

External Expert's Report (1st Part)

Name of the Department	Chemical Engineering
Name and address of the institution	IIT ISM Dhanbad
Dates of the visit	07/11/2022 and 08/11/2022
Name, designation, and affiliation of programme Expert	Professor, Department of Chemical Engg, IIT Delhi (Present: Director IIT Roorkee)

Score Sheet


1. Prof. Gouram Deb IIT Kanpur
 2. Prof. S. De IIT Kharagpur
 3. Prof. K.K. Pant IIT Delhi


- On each of the following parameters, a grading as per the given scale (1 = Poor, 2 = Average, 3 = Good, 4 = Very Good, 5 = Excellent).
- The Expert may choose any score in between 1 – 5.
- Attribute are indication for the areas of evaluation or assessment.
- Feedback (in terms of score) from the Experts will be shared with the Department without disclosing the identity of the Expert Member.

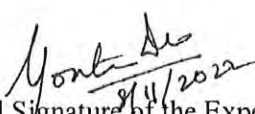
No.	Parameter	Attributers	Score Scale
1	Teaching programme	Regularity, methods, lecture plan, Syllabus, Teaching aids and Supplements, Reference materials, Pace of teaching, Mentoring/ Authoring, Numerical/ Analytical problems, Research (thesis/non-thesis) component, Scope for academic rehabilitation for weaker students, Pace of learning.	4
2	Academic curriculum	Breadth, Depth, Relevance to research/industry, contemporary/modern, logical progression, Number and variety of electives, innovative components, New/pioneering courses/ Flexibility in terms of minor/double major/dual degree.	4
3	Laboratory/experiments, Assignment and exercise	Design and quality of experiments, Relevance, Theory and introduction lectures, Level of student participation (hands-on training) Grading, Standard of machines/equipment, Model experiments, Report writing/submission mechanism, Evaluation process, Attendance level	4
4	Learning methodology aids	Books, Reference, Library, Slides, Tutor, Question Paper, Tutorials, Type of assignments, Computer/net/video library/web-based aids, Archives for reference, Aid for slow paced learning, Scope for improving communication skills.	4
5	Grading/ evaluation system	Realistic or irrational, Paper checking/sharing, Awareness Grading process and transparency, Record keeping, Uniformity (year to year; teacher to teacher), Assignment quality and frequency, Tutor support, Student feedback system, Stress on attendance	3
6	Faculty quality	Academic credentials, Teaching experience, Research output, Age/competence profile, Articulation, Thesis and project supervision records, Peer recognition and awards, National/International stature, Vision and Philosophy, Office and laboratory space management, Reputation among students/scholars/colleagues	4

Parameter	Attributers	Score Scale	
7	Research contribution	Quality, Quantity, Impact, Perception, Patent, Novelty, Standard of facility, Research plan/vision, Translational research, Creation of faculty company (start-up), industrial collaboration.	3
8	Sponsored Research	Quantum, Source and type of funding, Level of support provided to students and infrastructures, Uniqueness of facility created, Regularity and continuity, Creation of national facility	3
9	Industrial consultancy project/ EDP courses/ Outreach programmes	Quantum, source and type of funding, level of support provided to students and infrastructures, uniqueness of facility created.	3
10	Collaboration Within or Outside IIT(ISM) Dhanbad	Number, type and quality of collaboration with academia/R&D/ Industry at national or international level, Project funding (joint), Organization of meeting/conference, Joint supervision of students/ projects/ thesis, Special (executive) courses for industry Level and Impact of output from collaboration.	3
11	International Component and connection	Number/type/frequency of international students, scholars, Visitors and projects, Collaboration, Exchange program, international events organized, MoU/MoA, Foreign visits of IIT(ISM) students/scholars, faculty members, International Mobility/Projects/Fellowships.	4
12	Ambience/ Atmosphere in the department	Levels and effectiveness or collective initiatives, Publicity and information materials, Teacher-student relationship, Scholar-Supervisor relationship, Overall ambience of the department.	4
13	Infrastructure (General)	Classroom, Seminar halls, Laboratories, Workshops, Faculty offices, Research Scholar offices/space, Laboratory Safety	4
14	Student quality (UG/PG)	Academic background and progress, Level of motivation and interest in core subjects, Depth of understanding, Interests and hobbies, Discipline, Future ambition, Communication and comprehension skills, Degree of satisfaction about academic and extra-academic standards.	4
15	Student quality (PhD Scholar)	Level of understanding in core area, Exposure in core specialization, Quality and quantity of research output, Average time for PhD, Motivation and interest, Discipline, Articulation (Communication skill), Ambition, Awareness, National/International exposure, Leadership quality.	4
16	Employability of students and scholars	Companies, Statistics, Student or employer feedback, Salary/perks level, Pattern of employment or placement, Job distribution among UG/PG/PhD students, Relation between elective/training and employment, Relation between academic performance and employment.	3
17	Number, location, sector and professional success profile of alumni, Contribution	Number, location, sector and professional success profile of alumni, Contribution of alumni to his/her profession and society, Alumni-IIT(ISM) link/bond, Participation in or contribution to alma mater, Alumni feedback, Famous alumni and their profile.	3
18	Scientific or Engineering contribution to National/ Society	Quality of academic (non-degree) programs, Short courses, Training, Refresher courses, Societal projects, Large/mega project (product/process), Contribution to strategic sectors (Nuclear/Defence/Space/Energy), Partnership with industry (private/public sector), Quality and reputation of alumni, Academic contributions and impact (publications, book, patents, products).	3

No.	Parameter	Attributers	Score Scale
19	Overall Reputation and Standing (national)	General impression about this Department in the country (teaching, research, faculty, staff, students, alumni, research/academic output, peer recognition, technical expertise, infrastructure, Atmosphere and Vision	3
20	Overall Reputation and Standing (International)	General impression about this Department: Teaching, Research, Faculty, Staff, Students, Alumni, Research/Academic output, Peer recognition, Technical expertise Infrastructure, Atmosphere and Vision.	3
Overall feedback and suggestions		Please refer to the sheet attached	


 Sushanta Das
 8/11/22


 Ananta Das
 08/11/22


 Nanta Das
 8/11/2022
 Name and Signature of the Expert

Recommendation of the Review committee

1. Long term goal: (i) Organizing national / international seminars to increase the visibility of the Department; (ii) inviting PAC members of DST to know about how to write a good proposal for funding; (iii) increase intake of PhD and PDF students; (iv) enhance Departmental research infrastructure; (v) organizing specialized courses for the industries / academia
2. PhD intake should be increased.
3. Number of web courses (like NPTEL, MOOC, SWAYYM) should be increased. That would increase the visibility and outreach ability of the Department.
4. MS by research should also be started.
5. No of courses for PhD should be limited to maximum 4 instead of 10.
6. Only one minor is offered. Number of minors should be increased.
7. Staff strength should be increased.
8. More emphasis should be given to write textbooks and monographs.
9. (i) More research projects would be considered aiming at prototype development, deployment in industry/real field, practical test beds so that the interaction with stakeholders increases; (ii) More patents would be filed.
10. Some quantitative target should be fixed to achieve in next 5 years.
11. More participation of Departmental faculty with the existing / proposed Centers of Excellence of the Institute.
12. Lectures of Industrial Experts in every course should be organized.
13. If term paper and presentation are included in the major courses then there is no need of a separate course thereby reducing the faculty load.
14. Average batch size of 3-6 should be reduced to 2-3 in labs by replicating the instruments.
15. B. Tech project can be made optional.
16. Departmental research facility should be extended to every faculty / their students.
17. UG courses having weightage 3-1-0 should be 4-0-0.
18. Students should be made aware of the existence of different bodies, i.e., ombudsman person, ICC, student counselling, etc.
19. Space auditing in the Department should be done.

Suresh Kumar De
8/11/22

R. Venit
8/11/22

Yat De
8/11/22

Faculty Feedback

1. Number of PhD students should be increased.
2. Expert talks every month should be conducted.
3. Consumables and equipment fund from the Department are very less and should be increased.
4. Laboratory space for research is insufficient.
5. Collaboration with other institutes/labs should be increased.
6. Access to Common Departmental Research facility for all should be encouraged.
7. Subscription of vital journals, like, Journal of Fluid Mechanics, AIChE J., etc., should be taken up.
8. Details of the faculty candidates for the recruitment need to be shared among the existing faculties.
9. Institute initial research grant should be increased to 25 lakhs.
10. Faculty meetings are too long and too frequent. They should be of short duration not more than 30 minutes.
11. PC should be provided to new PhD students.
12. International travel grants to attend the conferences should be provided to PhD students.
13. Head must communicate to the faculties regarding the grants received from the institute.
14. Details of the IPDF applicants are not shared with the faculty members.
15. Departmental/Institute purchase procedure is too complex and needs to be simplified.
16. Faculty leave applications should be processed in proper time.
17. The communication between the Departmental / institute administration and the faculty should be improved.
18. The focus on Engineering aspects is less and more is on the Mining, Geology and Earth Science.
19. Communication during faculty meeting should be in common language, like, English.

Regarding Staff affairs

1. More Institute staff should be there. 4 more JTA should be appointed for UG labs.
2. They feel isolated from the mainstream of Chemical Engineering.
3. There should be a store keeper in the Department.
4. An additional member in the office is needed.
5. Few more computers for the Office should be supplied.
6. There should be payment for the contractual staff on the holidays.

Sudhendu De
8/11/22

Prasenjit
8/11/22

Yashu
8/11/22