

Report on
Certificate courses in ‘Waste Optimization Professional’ under Green Skill Development Programme (GSDP) of Ministry of Environmental, Forest and Climate Change, Government of India at Integral University, Lucknow”

organized by

Department of Environmental Science & Integral Institute of Agriculture Science & Technology, Integral University, Lucknow

The Six Week Certificate Course in ‘Waste Optimization Professional’ under the Green Skill Development Programme (GSDP) of Ministry of Environmental, Forest and Climate Change, Government of India was inaugurated at Integral University, Lucknow. The event was organized by the Department of Environmental Science & Integral Institute of Agriculture Science & Technology Under the aegis of The Energy and Resources Institute (TERI), emphasized empowering individuals with skills for effective waste management and environmental sustainability.

30 students belonging to schedule caste category as a mandate criteria of Ministry of Environmental, Forest and Climate Change, Government of India were selected and enrolled for this certificate course.

The Inaugural session of the Six Week Certificate Course in ‘Waste Optimization Professional’ under the Green Skill Development Programme (GSDP) at Integral University, Lucknow, commenced with a floral welcome for the esteemed guests. Professor Saba Siddiqui, Head of the Integral Institute of Agriculture Science & Technology, delivered the welcome address, highlighting the significance of waste management education. Dr. Ambrina Sardar Khan, Head, Department of Environmental Science, provided an introduction to the event, outlining its objectives and the course structure. Prof. Abdul Rahman Khan, Dean of Science, addressed the gathering, emphasizing the role of scientific knowledge in sustainable waste management. Ms. Pallavi Shukla, Senior Programme Officer at TERI-EIACP, spoke on the broader impact of the Green Skill Development Programme and the necessity of skilled professionals in the environmental sector. The session concluded with a vote of thanks by Dr. Syed Saema, Assistant Professor, Department of Environmental Science, expresses gratitude to all participants, organizers, and resource persons for their commitment to the success of the program. The inauguration set a positive tone for the Six Week Certificate Course, reflecting Integral University's dedication to fostering green skills and environmental stewardship.

Week 1: Introduction and Fundamentals

In the first week, participants were introduced to the course structure and objectives, focusing on the basics of waste optimization. The inaugural session included a case study presentation and the opening ceremony, setting the stage for the six-week program. Sessions covered personality development, communication skills, and gender studies, emphasizing the importance of these skills in waste management. Subsequent days provided foundational knowledge on the basics of waste management, environmental impacts, and relevant policies

and regulations. The sessions were conducted by experts from TERI and Faculty of Integral University, combining theoretical lectures with practical exercises to ensure a solid understanding of waste optimization principles.

Ms. Pallavi TERI	Case study presentation; Inauguration of Training	Introduction	Pallavi, TERI	Personality Development and communication skills	Theory
Ms. Pallavi, TERI	Personality Development and communication skills	Theory	Pallavi, TERI	Gender studies	Theory
Dr. Amina Jafri, EVS Department, Integral University	Introduction to Solid Waste Management	Theory	Dr. Amina Jafri, EVS Department, Integral University	Introduction to Solid Waste Management	Theory
Dr. Azram Tahoor EVS Department, Integral University	Assessment				

Week 2: Waste Characterization and Segregation

The second week focused on teaching participants methods for characterizing different types of waste and demonstrating effective techniques for waste segregation. Practical sessions involved hands-on activities where participants sorted and categorized waste, enhancing their understanding of waste properties and segregation best practices. Interactive discussions facilitated group learning and the sharing of insights on various waste types. Following were the Experts who guided these sessions, ensuring participants gained practical skills in waste characterization and segregation.

Dr. Prateek Srivastava (Associate Prof.) Allahabad University	Types and composition of solid waste	Theory	Dr. Syed Saema, EVS Department, Integral University	Types and composition of solid waste	Theory
Dr. Rahila Rahman Khan, EVS Department, Integral University	Solid waste collection	Practical	Dr. Rahila Rahman Khan EVS Department, Integral University	Collection, transfer and transport of solid waste	Theory
Holiday					
Dr. Durgesh Tripathi, Amity University, Noida	Separation and processing of solid waste	Theory	Dr. Shweta Yadav, EVS Department, Integral University	Separation and processing of solid waste	Practical
Dr. Mohammad Usama, EVS Department, Integral University	Types of material recovery facility	Theory	Dr. Mohammad Usama, EVS Department, Integral University	Types of material recovery facility	Practical
Dr. Mariya Hasnat EVS Department, Integral University	Assessment				

Week 3: Recycling and Resource Recovery

Week three delved into the principles and importance of recycling and resource recovery from waste. Participants engaged in hands-on training on recycling processes, including the recycling of paper, plastics, metals, and electronic waste. Field visits to local recycling facilities provided real-world insights into recycling operations. These activities were designed to equip participants with practical skills in managing recycling processes. Industry professionals and academic experts led the sessions, offering valuable perspectives and expertise in recycling and resource recovery.

Dr. Laiq ur Rahman, Chief Scientist, CSIR-CIMAP, Lko.	Solid waste composting	Theory	Dr. Malik Mobeen Ahmad (Associate Professor) IIAST	Composting technologies	Theory
Mr. Nadeem Khan (Asst. Prof),IIAST	Composting technologies	Practical	Dr. Syed Saema, EVS Department, Integral University	Waste to energy	Theory
Dr. Anand Misra, EVS Department, Integral University	Incineration	Practical	Dr. Anand Misra, EVS Department, Integral University	Incineration	Practical
Dr. Ambrina Head EVS Department, Integral University	Types of Landfill	Theory	Dr. Ambrina Head EVS Department, Integral University	Landfill control and treatment	Practical
Dr. Mohammad Usama, EVS Department, Integral University	Waste and climate change	Theory	Dr. Kashif Khan, EVS Department, Integral University	Construction and demolition waste	Theory
Dr. Rushda Sharf EVS Department, Integral University	Assessment				
Shramik Bharti	weekly assessment		Dr. Azram, Dr. Mariya, EVS Department, Integral University		

Week 4: Waste Treatment Technologies

The fourth week provided an overview of various waste treatment technologies, covering both biological and chemical treatment methods. Demonstrations included composting, biogas production, and other biological treatments, offering hands-on experience with sustainable waste treatment technologies. Lab sessions focused on chemical treatment techniques, such as incineration and chemical recycling. Environmental scientists and engineers facilitated these sessions, ensuring participants understood the technical aspects of different waste treatment technologies and their applications.

Dr. Amina Jafri , EVS Department, Integral University	Construction and demolition waste	Theory	Dr. Amina	Components of Construction and demolition waste	Practical
Dr. Rahila Rahman Khan, EVS Department, Integral University	Implementation of Construction and demolition (C & D) waste system	Theory	Dr. Rahila Rahman Khan, EVS Department, Integral University	Implementation of Construction and demolition waste system	Practical
Dr. Shweta Yadav, EVS Department, Integral University	Inventorisation of (C & D) waste system	Practical	Dr. Shweta Yadav, EVS Department, Integral University	Collection, transportation and disposal of C & D waste	Practical
Dr. Amina Jafri, EVS Department, Integral University	Monitoring & Supporting Policies/ Best practices in India	Practical	Dr. Amina Jafri, EVS Department, Integral University	Introduction of E-Waste Management	Theory
Dr. Ambrina Sardar Khan, Head, EVS Department, Integral University	Guidelines for E-waste assessment	Theory	Dr. Ambrina sardar Khan, EVS Department, Integral University	Sampling techniques	Practical
Dr. Swati Maurya, EVS Department, Integral University	Assessment				

Week 5: Waste Management Practices

In week five, participants were introduced to best practices in waste management through the analysis of successful case studies. Group projects involved developing comprehensive waste management plans for different scenarios, allowing participants to apply their theoretical knowledge in practical situations. Presentations on detailed case studies of successful waste management systems globally provided additional learning opportunities.

Dr. Ambrina Sardar Khan, Head, EVS Department, Integral University	Laws, regulation and policies on e- waste	Practical	Dr. Ambrina Sardar Khan, Head, EVS Department, Integral University	Technologies for e-waste management	Theory
Dr. Syed Saema, EVS Department, Integral University	E-waste treatment systems	Theory	Dr. Syed Saema, EVS Department, Integral University	What is biomedical waste	Theory
Dr. Mohammad Usama, EVS Department, Integral University	Plastic waste management	Theory	Dr. Mohammad Usama, EVS Department, Integral University	Treatment of plastic waste/biomedical waste	Practical
Dr. Salman Ahmad (Associate Prof.), IAST	GIS	Theory	Dr. Sudhakar Shukla, Sc. SE& Head of Geoinformatics, Remote Sensing & Application Centre, Lucknow	GIS	Practical

Dr. Mustafa Hussain (Associate Prof.), IIAST	E commerce	Practical	Dr. Usman Sayeed (Associate Prof.), IIAST	Basics of computer	Practical
Mr. Vaibhav, Director, Lucknow Centre for Excellence	Basics of computer	Practical	Mr. Vaibhav Tripathi, Director, Lucknow Centre for Excellence	Basics of computer	Practical

Week 6: Sustainable Waste Management and Future Trends

The final week focused on sustainable practices in waste management and explored emerging trends and future technologies in waste optimization. Interactive discussions covered topics such as lifecycle assessment, zero waste approaches, and circular economy concepts, emphasizing the importance of sustainability in waste management. Trend analysis sessions explored the latest advancements and future directions in waste management technologies. Visionaries and leading experts in environmental science and sustainability guided these discussions, helping participants understand the future landscape of waste management and how to integrate sustainable practices into their work.

Dr.. Azram, Dr. Mariya & Dr. Nadeem	Final Exam	Practical	Dr.. Azram & Dr.. Mariya	Industry Meet	Practical
Dr. Rushda Rahman Khan & Dr.. Syed Saema	Awareness programme	Practical			

The valedictory session was marked by a series of distinguished addresses and presentations. The session began with a floral welcome, followed by a warm welcome address delivered by Dr. Ambrina Sardar Khan, Head, Department Environmental Science. Dr. Syed Saema, Assistant Professor, Department of Environmental Science (Nodal Officer of GSDP), presented a brief report highlighting the course's achievements and key takeaways. Prof. Abdul Rahman Khan, Dean of Science, addressed the gathering, emphasizing the importance of continued learning and application of waste management practices. P K Bhattacharya, Director of the Knowledge Management Division at TERI, New Delhi, provided valuable insights into the broader implications of the program and its alignment with national environmental goals. The session concluded with a heartfelt vote of thanks by Professor Saba Siddiqui, Head of the Department of Agriculture at the Integral Institute of Agriculture Science & Technology, expressing gratitude to all participants, organizers, and resource persons for their contributions to the successful completion of the course.

Glimpse of Event: <https://youtu.be/Neq4FyQzloY>



Fig.1 Glimpse of Interview



Fig. 2 Inaugural day

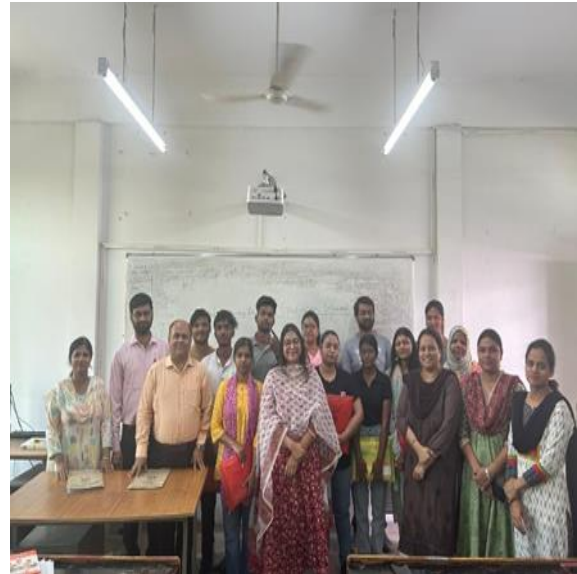


Fig.3 Distribution of Kits to the participants





Fig. 4 Theory classes taken by the faculties for better understanding on the topics



Fig.5 Theory and practical session during the training programme

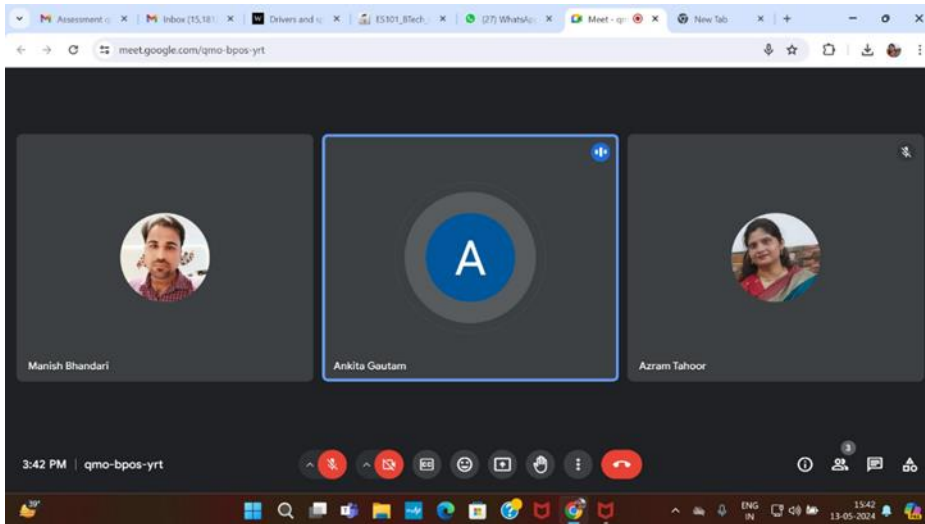


Fig.6 Conduction of Industry meet via on-line mode



Fig.7 Participants receiving the certificate Senior director Dr. P. K. Bhattacharya, Prof. Abdul Rahman (Dean of faculty Science, IUL), Dr. Ambrina Sardar Khan (Head, Department of Environmental Science, IUL)



Fig.8 Photo of the validictory

List of Participants

S.No.	Name of Participants
1.	Neha Gautam
2.	Arpit Verma
3.	Ankita Gautam
4.	Sanjana Verma
5.	Amrita
6.	Pratham Kumar Patil
7.	Dipanshi Kumari
8.	Aman Kumar
9.	Akansha Patrey
10.	Versha Kumari
11.	Pooja Bansal
12.	Anupam Saroj
13.	Bajrangji Kumar
14.	Saurav Singh
15.	Satya Prakash
16.	Km. Sujata Kannaujia
17.	Ishika Anand
18.	Neelam Rawat
19.	Antima Rawat
20.	Sarvagya Singh
21.	Krishna Anand Balmiki
22.	Pavan Kumar
23.	Suresh Kumar Sonkar
24.	Sandeep Kumar
25.	Shivakant Rawat
26.	Rohit Kumar
27.	Karan Rawat
28.	Mukesh Kumar
29.	Rakesh Kumar
30.	Suraj Sonkar

Glimpse of Event: <https://youtu.be/Neq4FyQzloY>