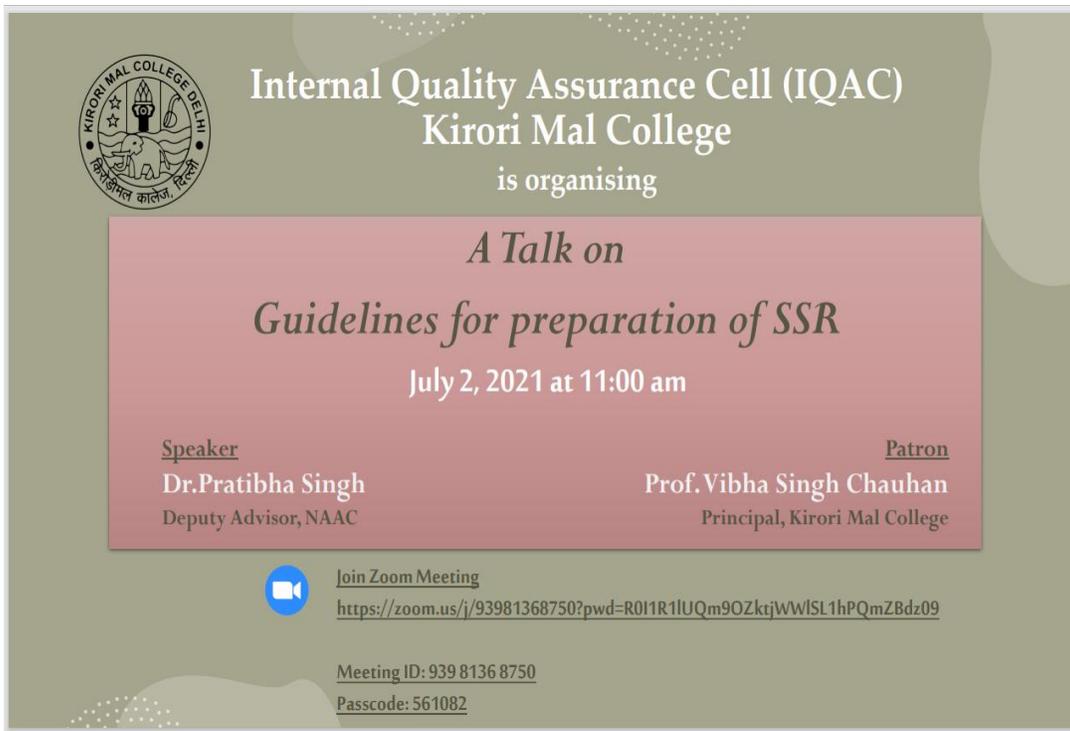


**The Report of Activities of IQAC, Kirori Mal College, D.U.  
(2021-2022)**

**The Webinar on Guidelines for preparation of SSR**

A webinar on guidelines for preparation of SSR was organized by Internal Quality Assurance Cell (IQAC), Kirori College, University of Delhi Delhi-110007 on 2<sup>nd</sup> July, 2021. Dr. Pratibha Singh, Deputy Advisor, NAAC was the key speaker. The program was started with welcome address by the Principal, Prof. Vibha Singh Chauhan and the talk was begun with introduction of Dr. Pratibha Singh, Deputy Advisor, NAAC by Dr. M. Ramananda Singh, Coordinator, IQAC. The introduction of NAAC and its importance was highlighted by the speaker, Dr. Pratibha Singh in the beginning of her lecture. The details of guidelines with various criteria and its weightage were discussed in the talk. The preparation of SSR in terms of criteria-wise and how online submission to be done was properly elaborated in the webinar. The program was ended with vote of thanks to Dr. Pratibha Singh for her very informative talk and her valuable time by Dr. Anshu, Former Coordinator, IQAC.



The poster features the Kirori Mal College logo on the left, which includes a lamp and an open book. The text is centered and reads: 'Internal Quality Assurance Cell (IQAC) Kirori Mal College is organising A Talk on Guidelines for preparation of SSR July 2, 2021 at 11:00 am'. Below this, the speaker and patron are listed: 'Speaker: Dr. Pratibha Singh, Deputy Advisor, NAAC' and 'Patron: Prof. Vibha Singh Chauhan, Principal, Kirori Mal College'. At the bottom, there is a Zoom meeting link: 'Join Zoom Meeting https://zoom.us/j/93981368750?pwd=R01R1lUQm9OZktjWWVSL1hPQmZBdz09', the meeting ID '939 8136 8750', and the passcode '561082'.

 **Internal Quality Assurance Cell (IQAC)**  
**Kirori Mal College**  
is organising

*A Talk on*  
*Guidelines for preparation of SSR*  
July 2, 2021 at 11:00 am

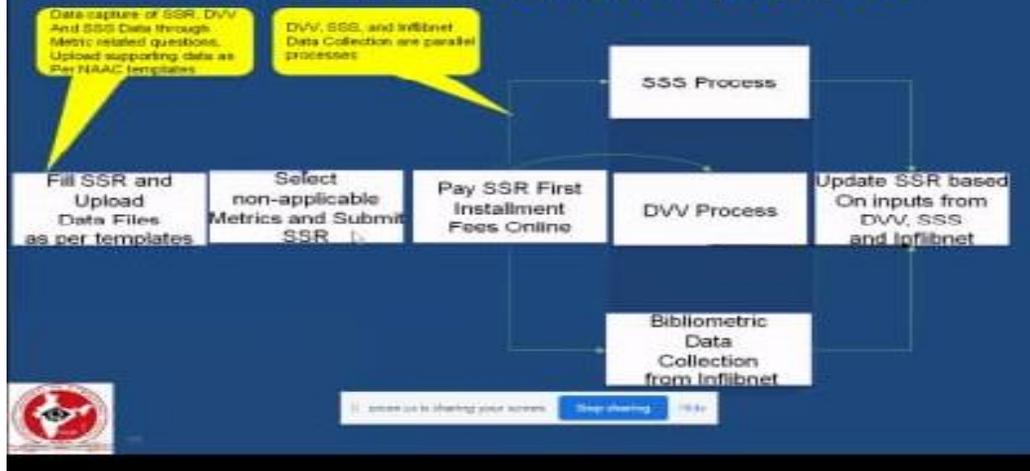
<u>Speaker</u> <b>Dr. Pratibha Singh</b> Deputy Advisor, NAAC	<u>Patron</u> <b>Prof. Vibha Singh Chauhan</b> Principal, Kirori Mal College
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 Join Zoom Meeting  
<https://zoom.us/j/93981368750?pwd=R01R1lUQm9OZktjWWVSL1hPQmZBdz09>

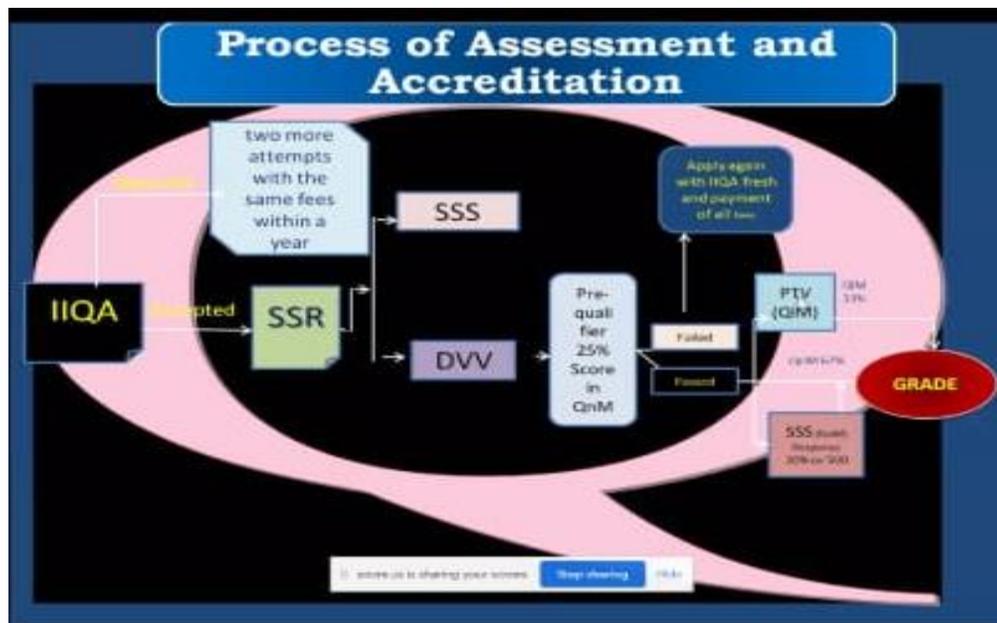
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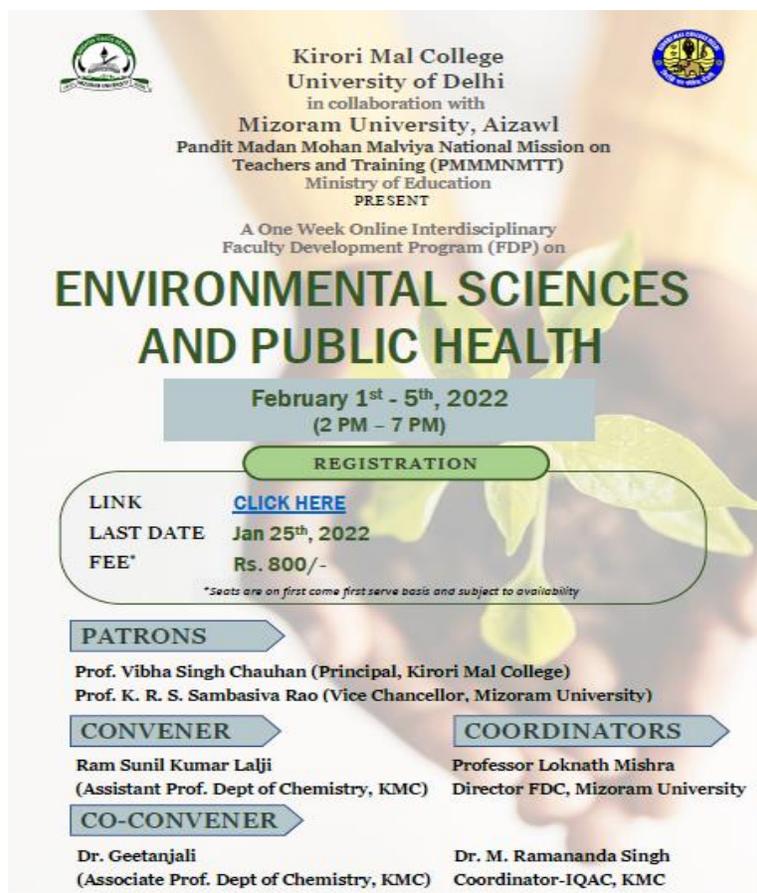
# SSR Submission Process



# Process of Assessment and Accreditation



**ONE-WEEK ONLINE INTERDISCIPLINARY FACULTY DEVELOPMENT PROGRAM ON  
“ENVIRONMENTAL SCIENCES AND PUBLIC HEALTH”  
(February 01 - Feb 05, 2022)**



**Kirori Mal College**  
**University of Delhi**  
in collaboration with  
**Mizoram University, Aizawl**  
**Pandit Madan Mohan Malviya National Mission on**  
**Teachers and Training (PMMMNTT)**  
**Ministry of Education**  
**PRESENT**

A One Week Online Interdisciplinary  
Faculty Development Program (FDP) on

## **ENVIRONMENTAL SCIENCES AND PUBLIC HEALTH**

**February 1<sup>st</sup> - 5<sup>th</sup>, 2022**  
(2 PM – 7 PM)

**REGISTRATION**

LINK [CLICK HERE](#)  
LAST DATE **Jan 25<sup>th</sup>, 2022**  
FEE\* **Rs. 800/-**

\*Seats are on first come first serve basis and subject to availability

**PATRONS**

Prof. Vibha Singh Chauhan (Principal, Kirori Mal College)  
Prof. K. R. S. Sambasiva Rao (Vice Chancellor, Mizoram University)

**CONVENER**

Ram Sunil Kumar Lalji  
(Assistant Prof. Dept of Chemistry, KMC)

**COORDINATORS**

Professor Loknath Mishra  
Director FDC, Mizoram University

**CO-CONVENER**

Dr. Geetanjali  
(Associate Prof. Dept of Chemistry, KMC)

Dr. M. Ramananda Singh  
Coordinator-IQAC, KMC

This one-week Faculty Development Program (FDP) was organized by Department of Chemistry and IQAC of Kirori Mal College, University of Delhi in collaboration with Mizoram University, Aizawl Pandit Madan Mohan Malviya National Mission on Teachers and Training (PMMMNTT) Ministry of Education. The FDP addresses the various aspects of environmental sciences and public health to enhance the effective teaching-learning pedagogy among the participants across the world. 94 participants were registered for this programme from all over the world. This FDP consists of 15 sessions of 90 minutes duration each for 5 days accompanied with interesting quizzes and assignments.

**DAY 1 (February 01, 2022):**

This FDP was inaugurated by the esteemed Principal, Prof. Vibha Singh Chauhan, Kirori Mal College, University of Delhi. In his inaugural address, Prof. Chauhan elaborated about the program and appreciated the convenors and co-convenors of the program for organizing this FDP. Afterwards, Dr. Ram Sunil Kumar Lalji, Convenor FDP briefed about the Kirori Mal college, rules, regulations and overall schedule of the FDP. This FDP has been organized under the aegis of the Pandit Madan Mohan Malviya National Mission on Teachers and Teaching Program, Ministry of Education, Government of India. Inaugural session was concluded by Prof. Lokanath Mishra, Mizoram University who summarized the complete FDP in points such as, this FDP will mainly focus on Environmental issues which affects the society, biodiversity and ecosystem. At the end, we can have a vision on how to restore the ecosystem and work towards the sustainability of the environment.

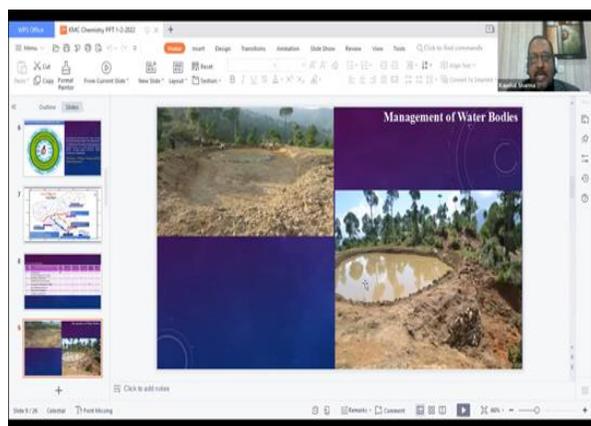


The first technical session of Day-1 was hosted by Dr. Shalini Baxi, who welcomed the first speaker of the programme, Professor Kaushal Sharma. Professor Sharma has started his talk by introducing himself as a pragmatic geographer, the person who works directly in the field or they take the knowledge to the community. The main focus of his lecture revolved around three things: **Ecological restoration, environment sustainability and economic empowerment**. They have reiterated that the cost of ignorance, not knowing, is very high. He started the lecture by introducing these three terms and stressed how migration of people or animals are responsible for the ecological degradation. There is a great scope for geographers who could be helpful to check the migration. The augmentation of the environment is also possible by applying the restoration processes.

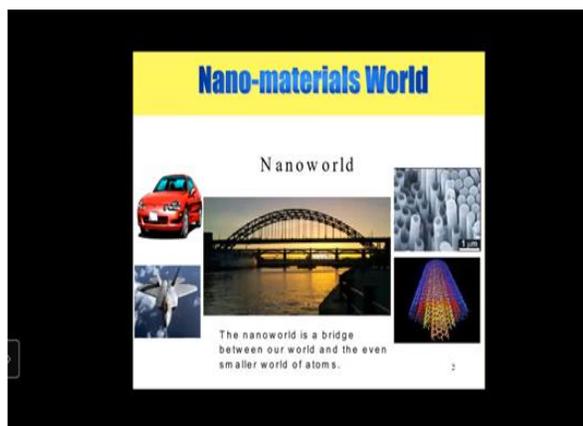
Since humans are an integral part of the ecosystem so for a sustainable ecosystem a strong interaction among its components and weak interactions across its boundaries are desirable. Biodiversity serves as the good source of many ecosystem goods, apart from the biodiversity ecosystem services are always beneficial for people. Ecosystem provides various services like provisional services, regulating services, cultural services and supporting services. In provisional services food, fresh water, and genetic resources are always the by-product of the ecosystem. In the case of regulatory services, the components of the ecosystem help in pollination, water purification, water regulation etc besides these ecosystems also provide cultural as well as supporting services. Professor Kumar in due course of his talk specially shared a quote by Plato **“Ignorance is not the greatest evil. The accumulation of poorly mastered knowledge is worse”**. They have discussed the excerpts from one of his successful projects related to Ecological Restoration and Social Economic Empowerment that accomplished at Pratap Nagar, Tehri Garhwal, Uttarakhand. In this project ecological restoration was done by restoration of water bodies and then water percolated from water bodies became available and potable for animals. Likewise, plantation of Rapier grass to restore the slope. Apart from these a specially designed stove, that was fuel efficient as compared to the conventional stove was also used which minimises the consumption of woods maximum to 10 kg/month. In addition to that, the installation of panchakki and selling of Clerodandrum flower, juice and Achaar for their economic empowerment. Additionally, a special training for farmers. Professor has concluded his talk with the idea to make an effort to local social entrepreneurship where the panchayat role is very crucial

to usher the knowledge of ecological restoration to the common people in the rural area. He also added that the Ministry of Rural Development should bring a special program for the people living in rural areas for their training and upliftment through sustainable development.

The second technical session of Day-1 was chaired by Dr. Vandana Meena who welcomed Dr. Alok Kumar Chaudhari, Assistant Professor of Department of Chemistry, DDU Gorakhpur University has delivered an interesting and informative lecture on topic “**Nanomaterials, general information and applications**”. He started his talk with a famous quote of **Feynman** (1960) and gave an historical background of nanomaterials. Dr. Chaudhari addressed various physicochemical properties of the nanomaterials and explained bottom-up and top-down approach to synthesise nanoparticles. He has given especial emphasis to the electro deposition method of synthesis of nanoparticles by atom to atom manipulation process through which metal layers deposited on a conducting substrate and explained the various factors affecting this process. Through his wonderful session, participants got better understanding of nanoparticles and learned how these nanoparticles play crucial role in various sectors including biomedical fields, drug delivery, water treatment, sensors, coatings, automobiles, clean energy.



Prof Kaushal Kumar , JNU, Delhi



Dr. Alok Chaudhari, DDU, Gorakhpur

## **DAY 2 (February 02, 2022):**

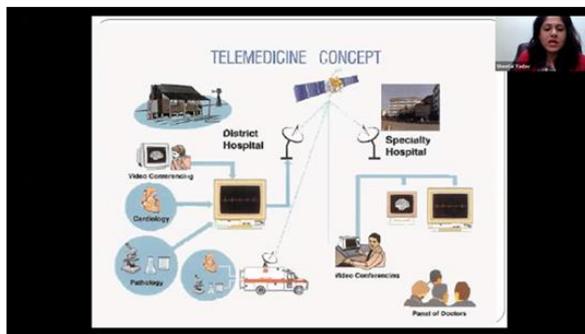
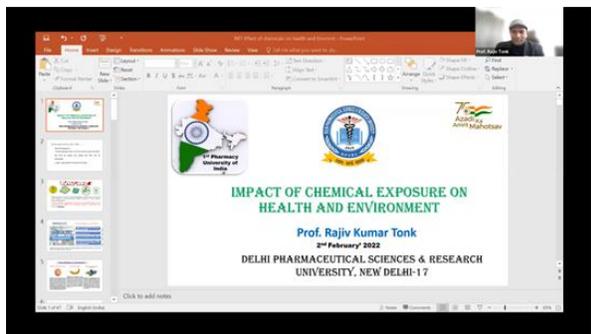
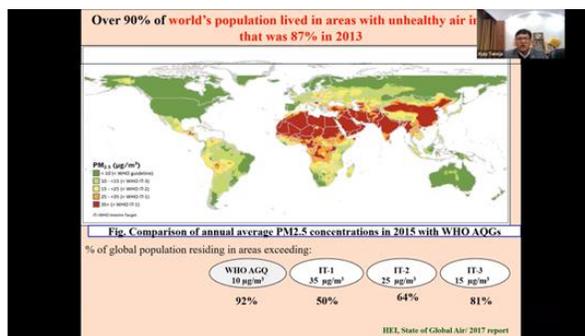
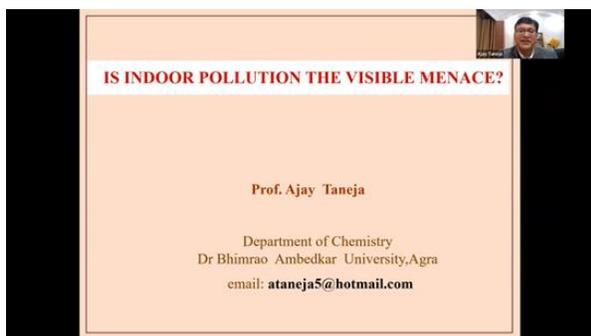
The first technical session of the Day-2 was delivered by **Professor Ajay Taneja**, Department of Chemistry, Dr. B.R. Ambedkar University. During his talk, he spoke on **indoor pollution**. The presence in or introduction into the air of a substance which has harmful or poisonous effect to

human health or animal or plant life or property is called air pollutant. Pollutants can be natural, such as volcanic ash or can be human created such as trash or runoff produced by factories. Air pollutants emitted directly into atmosphere such as SO<sub>2</sub>, NO<sub>x</sub>, CO, PM, *etc.* are considered as primary pollutants while harmful substances formed in the atmosphere such as ozone is called a secondary air pollutant. The speaker tried to make us aware about the indoor air pollution as most people do not consider it as important as outdoor pollution. For example, women working in the home have 54% higher death rate from cancer than those who work outside the home. According to WHO indoor pollutants are likely to be inhaled 1000 times more in comparison to outdoor pollutants. Contribution of Residential Energy use in India for the generation of anthropogenic PM 2.5 is 67%. The global trends in PM<sub>2.5</sub> concentration showed steepest increase, *i.e.* 11.2% since 2010 and it was found 13.8% for India. Most of the people in India are not even aware about the health effects of indoor air pollution which include allergies, skin problems, eyes or nose irritation, headache, mental fatigue *etc.* Although, indoor air pollution can easily be controlled by improving ventilation, changing filters of central heaters and air conditioners, adjusting humidity level and by using control equipment.

The second session of the Day-2 was sparked by **Prof. Rajiv Tonk**, Delhi Pharmaceutical Sciences and Research University on topic Impact of Chemical exposure on health and Environment. During his address, Prof. Tonk explained about the term chemical free which is used in marketing is a misleading term. Since all substances and object are composed of chemicals. He explained the difference between chemical and non chemicals. Also he discussed the different types of chemicals. He discussed about the hazardous household product and their effect on human health. Besides Prof. Rajiv Tonk told the methods to protect our environment from pollution. He discussed how (POPs) pass from one species to another and accumulate in the food chain. Top the Indian food contaminated with POPs were tabulated by him. He concluded his talk by giving a questionnaire to the participants over all it was an informative talk.

The third technical session of the Day-2 was given by **Dr. Sheetal Yadav**, Department of Hospital management, DPSRU. She spoke about telemedicine as an emerging field in the healthcare system which delivers the healthcare services mainly to remote and rural areas by healthcare professionals using information and communication technologies to exchange of valid information for diagnosis and various kinds of treatments. Dr Sheetal briefed the current status of telemedicine in India is emerging and developing in order to reach to remote areas but due inadequate communication and

IT infrastructure of our country we are facing many challenges. In India telemedicine programs are enthusiastically supported by various departments like Department of Information Technology (DIT), ISRO. USA being the pioneer in telemedicine values for \$21k million in 2018 and is still expected to grow while East Asian countries like India are showing potential for rapid development in their IT sector and hence, in Telemedicine. The most consulted diagnostic with telemedicine is Neurology, Endocrinology, Paediatrics, Cardiology and Internal Medicine. During Covid-19, telemedicine has truly come as a blessing in disguise by providing a viable alternative to all those who required medical consultation and remedy without endangering themselves with the infection wherever it could be avoidable. At the end she concluded her talk by saying that telemedicine may have certain barriers but its strengths like easy access to healthcare services, reliability to provide desirable results can give boom along with various guidelines and initiatives by Government (MoHFW and Niti Ayog) even in developing countries like India.



### DAY 3 (February 03, 2022):

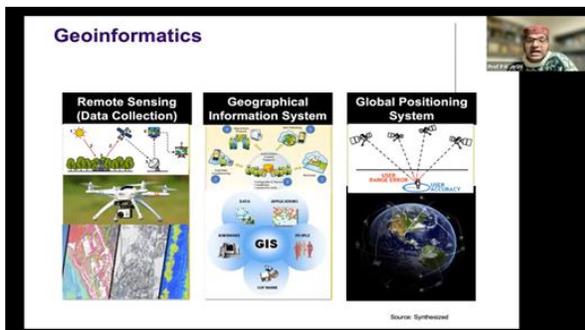
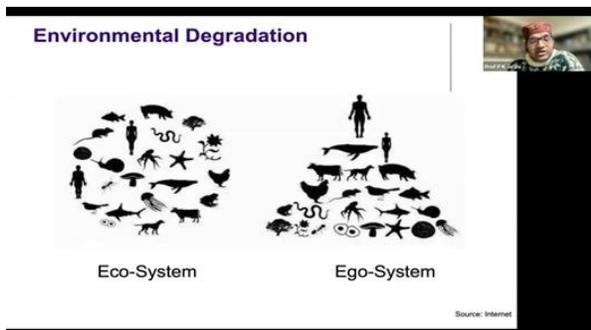
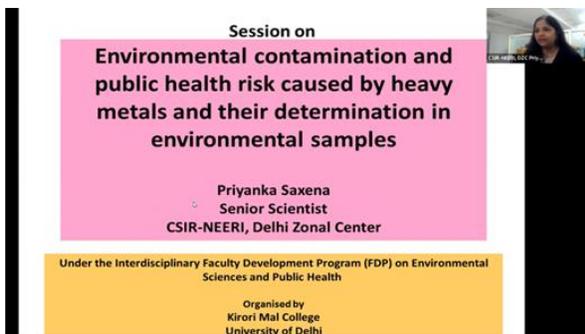
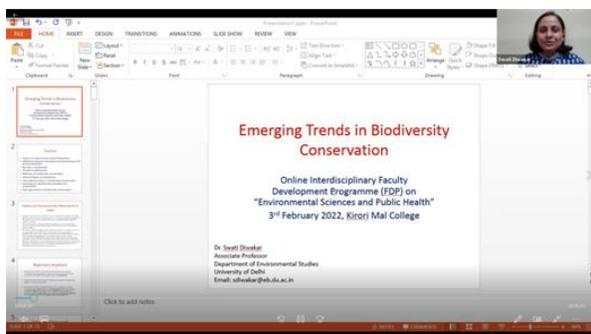
First technical session of Day 3 was delivered by Dr. Swati Diwakar on the topic Biodiversity Conservation and The Environment, She started with the history of the environmental movement in India which dated back to 1921. She vividly depicted the Kumaun forest movement as well as

the Mulshi satyagraha. Speaker talked about a flexible repertoire of protests such as *dharna*, *gherao*, *rasta roko*, *jail bhara andolan*, *bhook hartal*. Sunderlal Bahuguna and Baba Amte leading environmental activists wrote signed articles in print media to draw attention to the struggle they were engaged in. They focused on the ecological restoration of environmental moments like the “*Chipko movement*”. Dr. Diwakar successfully conveyed the message that environmentalism is the interest of the developed country while poor countries and individuals aren't, which is referred to as “full stomach” phenomena. The speaker also highlighted the difference in the trajectories of economic development between the developed world and developing countries. She also described the significant role of scientists in environmentalism in developed countries compared to developing countries like India, Bangladesh, and south contingent countries, and the marginal difference in the agenda of environmentalism of the poor and rich. The history of the convention of biological diversity (CBD) started with the establishment of the United Nations Environment Program (UNEP) in 1992 with three main objectives: conservation of biodiversity, sustainable use of the compounds of biological diversity, and equitable sharing of the benefits arising out of the utilization of genetic resources. Speaker also mentioned the Aichi biodiversity targets of a 10-year plan for protecting and conserving natural systems though this fails but not the other initiative. Dr. Swati also told the audience about the need to speed up the process of protecting the loss of biodiversity around the world. Speaker also talked about the total economic values of the tropical wetland ecosystem. Dr. Swati stressed the fact that the major threats to biodiversity are the results of human activity. Speaker pointed out that the illegal wildlife trade is also an issue of both conservation and global health concerns. Dr. Swati Diwakar presented the conservation model for the species and talked about the biodiversity hotspots for the conservation priorities. She also successfully conveyed the message about the predicted aspects of climate change with some examples of their likely effect on different levels of biodiversity. The conservation of biodiversity is the most challenging topic and we must take initiative to preserve the biodiversity through political will, hard work, and social participation because nothing is worse than the loss of species diversity by the destruction of natural habitats.

Second session of Day 3 was enlightened by Dr. Priyanka Saxena, Senior Scientist CSIR, NEERI on topic Environmental contamination and health risk caused by heavy metals and their determination in environmental samples. She nicely introduced about the various sources of environmental contamination and how this contamination directly and indirectly affecting to all

living forms of the earth. She also simplified the classification of environmental contamination. She elaborates the concept of environmental contamination and how heavy metals and alloys are encountered our daily life. She also explained the biological relevance of metals. She particularizes the factors which are responsible for environmental and human exposure to these heavy metals and how the risk factors for human health are increasing day by day. She named the metals and metalloids which are toxic and harmful for environment and human health. She clarified how drinking water are contaminated and identified the materials which are responsible for this. She described the different terms which are used for the quantification of trophic transfer of heavy metals, like Bioaccumulation, Biomagnification, Bioconcentration. She gave some example of Arsenic contaminated zone like Bangladesh, India, Chile, Uruguay, Mexico, Taiwan and how the people in this region are affected by Arsenic.

Third technical session of Day 3 was lead by Prof. P. K. Joshi, during his talk he spoke about the role of geoinformatics in environmental studies. He first talked about that what is eco system and ego system, in one all living beings are in living inharmony but in second humans are trying to be superior. He gave the information about the role of space and time in the different field like conservation and population management. He told about key factors of geoinformatics that's is remote sensing, GIS and GPS. How this information system can be used to study the changes in the behavior of animal, how plants have migrated from their original locations to higher altitude to find out the optimal conditions. He also discussed about that how GIS works with key factors of integrated projects, coordinated systems, cooperative networks and collaborative societies. His talk included the applications of informatics in agriculture, mapping, fishing and lot many more. For conservation of forest he discussed the role of geoinformatics for studying the forest and whether forecasts with the monitoring of forest cover and forest type mapping. Prof. Joshi talked about the positioning of active fires from satellite at different locations. Also, how rain fall or air pollution can be visualized from the satellite.



#### DAY 4 (February 04, 2022):

First session of Day 4 was started with the welcome address by Dr. Vivek Srivastava, HOD, Department of Botany, Dayanand College, Hisar. Dr. Vivek introduced the eminent speaker Prof. (Dr.) Madhulika Banerjee, Department of Political Science, University of Delhi to the participants. Prof. Banerjee started his talk with hindi song, “*Mandir, masjid girijaghar ne baant liya bhagwan ko, dharti baanti, ambar baanta mat baato insaan ko.*” She gave a very insightful and inspiring talk on, “Alternate ways of sustainable development”. Prof. Banerjee emphasised that how to live with nature with a real development. She says that without proper public health and sanitation practices, no country can develop and used to explain the topic with few real life examples. She delivered her lecture in five parts connecting with real life *i.e.* sense of the way to achieve the sustainable development. She talked the real sustainable development that related to the nature as well as our society in very simple and understandable ways. Prof. Madhulika Banerjee explained that these practices will surely help us to achieve sustainable development and she added also that this development will be possible only when everyone understands and pays his/her duties regarding this. Further the session was followed by question answer round and all the queries were solved by her. The session ended with a vote of thanks by Dr. Seema Gautam, Assistant Professor, Department of Chemistry, University of Delhi.

The second session of Day 4 was commenced by Dr. Manju Rani, Assistant Professor, Department of Hindi, Kirori Mal College introducing the speaker, Dr. Neetu Rani, Assistant Professor, Centre for Environmental Studies, GGSIP University. During her talk, Dr. Neetu emphasising upon water contamination emerging as a serious threat to the society. She called the disposal of untreated wastewater to natural water bodies and wetlands as causing stress to the freshwater bodies due to excessive pollution load. Conventional methods fail to scale as they are very expensive and need technical know-how and skilled professionals to function. She then introduced the concept of constructed wetlands (CWs) as an alternative natural environment friendly method of treating wastewater. Her lecture was divided into two parts, in the first part she talked about the types and functions of CWs and in the second part she explained the application of the same in treating wastewater coming from different sectors. Constructed wetlands are man-made structures where water pits are dug up and different plants that can absorb the contaminants are added to it along with certain substrates which may acts as sorption sites for bacteria and toxins. Due to the success of CWs in improving both the biological as well as the chemical oxygen demand (BOD/COD) and improvement of the quality of water, more and more researchers are exploring the field of designing CWs. Basis the flow of water, configuration, substrate, hydrology and choice of macrophytes different CWs can be designed depending upon the requirement and the source of wastewater. In the second part of her talk, Dr. Neetu showed various sites at which they had constructed the wetlands and the results they obtained. In particular, the results from paper and pulp industry in Saharanpur, UP were very interesting as apart from removing the toxins, the macrophytes and the substrates added also removed the color of the wastewater. She also talked about role of CWs in bioenergy generation. The lecture was followed by a Q&A session chaired by Dr. Gauri Garg Dhingra, Assistant Professor, Department of Zoology, Kirori Mal College in which several participants asked relevant questions from the speaker and made some comments to add to the discussion. The session ended by a formal vote of thanks by Dr. Ruchi Sharma Pandey, Assistant Professor, Department of Chemistry, Kirori Mal College.

Third and last session of Day 4 was delivered by Prof. V. Madha Suresh, Centre for Environmental Sciences, University of Madras. The speaker, Prof. V. has worked on wetlands and the impacts that human activities are having on them. He delivered his talk into two parts: 1) General aspects and role of wetlands, 2) Case study of the Pallikaranai wetland, Chennai (Tamil Nadu). Prof.

Suresh explained both the parts very nicely and also mentioned the advantages. He then concluded on the note that the younger generation needs to be made environmentally conscious in order to save the wetlands and other ecosystems.



#### **DAY 5 (February 05, 2022):**

Session 1 of Day 5 was started with welcome note by Dr. Nimalini Moirangthem, Assistant Professor, Department of Chemistry, ARSD College, University of Delhi, Who introduced the eminent speaker Dr. Surender Kumar, Professor, Delhi School of Economics, University of Delhi, to the participants. Dr. Kumar discussed various methods of economic modelling of population generation in very simple way and also explained about good and bad output and relation between input and bad output in very lucid way. He highlighted the modelling of bad outputs as followings: (1) Freely disposable, (2) As weakly disposable output, (3) As by product of good outputs (4) And a positive relationship in generation of good and bad outputs.

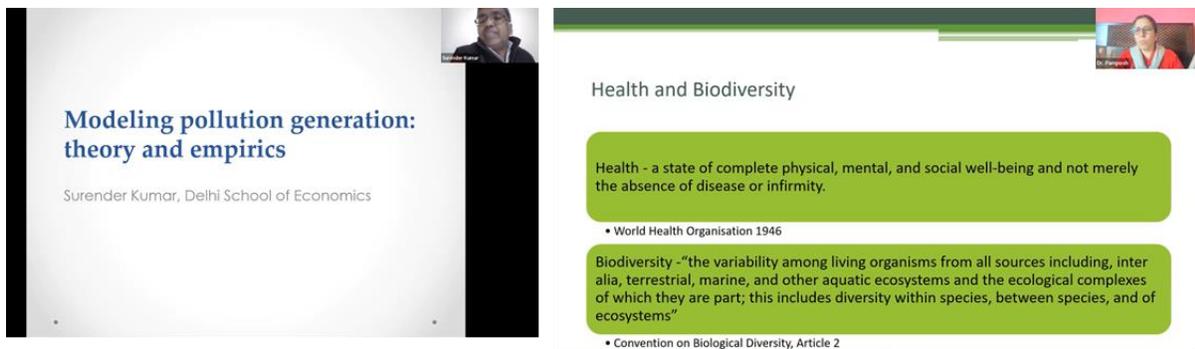
The Dr Kumar further highlighted that the production can happen only by use of resources by taking the example of electricity generation. If we want to produce the electricity so we have to burn the coal, which will produce more pollution, so our main focus should be on modelling of pollutions. At the end, Dr. Prem Kumar, Assistant Professor, Moti Lal Nehru College, University of Delhi.

Thanked Professor Surender Kumar for wonderful and enlightening session.

Second technical session of Day 5 was started by Dr. Pamposh, University School of Environment Management, GGSIPU, who delivered a wonderful talk on Biodiversity and human health and enlightened us on its various aspects. Biodiversity is important as it provides security, resiliency, social relations, and health. Dr. Pamposh pointed out the various root causes of biodiversity loss and explained how such losses have prompted to refer to the present period as 'the sixth extinction'. Due to the ecosystem disruption, changes in the food supply are occurring which lead to increased malnutrition and weakening of the immune system of more immunocompromised people in the world. The speaker highlighted that there are both direct and indirect linkages between human health and biodiversity. Direct linkages include consumable goods and services while the services provided by large-scale ecosystem interaction come under the umbrella of indirect linkages. She made us aware of some medical models where some species are used as models for understanding the biomedical sciences. It simply suggests how different species can be modelled or used for the welfare of mankind. For example, the armadillo is used to study human leprosy, while African green monkey's kidney cells are used in virus studies, etc. The speaker elaborated some terms like dilution effect and buffering effect and how they are related to biodiversity. She explained the importance of water purification, storage, and flood control as they play a crucial role in determining hydrology and consequently the water cycle. She also successfully conveyed the message about the predicted aspects of biodiversity with some examples of their likely effect on human health. Human health and well-being depend enormously upon the conservation of biodiversity. Innovative, new, and effective approaches are required to conserve biodiversity.

Third and last session of the Day 5 was sparked by our eminent speaker Mr. Gaurang Baxi Director- Tactise, The session started with the basic understanding of environmental laws which included as to why there is a need to formulate and enact laws to protect various components of the environment. The speaker very organically highlighted the evolution process of environmental laws in India. Environmental laws existed during the colonial period but they were more activity or impact specific and it was only after the landmark event Stockholm Declaration which led us to understand how industrial development has started to affect the environment and the impacts are

visible. And this led to the enactment of the first act to safeguard environment, Water (Prevention and Control of Pollution) Act, 1974. The speaker threw light on how our Constitution could successfully incorporate two articles 48A and 51A which are the duties of the state and citizen to protect and improve our environment through its 42<sup>nd</sup> amendment in 1976. He then elucidated in very simple words the three main environmental acts namely; Water Act (1974), Air Act (1981) and Environment Protection Act (1986). The objective, requirements, provisions and penalties under every act were explicitly stated along with relevant case studies. Different judicial approaches towards environmental protection were also discussed along with drawbacks we face in terms of enactment and implementation of these laws. And this was carefully supported with the challenges faced by the same. It was at the end stressed that it is not just about the law but about the integrity of people and the nation what can make a difference. After the session was over, Mr. Baxi took all the questions put forward by the participants and successfully satisfied all of them.



**Valedictory Session by Prof. Vibha Singh Chauhan, Ram Sunil Kumar Lalji, Prof. Shri Prakash Singh:**

Mr. Ram Sunil Kumar Lalji, Convenor of Faculty development program then welcome the Director south campus-Delhi University, Professor Shri Prakash Singh for the concluding remarks

thanking the Principal, Kirori Mal College as well as faculty members of the Department of Chemistry for their support and cooperation. He also appreciated each faculty members and participants for their hard work and support in systematic organization of the event and congratulated the team for the grant success of the FDP. At the end, feedback from the participants and the event was concluded.

