CENTRE FOR ENVIRONMENTAL SCIENCE AND ENGINEERING

Subject: Executive Summary of Departmental Review of CESE on 22nd January 2014

1. The departmental review of CESE was held on 22nd January 2014. The review committee consisted of (i) Dr. Satish R. Wate, Director, National Environmental Engineering Research Institute, Nagpur, (ii) Dr. Mukesh Sharma, Professor, Department of Civil Engineering, IIT Kanpur and (iii) Dr. Ram Boojh, Programme Specialist (Natural Sciences), UNESCO, New Delhi.
2. Prof. Dikshit, Head (CESE) welcomed the DRC members and introduced all faculty members.
3. Prof. Dikshit gave a brief presentation on current academic programmes and activities of CESE in terms of (i) teaching activities (ii) research activities (iii) publications in journals and conferences, (iv) research and consultancy projects and (v) professional and outreach activities over five years from 2008 to 2012. CESE, at present, has 6 Professors, 1 Emeritus Fellow, 1 Adjunct Faculty, 3 Visiting Faculty and 5 Assistant Professors; 4 administrative staff and 4 technical staff; 24 M.Sc.-PhD students, 38 M.Tech. students, 42 PhD students and 6 project staff; 1 teaching lab, 1 computer cum GIS lab, 4 specialized instruments labs and 9 research labs. It is offering 44 courses out of which 15 are UG courses, 22 theory, 6 lab courses, 7 minors and 9 courses open to other departments. Over 2008-2012, there were 4 books, 135 (3/faculty/year) publications in journals and 181 (4/faculty/year) in conferences; the citations were 2671 as in Scopus with corresponding 59 citations/faculty/year; Department got 63 research projects amounting to Rs. 560 lakhs and 41 consultancy projects worth Rs. 525 lakhs. Thus, department handled about 20 external projects/year with average budget of Rs. 2.15 Crore/year. About 60% of students registered for placements got jobs through campus interviews.
4. Next, the interaction with faculty members was planned. Recent contributions in terms of projects of social relevance and national importance in important research areas of (i) water treatment, (ii) wastewater treatment, (iii) solid and hazardous waste management, (iv) air quality and aerosols, (v) environmental microbiology and biotechnology, (vi) environment management and (viii) environmental systems modelling were presented by various faculty members.

5. After lunch, committee paid visits to (i) teaching lab, (ii) computer lab, and (iii) nine faculty research labs and (iv) four instruments labs. Committee saw the ongoing research works of various post graduate and research scholars during the lab visits. Next, the committee interacted with (i) undergraduate MSc students, (ii) M.Tech. students and finally with (iii) PhD students in the seminar hall. Various students were asked several queries in order to assess the quality of teaching and research in terms of parameters in the review format.
6. Next one hour was spent by the committee in preparing the review report. The review committee was impressed with the performance of CESE in terms of teaching, research, consultancy and professional activities and awarded very high average of 8.5 for most parameters. The courses of studies were found to be up to the mark and matched with present needs and at par with any world level institute. Present electives were too few. Core courses may be reduced to increase electives. In the third semester of M.Tech., no course load should be there. The teaching and research labs were reasonably well equipped but there were clear signs of being too small and hence cramped. There is a need of more instruments to improve the quality of research infrastructure. The committee felt lack of space for seating of research scholars. There is need for separate labs for undergraduate, graduate and research scholars. There is urgent need of strengthening ecology and air pollution areas, hence more faculty should be recruited in these specializations.
7. The day ended with thanks to DRC members.
8. As a follow up, the action plans proposed to be adopted are (i) Huge Infrastructure development: need more space for research labs, separate labs for UG level students, desk spaces for graduate students and research scholars, multiple conference rooms, departmental library and online resources. There is a need of more instruments to improve the quality of research infrastructure. (ii) Less core and more electives: A minimum of 4 to 5 electives should be made available. (iii) Areas such as ecology and air pollution need to be strengthened in terms faculty presence. (iv) Doctoral level advanced courses could be introduced keeping in students coming from various backgrounds outside IIT system.