

STRATEGIC PLAN

(2020-2025)



Department of Environmental Science and Engineering
J.C. BOSE UNIVERSITY OF SCIENCE AND TECHNOLOGY
YMCA, FARIDABAD

(Formerly YMCA University of Science and Technology)

NAAC 'A' Grade accredited State University

Sector-06, Delhi Mathura Road, Faridabad -121006 (Haryana)

ABOUT THE DEPARTMENT

The Department of Environmental Sciences at J.C. Bose University of Science and Technology YMCA Faridabad was established in 2018 by offering two years post-graduate program M.Sc. Environmental Sciences and Ph.D. program in Environmental Sciences. Since 2016, both the programs were part of Department of Humanities and Sciences. The Department is committed to provide the quality education in the area of Environmental Sciences to transform students into post-graduates with high professional skills and values.

Presently, the department has five regular faculty members. It has necessary infrastructure, and facilities required for postgraduate courses in Environmental Sciences. The department also caters to teaching the Mandatory Subject Environmental Sciences to all UG programs of the university.

The department is engaged in various research projects and provides consultancy services to the environment sector. The academic curriculum is industry/research focused delivered by well-qualified, competent, research-oriented and experienced faculty members and experts from industry. Besides this, the department is playing an active role in developing a sustainable society by organizing various environmental awareness programs at local and national level. With continuous development and expansion of its scientific/research infrastructure and academic faculty, the department aims to become one of the leading departments of the University and the nation in future.

VISION

“A department that can effectively harness its multidisciplinary strength by imparting in-depth knowledge of scientific, technical, legal and social aspects of environment to produce technologically adept Environmental engineers, post-graduates and researchers, that can address emerging challenges to sustainability for the betterment of society.”

MISSION

- To impart training for capacity building to tackle various Environmental challenges in a sustainable manner.
- To provide holistic education to develop Environment leaders, policy makers and solution seekers.
- To provide interdisciplinary and transformative research in the field of Environmental Science & Engineering.
- To provide technological exposure to the students through industrial training programs.

- To promote outreach activities for public awareness and societal benefit.

STRATEGIC GOALS

- Providing education at par with the global standards.
- Identifying and carrying out research in the local thrust areas of Environmental Science.
- Providing exposure to the latest technologies and Environmental Management practices.
- Collaborating with industries/ organisations/institutions for dissemination of knowledge and keeping abreast with the industry requirement to improve employability.
- Sensitising different segments of society to sound environmental practices that will create sustainable behaviour to protect and preserve the components of the environment.

MSC ENVIRONMENTAL SCIENCES PROGRAMME OBJECTIVE

- To create and disseminate knowledge to the students about environmental problems at local, regional and global scale.
- To sensitize students towards environmental concerns and issues, and make them able to apply their knowledge for sustainable development.
- To provide intensive practical training on modern instrumentation and analytical techniques for environmental analyses.
- To orient the students towards efficient environmental decision-making and management.
- To develop understanding about the impacts of climate change and related mitigation strategies.
- To prepare students for successful careers in education, research, industries, consultancy, regulatory agencies, boards and departments, etc.

MSC ENVIRONMENTAL SCIENCES PROGRAMME OUTCOMES

After completion of the program, the students have:

- Acquired fundamental knowledge and understanding of different aspects of environment.
- Become aware of the local, regional and global environmental problems and acquired the knowledge and skills needed for the environmental management.
- Developed environmental monitoring skills, including design and conduct of experiments and data analysis.
- Obtained exposure to the environmental pollution control technologies.

- Become aware of the environmental policies, legislation and regulations.
- Acquired skills in the preparation, planning and implementation of environmental projects and obtaining first-hand experience of working in the environmental projects.

SWOC ANALYSIS

STRENGTHS

- Motivated, qualified and research-oriented Faculty members with diverse specialization.
- Well-designed curriculum in which the Dept. offered Open Elective, audit course, Foundation Courses, Practical lab and industrial training/project work to the students.
- Excellent research outcome includes as research articles, publication, books/book chapter in reputed international publisher.
- Holistic personality development of students with multiple activities and programmes on regular basis

WEAKNESS

- Limited space of the Department/ Lack of separate building for the Dept. which acts as road- block for further expansion of the department.
- Lack of Advanced Lab with latest equipment/ facilities/ high- end computers with latest software's.
- Lack of industrial linkages and consultancy work.
- Post-doctoral research culture should be promoted.
- Advanced instrumentation facility of the Department needs to be developed.

OPPORTUNITIES

- To develop the department as a Centre of Excellence for quality teaching and research activities to produce dynamic and knowledgeable human resources.
- Leveraging the alumni network of the department to enhance placements of the students.
- To build-up the interdisciplinary and collaborative research group with other organization.
- Ensuring Tie- ups with leading Organizations for practical training and skill updating of the students.

CHALLENGES

- Creation of teaching job opportunities by ensuring the meaningful teaching of compulsory subject of environmental studies in UG courses by NET qualified/Ph.D. Environmental sciences candidates.
- To provide more opportunities for career placements for the students.
- To create more funding for infrastructure development and expansion of the department.

ACTION TO BE TAKEN YEAR WISE (2020-25)

2020-21

- Implementation of CBCS effectively on providing more opportunities with choice base elective courses and strengthening of the teaching staff will be a continuous effort.
- Development and effective implementation of LOCF approach in the offered programmes
- Continuous improvement in the Teaching and Learning mythologies for providing value added education
- Gradual involvement of ICT based Teaching and Learning practices through lesson preparation in ppt format, involvement of animated video and other relevant tools.
- Efforts to fetch grants from different funding agencies like DST, DBT, UGC, HSCST and various central/ state government organisations for development of research activities.
- Initiation of consultancy services to cater the needs of industries and development of Public-Private-Partnership (PPP) model.
- Introduction of new UG programme in the department for employability.
- Frequent organization of different educational programme including seminars/conferences, short term course, value-added courses, training programs, extension lectures etc. to improve knowledge and skills.
- Sensitizing society with various social outreach programme under the umbrella of Vasundhara Eco-Club to attain sustainable development.

2021-22

- Development of revised scheme and course curriculum to impart studies in the latest international trends and research to cover wider scopes.
- Strengthening lab infrastructure and systems with introduction of new and advanced instruments.

- Improved the research facilities and standard through research projects funded by various agencies.
- Establishment of linkage with the industries to train students to cater the present needs.
- Offering opportunities for the international students to acquire knowledge with the existing programmes.
- Enhancing efforts to organize at least one seminar/symposia/conference/value-added courses in the academic year.
- Mobilising the community towards improvement of environmental quality with social outreach programme.

2022-23

- Establishment of thrust areas of research in cognition with local environmental issues and their possible solutions for meaningful R&D.
- Establishment of linkages with institutions for student exchange, training and research.
- Development of advanced instrumentation lab facilities with the improved instrumentation techniques.
- Development of cohort in the surrounding region for long term assessment of environmental issues and their solution.
- Reviewing and improvement of pedagogy for direct teaching-learning.
- Ensure social participation for better environment and sustainability through community-based programs.
- Organisation of field trip/excursion tour for the students.

2023-2024

- Strengthening the curriculum with more elective courses for providing adequate options to get choice-based valued education.
- Interaction of students with the local community to identify key environmental problem areas and thereafter designing a research remediation plan to enhance the practical applicability of research.
- Organisation of short-term training programmes to enhance employability.
- Establishment of institutional solid waste management facility to impart practical knowledge and create research facility.
- Enhancing efforts to organize at least one seminar/symposia/conference/value-added courses in the academic year.

2024-25

- Introduction of UG Diploma programme on Environmental and Occupational Health for employability.
- Efforts to fetch grants from different funding agencies like DST, DBT, UGC, HSCST and various central/ state government organisations for development of research activities.
- Establishment of NABL accredited laboratory to develop facility for the industrial section.
- Establish international collaboration with International Institutes and Universities (MOU) for research and education in areas of mutual interest, through reciprocal arrangements for faculty and research scholars.
- Fostering socially desirable values in the students.