

Department of Chemistry
Internal Academic Audit Report 2022-23

1. **Academic:** The Department of Chemistry at Miranda House, University of Delhi, is committed to providing a rich and inclusive teaching-learning environment during the academic year 2022-23. The Department of Chemistry has a dedicated faculty, hardworking non-teaching staff, and well-equipped laboratories in addition to a substantial book collection in its departmental library. Over the recent years, the department's examination results for graduating students have improved substantially. The Department is taking advantage of the increased global interest in undergraduate research and is taking part in several intra- and inter-disciplinary research projects. Participation in DSKC summer internships, DBT Star College projects, and projects supported by DBT, DST, and UGC are a few examples. In addition, a few Ph.D. research scholars are also working in the chemistry department's research labs. In the past few years, the Department has offered an add-on course in Nanochemistry which was a huge success.

The following steps have been taken to ensure academic excellence:

a. Curriculum Enhancement:

Revision of Curriculum: The department reviewed the revised curriculum according to NEP. In keeping with the goals of 'The National Education Policy', the Department of Chemistry is offering a variety of Skill-Enhancement and Value-Added Courses to students.

b. Pedagogical Innovations:

- **Inclusive Teaching Methods:** Faculty members have been encouraged to use inclusive teaching methods such as flipped classrooms, peer teaching, and collaborative learning to cater to diverse learning styles.
- **Accessible Resources:** We have ensured that all course materials, including lecture notes and readings, are accessible to students with disabilities.

c. Student Support:

- **Mentorship Programs:** The department introduced mentorship programs to provide academic and emotional support to students, particularly those from marginalized backgrounds.
- **Counseling Services:** We offer counseling services to address the academic and personal concerns of students, ensuring their holistic development.

2. **Co-curricular:** In addition to academic excellence, we focus on the holistic development of our students through co-curricular activities:

- **Student activities:** We plan to establish chemistry clubs and societies that organize workshops, seminars, and outreach programs to foster a sense of community and scientific curiosity.
- **Inclusive Events:** All co-curricular events are designed to be inclusive, accommodating diverse interests and abilities.

For the past few years, the department has hosted the annual IUPAC Global Women's Breakfast Event – which also celebrates the International Day of Women and Girls in Science. This year the event was held on 14 & 15 February 2023. Rasayanika, The Chemical Society, organised 'The Inter-college Chemistry Festival, Pratikriya 2023 on 3 April 2023. Professor Ashok Kumar Ganguli from IIT Delhi delivered the inaugural lecture for this event. An 'IPR Awareness Programme' was held by the Department in collaboration with 'National Intellectual Property Awareness Mission' on 5 & 6 June 2023 where Mrs. N. Kumutha from IIT Patna shared her thoughts.

3. Challenges Faced:

I **Mental Health Concerns:** The pandemic has led to increased stress and mental health challenges among students, affecting their academic performance.

I **Digital Divide:** While striving for inclusivity, we have faced certain challenges during the academic year 2022-23, the transition to online learning exposed the digital divide among students. Some lacked access to the necessary technology for online classes.

I **Lack of funding:** Due to the high-class strengths and lack of funding (to buy chemicals, glassware, and equipment needed), students often work in groups. However, by emphasizing peer learning, which has many benefits, we attempt to turn this weakness into a strength. Furthermore, the environmental benefits from group labor include using fewer chemicals and generating less waste. By recovering and reusing chemicals whenever possible and lowering water usage in the lab, every effort is taken to minimize waste.

I Motivating students to pursue higher education and careers in the sciences is a challenge. Another challenge lies in designing and carrying out 'green' or "eco-friendly" experiments, in keeping with the millennium goal of sustainable development while working within the prescribed format.

4. **Future Plans:** To overcome these challenges and continue improving our inclusive teaching-learning environment, we have formulated the following plans:

- **Focus on research:** The Department of Chemistry will continue to pursue excellence in supporting and mentoring student research and make significant contributions to the college's corporate life.
- **Add-on Course:** In addition to the regular courses, the Department of Chemistry is also planning to start a Certificate Course in Waste Management.
- **Setting up Effluent Treatment Plant:** The Department of Chemistry is planning to set up its own 'Effluent Treatment Plant' for the treatment and safe handling of the chemical waste generated in laboratories during practical classes.
- **Digital Inclusion:** We aim to bridge the digital divide by providing laptops or devices to students in need and expanding our Wi-Fi infrastructure.
- **Mental Health Support:** We will strengthen our mental health support services by collaborating with professional counselors and organizing workshops on stress management.
- **Diversity and Inclusion Workshops:** Faculty will undergo training in diversity and inclusion to create an even more welcoming and supportive environment for all students.
- **Community Engagement:** We plan to increase our community engagement activities to promote science and chemistry in the wider community, encouraging students to see the real-world impact of their studies.

In conclusion, the Department of Chemistry at Miranda House remains dedicated to providing an inclusive teaching-learning environment that fosters academic excellence, co-curricular engagement, and personal growth. We are committed to addressing challenges and continuously improving to meet the evolving needs of our diverse student body in the academic year 2022-23 and beyond.