmental Meeting Convener | Call the departmental meeting & Keeping the meeting minutes | Dr. BarnaliBej |
| Exam Coordinator | Coordinate; Schedule; Collection & submission of internal / external marks on date; Result analysis; Faculty tagging for question moderation / examination / subject tagging; Coordinate with B.Tech coordinator, M.Tech coordinator & HOD | Dr. Sutapa Roy Mrs. TanushreeGhosh |
| Feedback System | Structured feedback, Arrangement (Semester wise / Year wise), Review, Analysis, Documentation of feedback report (Student, Faculty, Parents and Alumni etc.), Student satisfaction survey | Dr. Somak Jyoti Sahu Dr. Sutapa Roy Dr. Lipika Das |
| Placement | Contacts; Arrangement; Record keeping; Coordination with Placement Cell & Industry; Coordinate with Poker, Mentor & HOD | Dr. Lipika Das Mrs. SonaliSamanta |
| Summer Training / Internship / Industrial Visit | Contacts / Arrangement / Record keeping / Recommendation; Internship report collection / Evaluation; Organize Industrial visit & report preparation; Coordinate with Mentor, Placement coordinator & HOD | Dr. BiswajitMandal Dr. Rabindranath Jana |
| Departmental Library | Coordination with Central Library / Records / Regulation of activities | Ms. AditiSinha Mr. Anupam Seth |
| Finance Management | Record of expenses & saving | Dr. Sunil BaranKuila Dr. BarnaliBej Mrs. SanchitaMaity |

| | | |
|--|--|--|
| Academic Council Coordinator | Conduct BOS meeting; Keeping record of BOS documents | Dr. Tapas Kumar Manna |
| | Preparation and keeping record of departmental Academic Audit Report; Preparation of Departmental Academic Audit Committee (DAAC) report | Dr. Somak Jyoti Sahu |
| | Preparation of Departmental Core Committee (DCC) report | Dr. Rabindranath Jana |
| Students Activities (Sports Activity / Cultural Activity / Achievements) | Record keeping Job / Higher Study / Competitive exam / any other achievement like awarded in co- curricular activities etc. | Ms. KekaRana |
| | Encouragement in sports; Keeping the related records; Prepared the students for annual pared | Ms. AditiSinha Mr. Sridam Das |
| | Cultural activity; Keeping the related records | Ms. AditiSinha |
| Departmental Magazine (ChemVoice) | Non-Technical Articles Editing / Collection / Management | Dr. Siddharth S. Boxi |
| | Technical Articles Editing / Collection / Management | Dr. BiswajitMandal |
| Wall Magazine (Excess Entropy) & Photography Club | Editing / Collection / Management | Ms. KekaRana Mrs. SonaliSamanta Mrs. TanushreeGhosh |
| Alumni Representative | Contacts / Record keeping / Arrange annual alumni meet / Coordination with Placement In-charge for placement information; Coordinate with institute alumni association | Dr. Somak Jyoti Sahu Dr. Lipika Das Mrs. SonaliSamanta |
| IQAC Representative | Initiate & Coordinate activities like Seminar, Workshop, Webinar, Community service, FDP, Staff development program, Lecture series etc.; Coordinate with institute IQAC | Dr. Siddharth S. Boxi Dr. BarnaliBej |
| News Bulletin / Brochure Prospectus / Year Book | Institutional publication representative; Preparation of Prospectus / Year Book etc. | Dr. BarnaliBej |
| | Preparation of News Bulletin / Banner / Brochure / Leaflet etc. | Dr. Rabindranath Jana |
| Research and Development | Record keeping all the ongoing and submitted project; List of projects and grand details (Sanction letter, UC etc.); PhD student details (with registration certificate, Award certificate, Thesis); External UG / PG summer & winter project details; Departmental research club activities; Coordinate with Supervisor; Coordinate with institute R&D cell | Dr. BiswajitMandal Dr. Siddhartha S. Boxi Dr. Sutapa Roy |

| | | |
|---|---|---|
| Departmental Activities Record | Record keeping of Seminar / Webinar / Workshop / QIP / Guest lecture / FDP / Community service etc. other activities organized by the Department | Dr. Siddharth S. Boxi Dr. BarnaliBej |
| Faculty Activities Record | Record keeping & up-gradation of publication (Research, Review, Book, Book Chapter etc.) database of the faculty members and students; Collect all the first page; Record keeping of FDP / Workshop / Short Term Course / Conference / Seminar / Webinar participated by the faculty; Record keeping of Faculty as Resource persons / Editorial board member / Professional society member; Collect all the certificates | Dr. Siddharth S. Boxi Dr. BarnaliBej |
| Media Development | Development / Up gradation / Maintenance of departmental website; Social media (Facebook, Youtube etc.) | Ms. KekaRana Mr. Sridam Das |
| Departmental Class Routine | Subject load distribution for each semester, Preparation of Time table for the classes of UG & PG. | Mrs. SonaliSamanta Ms. AditiSinha |
| National Service Scheme (NSS) | Institutional representative; Organizing events; Preparation of record keeping | Dr. Rabindranath Jana Ms. KekaRana |
| Maintenance of Instruments | Checking, Reporting the damage or malfunction; Initiate for repairing; Note sheet preparation; Coordinate with HOD | Dr. Rabindranath Jana Dr. Siddhartha S. Boxi Mr. PremjitKar Mr. Muktibrata Mishra Mr. Sridam das Mr. KashinathGiri |
| Stock verification Instruments / Chemicals | Semester wise verify the stocks / Record keeping / Coordinate with Procurement In charge for new procurement; Coordinate with HOD | Mr. PremjitKar Mr. Muktibrata Mishra Mrs. SanchitaMaity |
| Procurement of New Instruments / Chemicals | Initiate for procurements / Contacts / Compare; Coordinate with Purchase Officer / Registrar to pursuing the order; Keeping the records | Dr. Sunil BaranKuila Dr. Somak Jyoti Sahu Dr. BiswajitMandal |
| Student's Chapter Activities | Framing & Monitoring of Students activities under student's Chapter | Dr. Sunil BaranKuila Dr. Somak Jyoti Sahu Dr. BiswajitMandal |
| Departmental Maintenance | Coordinate with institute Engineering Cell / Estate for repair and maintenance | Mr. SwapanNayak |