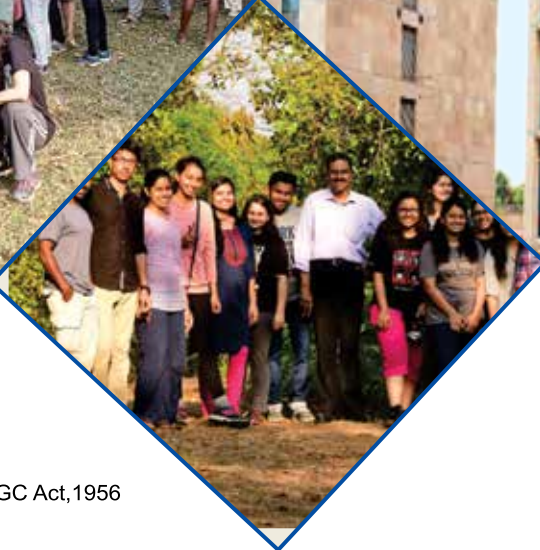


# TERI SCHOOL OF ADVANCED STUDIES PLACEMENT BROCHURE

MSc (Environmental Studies and Resource Management) 2018  
MSc (Climate Science and Policy) 2018



**teri** school of  
advanced studies

Knowledge for Sustainable Development

Deemed to be University under Section 3 of the UGC Act, 1956  
Accredited with grade 'A' by NAAC



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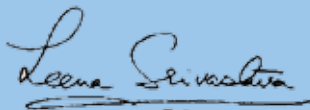
## From the desk of Vice-Chancellor



*TERI SAS can proudly say that its alumni are today part of the workforce of several forward-looking, sustainability-oriented corporates, agencies, consultancies, NGOs and even governments at all levels. The University is at the forefront of responding to global concerns on environment and sustainable development through knowledge creation and the development of a workforce that is empowered to guide sustainable economic growth and human well-being.*

*Building institutional and individual collaborations with like-minded Programmes/Universities, our faculty ensure that the knowledge we create/imbibe through state-of-the-art research in these areas keeps our learning curriculum cutting-edge, interdisciplinary and solutions oriented. This curriculum also benefits from a continuous feedback from academic peers at the national and global levels, from the employers of our students and from the students themselves—resulting in refined content and pedagogy on a periodic basis. The presence of international students and interactions with global experts ensures that a student of the TERI SAS is also comfortable in a multicultural setting.*

*With clearly identifiable areas of domain expertise, our students have the advantage of a systemic appreciation of problem solving needs through engagement with research projects, industry exposure and field visits. We are sure that our students will bring great value to your workforce and you will, while deploying them productively in your organization, give them the opportunity to hone their skills further for the greater global good. We would, of course, at all times value any feedback that you would like to offer us.*



**Dr Leena Srivastava**  
Vice-Chancellor  
TERI SAS

## From the desk of Pro-Vice Chancellor



*Academic programmes at the TERI SAS are focused around the challenges of providing for a rising global population with a limited and degraded natural resource base. In moving towards sustainability, the implicit understanding is that there is no panacea or straight road, with recognized and established methodologies, tools or specializations leading to such development. The solutions therefore do not lie in a specific subject discipline, but must be appropriate and relevant to the context or the practical problem being addressed. Developing such an understanding among its students is best achieved through exposure to a variety of subjects, tools, and methodologies offered in interdisciplinary mode. This has been the guiding philosophy behind the programmes offered by the TERI SAS and is practised by building a theoretical understanding in courses covering a variety of traditional disciplines, such as ecology, natural and social sciences, governance, policy, law, and engineering.*

*At the TERI SAS, students are exposed to a new way of thinking that looks at problems not from the lens of a subject specialist, but from the perspective of one who recognizes the complex linkages between man and his environment.*

*The TERI SAS's programmes are unique, not only in terms of the degrees, but in terms of the fact that they equip the graduates to lead in a resource-sensitive world. The programmes leverage TERI's knowledge capital in sustainable development to deepen the social and ethical consciousness of higher education in India.*

*We are sure that you will find graduates of these programmes to be competent leaders with a holistic and long-term perspective for a world that demands new skills and attitude.*

*Your feedback will be most valuable to us, and we look forward to it.*



**Dr Rajiv Seth**  
Pro-Vice Chancellor  
TERI SAS



## ABOUT TERI School of Advanced Studies

The TERI SAS was established to disseminate the vast reservoir of knowledge devised by The Energy and Resources Institute (TERI), a not-for-profit, independent research institute recognized globally for its contribution to scientific and policy research in the realms of energy, environment, and sustainable development. TERI SAS's academic offering is rooted in the comprehensive research, consultancy, and outreach activities of TERI.

In 1999, the University was granted the "Deemed to be University" status by the University Grants Commission (UGC) and notified vide the Ministry of Human Resources Development, Department of Education, Government of India, notification no. F.9/19/95-U-3, dated October 5, 1999. Since its inception, the TERI SAS has offered not just world-class education, but also an environment that enables its students to develop fresh perspective in their subject areas. Before moving to Vasant Kunj, the University was housed in the Darbari Seth Block of India Habitat Centre from 1998 to 2008. In 2008, TERI SAS started functioning from its new 'green campus', located in Vasant Kunj. The University aspires to be an institution of advanced learning which meets the needs of a rapidly growing nation. The academic programmes are envisioned to provide the students with a holistic perspective of the subjects offered and encourage interdisciplinary learning.

### Administration

The TERI SAS's Board of Management is responsible for its overall administration and control. All aspects of academic policy are under the purview of the Academic Council, chaired by the Vice Chancellor, which approves curricula, courses, and examination results. Furthermore, it appoints committees to look into specific academic matters arising from time to time.

### Structure

TERI SAS has structured its academic programmes around the research experience and skill sets gained by TERI over the past three decades. Since its inception, the wide array of academic programmes offered by the University have been related to sustainable development and structured around four thematic areas—Biotechnology, Regulatory and Policy aspects, Energy and Environment, and Natural Resources. The University is a first-of-its-kind university in India to dedicate itself to the study of environment, energy, and natural sciences for sustainable development.

## Department of Natural Resources

Aims to advance and impart knowledge about the environment and natural resources, including their characteristics and dynamics, their economic and societal value, and their management.

## Department of Energy and Environment

Aims to advance and impart knowledge in aspects related to clean technologies, renewable energy management, and especially the interface between energy and the environment. Engaged in research in the broad area of clean technologies to achieve energy efficiency and minimize adverse environmental impacts.

## Department of Biotechnology

Aims to advance and impart knowledge in the field of life sciences, emphasizing research and the interaction of science with society.

## Coca-Cola Department of Regional Water Studies

Aims to advance knowledge and build core competencies among students, researchers, policymakers, and professionals in order to equip them to tackle the interwoven challenges of water sustainability, beyond cultural boundaries and across sectoral divisions.

## Department of Business and Sustainability

Aims to provide research-based education that would equip students to implement an integrated approach to business sustainability.

## Department of Policy Studies

Aims to achieve a critical mass of expertise and academic excellence that would provide a basis for influencing public policy and regulatory practice.

## Centre for Post Graduate Legal Studies

Aims to be an interdisciplinary centre of excellence dedicated to legal research and teaching on issues pertaining to society and development.

Besides a set of core faculty members, the University also draws about 30 PhD qualified research professionals of TERI as adjunct faculty for its programmes. They have rich experience of working on projects related to regulatory studies, policy research, bioresources, biotechnology, energy, and environment.



## ACADEMIC PROGRAMMES

At present, the following programmes are offered:

- PhD
- MSc (Environmental Studies and Resource Management)
- MSc (Geoinformatics)
- MSc (Climate Science and Policy)
- MSc (Plant Biotechnology)
- MSc (Economics)
- MSc (Water Science and Governance)
- MA (Public Policy and Sustainable Development)
- MA (Sustainable Development Practice)
- MBA (Infrastructure)
- MBA (Business Sustainability)
- MTech (Renewable Energy Engineering and Management)
- MTech (Urban Development and Management)
- MTech (Water Science and Governance)
- LL.M (specialisation in Environment and Natural Resources Law and Infrastructure and Business Law)
- Diploma in Water Science and Governance
- Diploma in Renewable Energy (distance education mode)
- Advanced PG Diploma in Renewable Energy (distance education mode)



The academic programmes offered by the TERI SAS focus on the challenges of providing for the rising global population with a limited and degraded natural resource base. In moving towards sustainability, there is no panacea, or straight road with recognized and established methodologies, tools or specializations. The solutions, therefore, do not lie in a specific subject discipline but must be appropriate and relevant to the context or the practical problem being addressed. Developing such an understanding among the students is best achieved through exposure to a variety of subjects, tools, and methodologies in the interdisciplinary mode. This has been the guiding philosophy of TERI SAS's programmes and is practised by building a theoretical understanding of courses covering a variety of traditional disciplines such as ecology, the natural and social sciences, governance, policy, law, and engineering. Over the duration of their study, students converge upon a few areas based upon their interest, having been exposed to a new way of thinking that looks at problems not from the lens of a subject specialist, but from the perspective of one who recognizes the complex linkages between man and the environment.

The TERI SAS uses modern pedagogical tools, richly supplemented by field visits, live industry projects, and hands-on applications. It provides the best equipment and instruments, which includes state-of-the-art computer hardware and software, well-equipped laboratories, video-conferencing facilities, and access to South Asia's most comprehensive library on energy and environment. TERI SAS was awarded the India Today award for the most innovative curriculum. It has also received grade "A" accreditation by National Assessment and Accreditation Council (NAAC).

## Collaborations

Stressing the importance of the international perspective in its programmes, TERI SAS has entered into Memorandums of Understanding (MoUs) with several international universities aimed at facilitating a mutually beneficial exchange of students, faculty, knowledge, resources, and ideas.

The University encourages the exchange of ideas, cultural understanding, and a wide range of knowledge that would result from international exposure. In 2007, the University launched an academic exchange programme with Yale University (School of Forestry and Environmental Studies) with support from the V K Rasmussen Foundation. In 2008, the University launched another academic exchange programme with Freie University of Berlin, Germany, with support from DAAD (the German Academic Exchange Service).

TERI SAS has also signed MoUs for academic collaborations with North Carolina State University, University of Eastern Finland, Tor Vergata Economic Foundation (Rome, Italy), Utrecht University (Utrecht, The Netherlands), Carleton University (Canada), Simon Fraser University (Canada), Deakin University (Australia), University of Technology (Sydney).



## ACADEMIC CHAIRS AT THE UNIVERSITY

### Indian Railways Chair for Sustainable Mobility

The Ministry of Railways, Government of India has set up an Academic Chair on Sustainable Mobility at TERI SAS which serves to bring the most competent academicians/professors from the field of rail infrastructure to lend strength to the ongoing research activities at the University. The Chair involves itself in the issues of rail infrastructure and greening of the railways.

### UNESCO Chair

TERI SAS has been granted a UNESCO Chair in Climate Science and Policy. This is a prestigious award and is given to very few universities across the world. The TERI SAS has already tied up with various global universities for being partners in the UNESCO Chair. This includes the Scripps Institute of Oceanography, La Jolla, California, and the Yale Climate and Energy Institute at the Yale University, USA. The Chair serves as a means of facilitating collaboration between high level, internationally recognized researchers and teaching staff of the University and other institutions, particularly in India and other countries in Asia and the Pacific, as well as in Europe and North America.

## HUDCO Chair

HUDCO has established an Academic Chair at the TERI SAS with the objective to accelerate research and development, training, and capacity-building in the habitat sector, facilitate capacity-building of urban local bodies, and promote research in the field of urban development and related areas.

# INFRASTRUCTURE

## Green Campus

TERI SAS has a 'green' campus. It puts into practice the very principles taught in its classrooms. An architectural delight, the campus has been planned to provide a setting that enhances learning, while simultaneously showcasing the concept of modern green buildings. Spread over two acres, the campus comprises an administrative block, an office block, a convergence and hostel block. The green building has 10 classrooms, each having a capacity for seating 32 students, three lecture halls with a capacity for 60, and an auditorium with a capacity for 100 to 150 persons. The building also has 10 well-equipped laboratories to complement cutting-edge research at the TERI SAS. The campus is aesthetically designed with several features of passive energy-saving design, energy-efficiency, and water and waste management systems.

## Green Features

- Insulation of external walls
- Insulation on terrace done with vermiculite and puff insulation topped with China mosaic for efficient heat reflection
- Double insulation synergy azure glass is used in external façade with aluminum glazing
- Earth Air Tunnel (EAT), Thermal Mass Storage, and Variable Refrigerant Volume (VRV) systems are used for cooling the building
- Hunter Douglas louvers are used in the building for controlling the intensity of incoming sun rays
- Solar water heating system
- Waste water recycling with STP
- Rainwater harvesting

## TERI SAS Laboratories

TERI SAS harnesses the best of modern technologies to support and encourage the intellectual curiosity of its students and faculty. It also has laboratories with advanced equipment and facilities to aid and stimulate research.

## Solar Lighting Laboratory

TERI SAS has established a Solar Lighting Laboratory (SLL) which is a first-of-its-kind laboratory in India and achieved the NABL's accreditation (National Accreditation Board for Laboratories) as per IEC 62257-9-5 ed. 2.0. The laboratory adheres International Electrotechnical Commission (IEC), an international body that sets standards for all electrical, electronic and related technologies throughout the world standards for the testing of Solar Lighting Systems (SLS) and also recognized under the Lighting Global programme of International Finance Corporation (IFC). The laboratory is also supported by the Ministry of New and Renewable Energy (MNRE) and has sophisticated equipment and test setup that is used for testing lighting products.

The laboratory's facility is available for testing as per IEC and MNRE specifications for various lighting systems (both solar-based lighting and general lighting). The laboratory has also carried out various training programmes for different target groups. So far, SLL has tested more than 200 models of solar lighting systems including solar lanterns, solar home lighting systems, solar task lights, and multi-purpose solar lights. The ability of the laboratory to cater to the testing needs of both rural as well as urban lighting infrastructure makes it stand out from other laboratories. The laboratory is working towards strong quality assurance and testing programmes which will help in building consumer confidence towards the solar lighting products. The IFC's Lighting Asia-India programme is working with the University to achieve these goals.

As a way forward for the development and expansion of this laboratory, it is further planned to be linked with several other groups or programmes that require general lighting system (GLS) testing. The supreme testing equipment and authority for high quality assurance can lead to the transformation of the laboratory into a nodal agency for general (solar) lighting system testing not only for India, but entire Southeast Asia.



## Environmental Monitoring Laboratory



The Environmental Monitoring laboratory (EML) is capable of providing practical training to the students through structured laboratory curriculum, including all kinds of relevant soil, water, and air monitoring experiments required at the master's level. It caters to the interdisciplinary application in research to all the students of the University.

The EML is state of art laboratory equipped with instruments such as UV-Visible Spectrophotometer, GRIMM Aerosol Spectrophotometer, Respirable Dust Sampler, High Volume Sampler, Gaseous Monitoring Kit, Handy Low Volume Air Samplers, Stack Monitoring Kit, PH Meter, Muffle Furnace Ion Selective Electrode, Turbidity Meter, Conductivity Meter, Jar Test Assembly, COD Digester (Reflux), BOD Testing Apparatus, Sensitive Balance, Bomb Calorimeter, Kjeldahl Unit, Microscope (Primostar Halogen), Muffle, TSI Optical Sizer, Potable As Analyzer, Q Track–Indoor Air Quality Monitors And Q Track– Velocicalc.

## Combustion Laboratory

The Combustion laboratory has been established to test the performance of cookstoves based on energy efficiency as well as emissions using nationally and internationally accepted protocols such as Water Boiling Test (WBT), Controlled Cooking Test (CCT), and the Indian Standard on Solid Biomass Chulha Specification (BIS India). The hood method is used to capture and quantify the various products of incomplete combustion. The following instruments and support facilities are available in the lab: Moisture Meter, Bomb Calorimeter, Equipment to maintain isokinetic conditions, Aerosol Spectrometer And Dust Monitor, Low Flow Air Samplers (attached with SKC pump) for collection of bulk aerosols for characterization, Potable Gas Analyzer Digital Infrared Thermometer

## Geoinformatics Laboratory

The Geoinformatics Laboratory at the TERI SAS is well equipped with state-of-the-art equipment such as high-end computers (workstations), scanner, digitizer, printer, navigation devices, Infra-red thermometers and others. It has licensed version of high-end latest commercial software like ERDAS Imagine, LPS, ArcGIS, GMS, and WEAP along with other advanced support system's mechanism. The laboratory is also equipped with web publishing tools like ArcGIS Advance and ArcIMS Servers. The laboratory is also equipped with various open source geospatial softwares, to expose our students to the powerful open source environment.

The laboratory also holds a good repository of geospatial information in both digital and hard formats.

The Geoinformatics laboratory of the Natural Resources Department of TERI SAS also operates through a network with several research institutions working in the arena of Geoinformatics and other associated fields both within and outside the country. We also support research and development activities of the country wide network of The Energy Resources Institute (TERI) branches located across the country.

## Biotechnology Laboratory

Biotechnology laboratory is fortified with fundamental and advance facilities required for radical teaching and research applications in plant biotechnology. The laboratory is furnished with autoclave for sterilization, Biosafety Cabinet, Centrifuges, Conductivity Meter, Deep Freezers, Digital PH Meter, Gas Chromatography, Gel Documentation System, Ice Flaking Machine, Magnetic

Stirrer, Microscopy Facilities, Nano-Drop Spectrophotometer, Refrigerated Shaking Incubator, Plant Growth Room, Vortex Shaker with Touch Plate, Water Bath for Incubations, Laminar Air Flow, Master Cycler among other basic infrastructure. Additionally, the Bioinformatics laboratory with work station dedicated computer systems facilitated with advanced software, such as MATLAB, GCK, PAUP, and MacVector exists for 'in-silico' applications. Further, the plant biotechnology course is augmented by the support from research laboratories involved in research activities led by the faculty members in the areas of Genomics and Plant Development Biology, Nanobiotechnology, Bioinformatics, Microbial genetics and pathogenesis, Stress Physiology and Structural Biology.



## Power System Laboratory

The Power System Laboratory gives a comprehensive idea about the practical aspects of power system infrastructure. The generated electrical power is transmitted through transmission lines and used mostly in rotating machines. The state-of-the-art laboratory infrastructure is equipped with the experimental facilities for providing training on transmission lines, DC machines, induction motors, synchronous machines, and transformers. The laboratory gives the opportunity for experimental verification of performance characteristics of the power system equipments along with exposure of modern day technologies for solving modern day power system problems. The experiments are designed keeping in mind the multidisciplinary approach of the students coming from different engineering and science backgrounds.



## Heat Transfer Laboratory

The Heat Transfer Laboratory is designed to incorporate the practical concepts of heat and mass transfer applied to renewable energy systems and energy conservation techniques. The experiments are designed to give comprehensive knowledge of heat transfer through conduction, natural convection, forced convection and radiation. The lab is fully equipped with experiments on heat exchanger. It also provides knowledge of boiling and condensation processes. The lab explores the basics of mechanical engineering and is designed such that the students are able to acquire interdisciplinary knowledge in an easy way.



## Energy Simulation Laboratory

Energy Simulation Lab enhances the soft computing skills of the students and enables them for modelling and simulation of energy systems. The laboratory experiments are designed to experimentally verify what they have learnt in the previous laboratories through software applications. The experiments are carried out using renewable energy simulation softwares viz. PVsyst for Solar PV, WAsP for wind, RET Screen for renewable energy project management, HOMER for microgrid applications. MATLAB is also discussed to be used for power flow solutions especially in renewable energy sector

## Biofuel and Waste Utilization Laboratory

The Biofuel and Waste Utilization Laboratories are distributed between the TERI SAS and TERI Gram at Gual Pahari, Gurgaon. Combustion process and fuel properties such as proximate analysis, COD, etc., are studied at the lab in TERI SAS, while experimental studies on biomass conversion processes such as gasification, biomethanation, and pyrolysis are carried out on facilities at TERI Gram.

## TERI SAS Library

The TERI SAS library supports the university's academic and research programmes by meeting the information requirements of students, researchers, and faculty members. Electronic and print resources are available in Natural Resources, Environment, Sustainable Development, Plant Biotechnology, Geoinformatics, Renewable Energy, Infrastructure, Regulations, Public Policy, and related areas.





The Digital Library provides access to electronic books, journals, databases, PhD theses, CDs, links to resources, news, and information alerts about the library. The online bibliography database of the university library can be accessed to search any particular title using the author's name, keyword or title itself. The faculty and students can retrieve online information from the dedicated



terminals situated in the library. Network resource sharing facilities are provided through DELNET and interlibrary loan services from the libraries of other universities and institution, such as American Information Centre, Delhi University, Indian Institute of Technology (IIT), Jawaharlal Nehru University (JNU), and more.

Electronic Resources: Theses/ Dissertations (Submitted by the TERI SAS Students), E-journals and

Databases: JSTOR/SCIENCE DIRECT /SPRINGER/OPEN ACCESS JOURNALS, E- Books, E-Government Documents and Reference Collection, In-house publications (Newsletters and Journals), Electronic articles and journal content-page alert services are available along with access to holdings of national and international university libraries.

# BOARD OF MANAGEMENT

## Chairman

**Dr Leena Srivastava**

Vice-Chancellor, TERI SAS

## Members

**Dr Rajiv Seth**

Pro Vice-Chancellor, TERI SAS

## Deans

**Dr Prateek Sharma**

Dean (Academic), TERI SAS

**Dr Arun Kansal**

Dean (Research and Relationships), TERI SAS

## Three Eminent Academicians Nominated by the Chancellor

**Dr Dipankar Gupta**

Former Professor in the Centre for the Study of Social Systems, JNU

**Dr Ashok Gulati**

Infosys Chair Professor for Agriculture, ICRIER

**Dr Ashok Khosla**

Chairman, Development Alternatives

## Nominee of the Government of India

**Air Marshal K K Nohwar (Retd)**

## Nominee of Sponsoring Society

**Mr Inder Walia**

Former Group Director (HR), Bharti Enterprises

**Mr Tulsi R Tanti**

Chairman and Managing Director, Suzlon Energy Limited

**Ms Anita Arjandas**

MD and CEO, Mahindra Lifespace Developers Ltd.

**Mr Ishteyaque Amjad**

Vice President (Corporate Affairs), Coca Cola India Pvt. Ltd.

**Dr Alok Adholeya**

Honorary Advisor, Sustainable Agriculture Division, TERI (Co. Opted)

## Two Teachers (from Professor and Associate Professor)

**Dr Smriti Das**

Associate Professor, Department of Policy Studies, TERI SAS

**Dr Anandita Singh**

Professor, Department of Biotechnology, TERI SAS

## One Teacher of the Rank of Assistant Professor

**Dr Soumendu Sarkar,**

Assistant Professor, Department of Policy Studies, TERI SAS

## Controller of Examination

**Dr Seema Sangita**

Assistant Professor, Department of Policy Studies, TERI SAS

## Registrar

**Capt Pradeep Kumar Padhy(Retd)**

TERI SAS

# ACADEMIC COUNCIL

## Chairperson of the Council

**Dr Leena Srivastava**

Vice-Chancellor, TERI SAS

**Dr Rajiv Seth**

Pro Vice-Chancellor, TERI SAS

## Deans

**Dr Prateek Sharma**

Dean (Academic), TERI SAS

**Dr Arun Kansal**

Dean (Research and Relationships), TERI SAS

## Heads of the Departments

**Dr Sapna Narula**

Department of Business and Sustainability, TERI SAS

**Dr Suresh Jain**

Department of Energy and Environment, TERI SAS

**Dr Sudipta Chatterjee**

Department of Natural Resources, TERI SAS

**Dr Chaithanya Madhurantakam**

Department of Biotechnology, TERI SAS

**Dr Nandan Nawn**

Department of Policy Studies, TERI SAS

**Mr M V Shiju**

Centre for Post Graduate Legal Studies, TERI SAS

## Professors

**Mr S Sundar**

Emeritus Professor, Department of Policy Studies, TERI SAS

**Dr Anandita Singh**

Professor, Department of Biotechnology, TERI SAS

## Associate Professors from Departments

**Dr Naqui Anwer**

Associate Professor, Department of Energy and Environment, TERI SAS

## Assistant Professors from the Department by Rotation of Seniority

**Dr Anu Rani Sharma**

Assistant Professor, Department of Natural Resources, TERI SAS

**Ms Fawzia Tarannum**

Lecturer, Department of Regional Water Studies, TERI SAS

## Nominees of the Vice Chancellor

**Dr Kanchan Chopra**

Professor and Former Director, IEG

**Dr Malathi Lakshmikumaran**

Director, Lakshmikumaran & Sridharan

**Dr T C Kandpal**

Professor, Centre for Energy Studies, IIT Delhi

## Co-opted Members

**Dr Anubha Kaushik**

Professor and Dean, School of Environment Management, GGSIU

**Dr Vivek Suneja**

Dean(Planning), FMS, Delhi University

**Dr Rakesh Khosa**

Professor, Department of Civil Engineering, IIT Delhi

## Secretary

**Capt Pradeep Kumar Padhy**

Registrar, TERI SAS

# Department of Energy and Environment

## MSc Environmental Studies and Resource Management (Programme Outline)

MSc Environmental Studies and Resource Management (ESRM) is an interdisciplinary course which provides a platform for students to develop specific skill sets and abilities for analyzing a variety of environmental issues in a holistic and sustainable way. The Programme trains the students as an efficient environmental researcher, project manager, and policy planner. The course curriculum presents opportunities to study the entire spectrum and facets of the environment, such as Air, Water, Soil, Pollution, Waste Management, Biodiversity Conservation, Geo-informatics, Sustainability and Climate Change, and Resource Management, while specializing in their specific areas of scientific interest. This imparts holistic learning and enables them to specialize in their selected field of choice; be it research, resource management, policy planning, or environmental consultancy. The Resource Management aspect of the course forms an integral part of differentiating this programme from others, providing students with the opportunity to specialize in concepts, such as life cycle analysis, environmental auditing and impact assessment; enabling them not only to look at the finer details, but also understand the larger picture—an ability which proves extremely useful in today's world with threats of climate change and resource exhaustion.

The Environment Science and Resource Management programme is an intensive four semester programme, with the students in the Fourth Semester opting to go for scientific research, policy issues or specialise in both, an intention to experience and realize the problems on ground and provide sustainable solutions

## MSc Climate Science and Policy (Programme Outline)

TERI SAS is the first university in India to offer a degree programme in Climate Science and Policy in India, which is an amalgamation of science and policy related to climate change. The programme draws from a pool of resources at TERI working on climate change and the teaching faculty in the TERI SAS is experienced, well-qualified, and well-trained in the state-of-the-art tools and techniques. Students of MSc Climate Science and Policy have exposure to policy issues, hands-on involvement with bureaucrats and negotiators as well as well familiar with researches in economics of climate change and energy efficiency policy. The High Performance Computer facility at TERI equips students with first hand knowledge about climate modelling- trend and scenario projections- as well as dynamic integrated models for energy forecasting, and economic and policy analysis. The students have publications to their name in renowned journals and books. The M.Sc. in Climate Science and Policy programme is an intensive four semester programme, with the students in the Fourth Semester opting to go for scientific research, policy or specialise in both, intended to imbue present and future professionals in the arena with practical and theoretical knowledge in scientific and policy strategy relevant to climate change.

# PROGRAMME STRUCTURE

## Programme Outline: MSc (ESRM) and MSc (CSP)

### MSc (ESRM)

Semester 1	
<b>CORE:</b>	<b>ELECTIVE:</b>
Environmental Law and Policy;	Applied Mathematics
Environmental Chemistry and Microbiology;	
Ecology;	
Environmental Monitoring Laboratory;	
Environmental Geosciences	
Research Methodology and Thesis Writing (Block);	
Introduction to Sustainable Development;	
Environmental Geosciences	
Environmental Statistics	

Semester II	
<b>CORE:</b>	<b>ELECTIVE:</b>
Technical Writing	Principles of Geoinformatics
Air Quality Management	Basic Course in Environmental and Resource Economics
Water Quality Management	Hydrology
Solid Waste Management	Biodiversity Conservation and Management
	Environmental Health and Risk Assessment

Semester III	
<b>ELECTIVE:</b>	
Environmental Modelling	
Integrated Impact Assessment	
Environmental Management System	
Wildlife Conservation and Management	
Multivariate Data Analysis	
Integrated Watershed Management Ecosystem Dynamics and Climate Change	

Food Security and Agriculture
Groundwater Hydrology and Management
Satellite Meteorology Governance and Management of Natural Resources
Independent Study
Governance of Climate Change
Environmental Economics
Aerosol Science
Industrial Pollution Control
Industrial Ecology
Minor Project

#### Semester IV

##### **MAJOR PROJECT -THESIS**

Major project is an essential component of the curriculum, the students are required to work for their major project for 4-6 months. Students are expected to have an external, an internal supervisor and a specific research problem for the major project. Students are also expected to submit a dissertation at the end of the internship and make a presentation, both of which are evaluated by a panel of faculty members and an external expert.

### MSc CSP (Subjects)

#### Semester I

<b>CORE:</b>	<b>ELECTIVE:</b>
Basics of Climate Science	Applied Mathematics
Energy and Environment	Ecology
Environmental Geosciences	
Environmental Laboratory for Climate Scientists	
Research Methodology and Thesis Writing	
Law and Policy for Climate Change	
Environmental Law and Policy	
Introduction to Sustainable Development	
Environmental Statistics	

Semester II	
<b>CORE:</b>	<b>ELECTIVE:</b>
Climate Change: Vulnerability, Impacts, Adaptation, and Resilience Mitigation of Climate Change	Principles of Geoinformatics
Technical Writing	Air Pollution and Climate Change
	Seminar Course in Global Change
	Basic Course in Environmental and Resource Economics

Semester III	
<b>ELECTIVES:</b>	
<b>Policy:</b>	<b>Science:</b>
Minor Project	Groundwater Hydrology and Management
Industrial Ecology	Environmental Modelling
Integrated Impact Assessment	Water and Wastewater Treatment Processes and Design
Food Security and Agriculture	Satellite Meteorology
Governance and Management of Natural Resources	Integrated Watershed Management
Independent Study	Multivariate Data Analysis
Governance of Climate Change	Wildlife Conservation and Management
Environmental Economics	Climate Modelling
Environmental Management System	Geoinformatics for Resource Management

Semester IV
<b>MAJOR PROJECT</b>
Major project is an essential component of the curriculum, the students are required to work for their major project for 4-6 months. Students are expected to have an external, an internal supervisor and a specific research problem for the major project. Students are also expected to submit a dissertation at the end of the internship and make a presentation, both of which are evaluated by a panel of faculty members and an external expert.

## Our Faculty



### **Dr. Prateek Sharma**

*Dr Prateek Sharma, Dean (Academics) and Professor, Department of Energy and Environment.*

His general interest lies in environmental modelling, statistical applications in environmental and water resources engineering, and environmental risk assessment.



### **Dr. Suresh Jain**

*Dr Suresh Jain, Head of Department and Professor, Department of Energy and Environment*

His research areas include air quality modelling and management, environmental health and risk assessment, integrated impact assessment, and life cycle analysis.



### **Dr. Chubamenla Jamir**

*Dr Chubamenla Jamir, Assistant Professor, Department of Natural Resources*

Her research and teaching includes, ground level ozone and climate change impacts on agricultural crop yield, climate change adaptation, food security, and livelihood options.



### **Dr. Kamna Sachdeva**

*Dr Kamna Sachdeva, Associate Professor, Department of Natural Resources*

Her research area lies in Aerosols Science (characterization and assessment) with a special interest in carbonaceous aerosols and its linkages with climate change.



### **Dr. Chander Kumar Singh**

*Dr Chander Kumar Singh, Assistant Professor, Department of Natural Resources*

Chander Kumar Singh joined TERI SAS in September, 2011. Having profound interest in fields like remote sensing and GIS applications, Hydrogeology, Geophysics, Water Resource Management, Geology. He collaborates with Columbia University, New York and Massachusetts Institute of Technology, Boston and Michigan State University, USA.





### **Dr. Arun Kansal**

*Prof. Arun Kansal is Dean (Research and Relationships) TERI SAS*

His areas of research includes water resource management, waste management with a focus on resource recovery and recycling, urban environment, and energy- environment - climate linkages.

*He is a recipient of Best Teacher Award from GGS Indraprastha University, India; Best Research Paper Award from Indian Water Works Association, and has received the Roll of Honor by TERI. In his academic career, Prof Kansal has been a visiting Professor (as ICCR Chair Professor from Government of India) to Freie University, Berlin, Germany during 2010-11, an Honorary Senior Research Fellow at the University of Birmingham, UK (2011-14), Visiting Professor at the University of Derby in Natural Sciences.*



### **Dr. Sudipta Chatterjee**

*Dr Sudipto Chatterjee, Head of Department and Associate Professor, Department of Natural Resources*

He has been passionately working on conservation of forests and biodiversity for the past 22 years. His major work is based on forest management, vegetation, wetland, and wildlife conservation.



### **Dr. Smriti Das**

*Dr Smriti Das, Associate Professor, Department of Policy Studies*

Her interdisciplinary training and experience in implementation of development projects has given her research an edge, especially in the area of managing natural resources. She has looked extensively at the issue of diversion of forest land for non-forest use (from a political economy perspective) and issues pertaining to rural development in India.



### **Dr. Neeti**

*Dr Neeti, Assistant Professor, Department of Natural Resources*

A quantitative geographer who specializes in GIS and remote sensing, her research interests focus on the development and application of spatio-temporal techniques to study the physical environment. Much of her work has focussed on developing improved algorithms that enable the mapping and monitoring of forest carbon stock, land use/land cover transition at regional and global scale, and analysing associated uncertainties. She teaches courses on spatial statistics, multivariate statistics, and applications of Geoinformatics for natural resource management.



### **Dr. Anu Rani Sharma**

*Dr Anu Rani Sharma, Assistant Professor, Department of Natural Resources*

Her research interest includes, atmospheric aerosols and trace gases, ground measurements, solar irradiance, climate change, satellite remote sensing of air pollution and radiative forcing.



### **Dr. Shiju M V**

*Dr M V Shiju, Associate Professor, Department of Policy Studies*

He is involved in teaching and research on Environmental Law, Regulatory and Competition Law, and Infrastructural Law.



### **Dr. Nirupam Datta**

*Dr Nirupam Datta, Assistant Professor, Coca-Cola Department of Regional Water Studies*

Dr Nirupam Datta is an economist by training. He has received his PhD from Indira Gandhi Institute of Development Research (IGIDR), Mumbai. His current research interests are agriculture and resource economics, health & nutrition, and housing issues.



### **Dr. Udit Soni**

Dr Udit Soni's research focuses on the synthesis of nanocrystals for the study of fundamental science and economic applications. He is actively involved in research and is developing new materials exhibiting bright luminescence and light harvesting; the ultimate aim being applications in photocatalysis, LEDs, photovoltaics, biological labeling and sensor technology applications. He is also working on developing non-toxic materials as an alternative to cadmium chalcogenides.

## **Guest Faculty**

1. **Dr. Lakshmi Raghupathi** (Former Director MoEF and advisor on environment and waste management)
2. **V. Subramanian** (UGC Emeritus Fellow, Environmental Science)
3. **V K Srivastav** (Professor of Anthropology, University of Delhi)
4. **Dr. Mala Narang Reddy** ( Ph.D. in Social Anthropology)
5. **Prof. C K Varshney** (Professor Emeritus, School of Environmental Sciences, Jawaharlal Nehru University)
6. **Dr. Eddy Moors** (Professor at the VU University Amsterdam; Rector of IHE Delft).

## Seminars, Workshops & Field Trips

Each study tour group was intended to expose students to an urban area issue, a rural area and a natural habitat. They were not programme specific tours, but exposed students to multi-disciplinary environment, management and development issues related to each of these habitats.

### Agra, Rithala Study Tour:

Students gained knowledge on what was a combination of both the modern technical approaches to sustainability issues as well as a historical perspective on the same:

1. A visit to the Dayalbagh Technical University, Agra gave insights to the students on solar technologies like solar agricultural stands and the functioning of the inhouse solar cookers of the men's hostel in the college.



*Solar technologies at Dayalbagh Technical University*

2. Visit to various historical monuments like Fatehpur Sikri and Agra Fort gave insights on sustainability in the historical times seen in Mughal architecture like the natural cooling systems and water collection and distribution systems.
3. The students also visited a sloth bear rescue centre at Sur Sarovar Bird Sanctuary and attended a talk on the status of sloth bears in India conducted by conservationists and rescue workers.



*Sloth bear rescue centre at Sur Sarovar Bird Sanctuary*

## Alwar, Jaipur Study Tour:

Some of the areas that were covered during this field visit were:

1. Alwar Wastewater Treatment plant: This Wastewater Treatment Plant removes contaminants from wastewater, household sewage and industrial wastewater. The effective Wastewater Treatment Plant removes all types of contaminants (physical, chemical, and biological). In an environmentally-safe manner.
2. The three-day trip was filled with learning and new experiences; students got a chance to stay in TBS Ashram where they learned about the principles that TBS believes in and how each member contributes in conserving and appreciating the resources. Students learned about the heritage and culture and the importance of resources, traditions and flora-fauna in people's lives.

The Jaipur study group visited the Sariska Tiger Reserve, Chokhi Dhani and Nahargarh Forts, Barefoot College at Tilonia that extensively promotes women's empowerment and sustainable development. The students were given insights about human-wildlife conflicts, conservation practices of national monuments.

## Study Trip to DJB Sewage Treatment Plant, Rithala, Delhi

As a part of the coursework of Water Quality Management, the students visited DJB Sewage Treatment Plant, Rithala, Delhi. The students studied the functioning of the sewage treatment plant and its efforts towards treating and purifying the waters of the river Yamuna.



This first time visit of a large sewage treatment plant provided essential guidance towards understanding the scientific mechanisms of water service provision both in terms of quantity and quality. The treatment plant provided students with stepwise treatment processes of the water obtained from Upper Ganga canal and River Yamuna.



## Mukteshwar Study Tour:



*Organic farming and Sustainable Rural Development*

The group visited TERI Mukteshwar campus and were exposed to TERI's efforts towards organic farming and sustainable rural development.

Subsequently the trips to Nainital and Jim Corbett National Park provided a great opportunity to make new friends and acclimatize to a new way of learning.

The exposure to villages adapting to sustainable technologies, attending conferences themed towards gender equity in rural India and following the tiger trails of Jim Corbett created a wonderful learning experience, which in turn played an important role in the understanding of issues and ground realities of environmental problems.

## Dehradun, Roorkee Study Tour:

Club Dehradun and Roorkee together and the contents too. which should be followed by following

Here students were told about the aspects of hydrology and water resources, impact of climate change on water resources and about the ongoing researchers on integrated water resources management, flood and drought management and various research and work on hydropower generation. At the Central Building Research Institute (CBRI) students came to know about the various work done in setting up standard parameters and development in the field of building science and technology. Robbers cave being the natural water body students learned about the necessity of our resources and how it affects and support the livelihood for many.

The group visited Central Building Research Institute (CBRI), National Institute of Hydrology (NIH), and attended expert seminars and lectures at Department of Biotechnology, IIT Roorkee.

The group visited Tehri Dam, Robber's cave, Dhanaulti Eco Park and attended expert lectures at the Forest Research Institute and Wildlife Institute of India.

## India Meteorological Department (IMD)

The students of Climate Science and Policy visited the Balloon Launching Station, India Meteorological Department (IMD), Delhi, Arjangarh. Students were made to understand the Direct Observational



***Balloon launching***

Techniques of atmospheric parameters. Direct techniques, like radiosonde were also carried out.

The students of M.Sc in Climate Science and Policy were taken to India Meteorological Department on September 2016 to witness a balloon launch. The main purpose of the trip was the to provide the students with the practical knowledge and introduce them to with the systematic methodology of the Balloon launch.

## Agumbe, Karnataka

Camping out in the middle of the jungle, living so close to nature and observing the unique wildlife of the rainforest the students were asked to study different animals. Being exposed to techniques such as setting up camera traps, radio detection

of animals and also identifying species through their unique characteristics played an important role in understanding of biodiversity, its importance and conservation. This completely field- based experience also taught the students, values and philosophies associated with this area of study.

## GOA

The trip to Goa was about studying how climate change has impacted the coastal region and livelihood of Goa.

Though Goa is surrounded by ocean but through local surveys and knowledge it was found that most of the south Goa region faces severe freshwater problems particularly affecting the livelihoods of people living on the edge or near the beaches. The local shack businesses are amongst the highly impacted as they keep shifting away from water due to sea level rise leading to coastal erosion. Effectual strategies like dune fencing, rock revetments etc have been adopted in North Goa beaches in order to deal with the issue of coastal erosion.

TERI Goa has taken up such initiative to come up with cost effective techniques through practical implementation of traditional and basic knowledge in order to increase the output in the affected sectors especially fisheries.



*Salt Manufacturing (in process)*

to local areas of Goa and a number of coastal walks at the beaches which helped the students understand the diverse flora and fauna at these locations.

Visits to TERI Goa and The National Institute of Oceanology (NIO) helped the students to explore more about these institutions for their future research and study and to know about the current projects being undertaken by these. The trip also included visits



*National Institute of Oceanology*

## **Study Trip to Mangar Bani Forests, IARI, Brahma Kumaris Center Learning Rajyoga Meditation**

This trip aimed towards studying the dominance and richness of various plant species, this one day trip was experience in learning the methods of calculating various Indexes such as Simpson and Shannon Weiner. Being a part of this trip enhanced the knowledge of statistical study of biodiversity an understanding of vegetation in relation to climate and land use patterns.

The visit to the entomology department of Indian Agricultural Research Institute was an eyeopener to the vast collection of insects of India, the processes behind their taxonomy, identification and preservation. The trip also educated the students about the history of entomology in India, its significance in the world and the various avenues of scope of further research and exploration. The tour was followed by a short visit to the National Agriculture Museum which provided further knowledge about the history and culture of agriculture in India, its various technologies and practices through the ages and therefore its development aimed towards food security.

The visit was arranged as a practical lesson on how renewable energy can be integrated into daily living. It was also an opportunity of seeing a practical application of Feed in Tariff mechanism that is one of the methods, to use of renewables or non-conventional sources of electricity in day to day life. Over the years the "Brahma Kumaris" has various conferences, workshops and trainings on awareness, environment and solar technologies.

The 450 KW solar power plant installed in its facility is one of the largest of its kind in India and has been partially sponsored by of Conventional Energy Sources, Govt. of India. This helps their facility take care of its own electricity needs and during winter, diesel generators are also utilised



for electricity production. The facility employs technology steam generated during the process to fuel its heat requirements as well leading to increased energy efficiency. Electricity that is generated, after fulfilling the needs of the campus is fed into the main electricity grid, thereby reducing their fossil electricity demand.



*Solar technology being used at the Brahma Kumari Facility*

## **European Regional Spring Conference 2017 in Berlin, Germany**

Attended by some of the scholarship recipients of TERI SAS, the Open Society Foundations Scholarship Programs was held in the year of 2017 European Regional Spring Conference. The conference was a event on April 5 and April 6, 2017 at Steigenberger Hotel in Berlin, Germany. The European Regional Spring Conference was an important opportunity for OSF Scholarship Programs Recipients to meet and to build professional networks with other fellow grantees from around the world, as well as participants' research works was discussed and during the time ideas relating to the advancement of open societies in different contexts was deliberated. It was also a chance for all participants to learn more about the work of the Open Society Foundations, and to find out how individual goals may relate to his/her own research and . The conference would bring together recipients of Civil Society Leadership Awards Scholarship from the host institutions in Europe and Asia, grantees of Disability Rights Scholarship program, Civil Society Scholar Awards Program, as well as the program staff members of Open Society Foundations and OSF guest speakers also participated in the session.

## **Mini-BLISS Schools 2017**

A series of Mini-BLISS schools on sustainable development are organized by the TERI SAS, with support from the United Nations Environment Programme (UNEP) and the European Union, targeted towards underprivileged students of Higher Secondary level (11th and 12th standard) in Delhi NCR and Hyderabad. The schools had introduced sustainable development concepts in 30 low-income public schools of Delhi and Hyderabad, aiming to provide exposure to around 900 students and teachers. The sessions at these Mini-BLISS Schools has been led by the postgraduate and PhD scholars of TERI SAS.

# STUDENT PROFILES

## M.Sc. (Environmental Studies and Resource Management)



### ANCHAL SUSHEEN

**Academic Background** : B.A. Economics (Hons)

**College** : Miranda House College, University of Delhi

**Minor Project** : Management of produced water from Coalbed Methane Plants in Jharia, Jharkhand

**Internship Experience** : ONGC




### AKASH RATAN GUPTA

**Academic Background** : B.Sc. (Hons) Zoology

**College** : St. Xaviers College Ranchi


**Minor Project** : Rural Out-Migration from Mid-Hills of Upper Ganga




**AKSHAYA R**  
**Academic Background** : B.Sc. Chemistry, Environmental Science, Zoology  
**College** : St. Joseph’s College, Bangalore  
**Minor Project** : River Health Assessment- Status of River Ganga at Haridwar  
**Internship Experience** : PSI Dehradun, Tern up- Caddisfly



**ANAMIKA GHOSHAL**  
**Academic Background** : B.Sc. (Hons) Zoology  
**College** : Sri Aurobindo College, University of Delhi  
**Minor Project** : Spatial analysis of water infrastructure in Ramganga basin to delineate prospective areas for supporting the implementation of Underground Taming of Floods for Irrigation(UTFI) Project  
**Internship Experience** : International Water Management Institute (IWMI)



**ANIKET CHANDRA**  
**Academic Background** : B.A. (Hons) Geography  
**College** : Shaheed Bhagat Singh College, University of Delhi  
**Minor Project** : Evaluation of CMIP5 model of surface ozone for health impact studies  
**Internship Experience** : Indian Institute of Technology, Delhi



**ANKIT SANHOTRA**  
**Academic Background** : B.Sc. (Life Sciences)  
**College** : Dyal Singh College (Day) University of Delhi  
**Minor Project** : Comparative Biodiversity Assessment of class insecta for both the reclaimed and unreclaimed coal mined area at TERI-BCCL India Project site (Muraidih, Dhanbad)  
**Internship Experience** : The Energy and Resource Institute, Delhi, IGNOU (Indira Gandhi International Open University)



### ANKUR MALYAN

**Academic Background** : B.Sc. (Hons) Chemistry  
**College** : Kirori Mal College, University of Delhi  
**Minor Project** : Review of soil and water quality of Ramganga Basin including preparation of Industrial Database and finding out relation between industries and heavy metal contamination of the region.  
**Internship Experience** : International Water Management Institute (IWMI), International Research and Innovation Fair (IRIS)



### ANUJA BHARADWAJ

**Academic Background** : B.Sc. Environmental Science, Botany and Geography  
**College** : The IIS university, Jaipur  
**Minor Project** : Secondary Spatial Analysis of water infrastructure in Ramganga basin to delineate prospective areas for supporting the implementation of Underground Taming of Flood for Irrigation (UTFI) Project.  
**Internship Experience** : International water management institute (IWMI)







### ASHA

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Sri Aurobindo College, University of Delhi  
**Minor Project** : To investigate the role of Lantana camara on below ground biodiversity of Arbuscular Mycorrhizal Fungi  
**Internship Experience** : Innovation Project, Sri Aurobindo college, University of Delhi



### AYUSHI BABUTA

**Academic Background** : B.Sc. (Hons) Chemistry  
**College** : Gargi College, University of Delhi  
**Minor Project** : Health Impacts and Livelihood Vulnerability of outdoor workers exposed to air pollution and extreme weather events in Delhi-NCT  
**Internship Experience** : TERI SAS

	<p><b>CHETNA NAGPAL</b></p> <p><b>Academic Background</b> : B.Sc. (Hons) Chemistry</p> <p><b>College</b> : Kirori Mal College, University of Delhi</p> <p><b>Minor Project</b> : Review of Water and soil quality in Ramganga Basin including preparation of industrial data and finding out the relation between industries and heavy metal contamination of the region.</p> <p><b>Internship Experience</b> : International Water management Institute (IWMI), Kirori Mal College, University of Delhi</p>
	<p><b>CHINMAYEE MALLICK</b></p> <p><b>Academic Background</b> : B.Tech (Electrical Engineering)</p> <p><b>College</b> : Veer Surendra Sai University of Technology, Odisha</p> <p><b>Minor Project</b> : Analysis of forest fire and biomass burning aerosols over Mizoram, Northeast India using remote sensing</p> <p><b>Internship Experience</b> : TERI, OPTCL, Odisha</p>
	<p><b>DRISHTI MODI</b></p> <p><b>Academic Background</b> : B.Sc. (Hons) Zoology</p> <p><b>College</b> : Sri Venkateswara College, University of Delhi</p> <p><b>Minor Project</b> : Study of Cashew cultivation in Sangameshwar Taluka of Ratnagiri district, Maharashtra</p> <p><b>Internship Experience</b> : Applied Environmental Research Foundation (AERF)</p>
	<p><b>GAURI ARORA</b></p> <p><b>Academic Background</b> : B.Sc. (Hons) Zoology</p> <p><b>College</b> : Deshbandhu College, University of Delhi</p> <p><b>Minor Project</b> : Analysis of factors contributing towards the decline of crop productivity, in high altitude regions of Uttarakhand.</p> <p><b>Internship Experience</b> : HI AWARE (TERI)</p>



### **IPSHITA ADHYAPAK**

**Academic Background** : B.Sc. (Hons) Life Sciences  
**College** : St. Xaviers, Mumbai  
**Minor Project** : Coral Identification and study of bleaching in the Andaman archipelago  
**Internship Experience** :



### **MAHASWETA PATNAIK**

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Acharya Narendra Dev College, University of Delhi  
**Minor Project** : Analysis of factors contributing towards the decline of crop productivity, in high altitude regions of Uttarakhand (A case study of Guptkashi and Huddu)  
**Internship Experience** : HI-AWARE Project, Zostel Hospitality Private Limited.



### **MONICA BADOLA**

**Academic Background** : B.Sc. (Hons) Physical Sciences  
**College** : Maitreyi College, University of Delhi  
**Minor Project** : Factors affecting agriculture in the mid-hills region of Uttarakhand  
**Internship Experience** : TERI (HI-AWARE Project)



### **MOUNISHA SAMANTA**

**Academic Background** : B.Sc. (Hons) Environmental Science  
**College** : Vivekananda College, Calcutta University  
**Minor Project** : Environmental Status Plan for Hapur  
**Internship Experience** : CPCB (Central Pollution Control Pollution Board)



### NEHA CHAUHAN

**Academic Background** : B.Sc. (Hons) Life sciences  
**College** : Gargi College, University of Delhi  
**Minor Project** : Decentralized Waste Management  
**Internship Experience** : International Academy of Environmental Sanitation and Public Health



### NITIKA DAGAR

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Sri Venkateswara College, University of Delhi  
**Minor Project** : Composting as technology for effective solid waste management and its market in India  
**Internship Experience** : Centre for Science and Environment



### NIVEDITA SINHA BORTHAKUR

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Miranda House, University of Delhi  
**Minor Project** : Effect of different titanium dioxide nanoparticles on seed germination and plant growth  
**Internship Experience** : The Energy and Resources Institute (TERI) and University of Delhi Innovation Project (Miranda House)



### PANDEY PRESHITA HERSH

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Miranda House, University of Delhi  
**Minor Project** : Nagaland-state of environment report 2017  
**Internship Experience** : TERI, New Delhi



### PURVA MADAN

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Maitreyi College, University of Delhi  
**Minor Project** : Case study of agriculture in village Hakimpur Turra, Uttarakhand: Drivers of change in agriculture  
**Internship Experience** : TERI, New Delhi



### RAHUL KUMAR

**Academic Background** : B.Sc. Geology, Zoology, Chemistry with Botany (major subject)  
**College** : Fergusson College, Pune University  
**Minor Project** : Microbial diversity and population assessment in restored and degraded coal mined area  
**Internship Experience** : TERI SAS-BCCL-Coal Landscape Restoration Project



### RASHMI KULRANJAN


**Academic Background** : B.Sc. Chemistry, Environmental Science & Botany  
**College** : St. Joseph's College (Autonomous), Bangalore  
**Minor Project** : Analysis of environmental performance of the automobile industry  
**Internship Experience** : VNV Advisory LLP, R.S Enviro Engineers, Ternup Research Labs LLP, GE Industrial Solutions.





### RASHMI SINGH


**Academic Background** : B.Sc. (Hons) Zoology  
**College** : Gargi College, University of Delhi  
**Minor Project** : Role of adult males in multimale society of central Himalayan langur in the western Himalayas  
**Internship Experience** : Primate Research Institute, Kyoto University, Japan



	<p><b>RASHMICK BOSE</b></p> <p><b>Academic Background</b> : B.Sc. (Hons) Zoology</p> <p><b>College</b> : Asutosh College, University of Calcutta</p> <p><b>Minor Project</b> : Policy review to identify various institutional measures towards ensuring universal access to piped drinking water supply across rural India</p> <p><b>Internship Experience</b> : WaterAid India</p>
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	<p><b>RIYA GOSAIN</b></p> <p><b>Academic Background</b> : B.Sc. (Hons) Microbiology</p> <p><b>College</b> : Institute of Home Economics, University of Delhi</p> <p><b>Minor Project</b> : Bioremediation of organophosphate pesticide Parathion, with microbes isolated from contaminated soil</p> <p><b>Internship Experience</b> : TERI, New Delhi, Asian institute of medical sciences.</p>
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	<p><b>SAJIB MANASH MAHANTA</b></p> <p><b>Academic Background</b> : B.Sc. (Hons) Botany</p> <p><b>College</b> : Ramjas College, University of Delhi</p> <p><b>Minor Project</b> : Comparative analysis of untreated and algae treated rubber wastewater for sustainable water usage in rubber latex coagulation.</p> <p><b>Internship Experience</b> : TERI-NERC, Guwahati, NCBS, British Council, Jenesys India</p>
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	<p><b>SAKSHE VASUDEV</b></p> <p><b>Academic Background</b> : B.Sc. (Hons) Biological Sciences</p> <p><b>College</b> : Sri Venkateswara College, University of Delhi</p> <p><b>Minor Project</b> : Estimation of exhaust emissions of vehicles of Ghaziabad</p> <p><b>Internship Experience</b> : CPCB, JNU, Umeed Foundation</p>
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### **SANJNA SEHGAL**

**Academic Background** : B.Sc. (Hons) Geography  
**College** : Shri Shikshayatan College, University of Calcutta  
**Minor Project** : Assessment of air quality management of cities in India  
**Internship Experience** : Clean Air Asia, Delhi



### **SHELJA ALAWADHI**

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Ramjas College, University of Delhi  
**Minor Project** : Laboratory analysis of water treated by Effluent Treatment Plant and Air Monitoring  
**Internship Experience** : National Fertilizers Limited, Panipat; India Redefined, New Delhi




### **SHIFALI GULERIA**

**Academic Background** : B.Sc. (Hons) Botany  
**College** : Maitreyi College, University of Delhi  
**Minor Project** : Case study of agriculture in village Hakimpur Turra, Uttarakhand: Drivers of Change in Agriculture  
**Internship Experience** : TERI, New Delhi.



### **SHIVANGI AGGARWAL**

**Academic Background** : B.Sc. (Hons) Chemistry  
**College** : Gargi College, University of Delhi  
**Minor Project** : Secondary analysis of drivers and barriers of corporate procurement of renewable energy; sustainability initiatives by Indian retailers  
**Internship Experience** : WorldWide Fund for Nature (WWF-India)




**SHREEYA SHUKLA**

**Academic Background :** B.Sc. Environmental Science and Zoology, Chemistry with Botany(major subject)

**College :** Fergusson College, Pune University

**Minor Project :** Assessment of soil nutrients in restored and degraded coal mined area

**Internship Experience :** TERI SAS and BCCL




**SHREYASI PAL**

**Academic Background :** B.Sc. (Hons)Geography

**College :** Shri Shikshayatan College, University of Calcutta

**Minor Project :** Study on utilising lessons of past disaster reviews in integrating risk management into plans or activities of key government departments: Case of Uttarakhand flood 2013

**Internship Experience :** National Institute of Disaster Management, New Delhi




**SNEHA HARIDAS**

**Academic Background :** B.Sc. (Chemistry, Environmental Science and Zoology)

**College :** St Joseph's College (Autonomous), Bangalore

**Minor Project :** Analysis of environmental performance and sustainability measures of textile companies.

**Work/Internship Experience :** VNV Advisory LLP, Bangalore, Ternup Research Labs LLP, MGIRED and Anne Foundation Inc.



**TASHI TSHOMO**

**Academic Background :** B.Sc. (Hons) Environmental Science

**College :** Fergusson College, Pune University

**Minor Project :** Decentralized Waste Management

**Work/Internship Experience :** International Academy of Environmental Sanitation and Public Health, National Environment Commission, Bhutan



### URVIYA HASAN

**Academic Background** : B.Sc. (Hons) Zoology  
**College** : Gargi College, University of Delhi  
**Minor Project** : Labour Issue in the Spinning Mills of Tamil Nadu  
**Internship Experience** : Centre for Responsible Business (CRB)



### VAISHNAVI BARTH WAL

**Academic Background** : B.Sc. (Hons) Environmental Science  
**College** : The Maharaja Sayajirao University of Baroda, Vadodara  
**Minor Project** : Health impacts and livelihood vulnerability of outdoor workers exposed to air pollution and extreme weather events in Delhi  
**Internship Experience** : TERI SAS, Forest Research Institute, Dehradun



### VARSHA B

**Academic Background** : B.Sc. (Environment Science, Zoology, Chemistry)  
**College** : St Joseph's College (Autonomous), Bangalore  
**Minor Project** : Oral History of the Slender Loris In Bengaluru - A Conservation Standpoint.  
**Internship Experience** : Azim Premji University, Bengaluru, North carolina State University, North Carolina, KCRE, DEWATS(CDD Society), Mysore Zoo



### VENETIA SHARANYA

**Academic Background** : B.Sc. (Environment Science, Zoology, Chemistry)  
**College** : Mt Carmel College, Bangalore  
**Minor Project** : Monitoring wildlife in human dominated landscape  
**Internship Experience** : IISc, Madras Crocodile Bank trust, ATREE, Bangalore needs you, National Institute for Advanced Sciences



## ZINABU ASSEFA ALEMU

**Academic Background** : B.Sc. (Applied Chemistry)

**College** : Hawassa University (Ethiopia)

**Minor Project** : Physicochemical quality assessment of drinking water supply in Addis Ababa city

**Work/Internship Experience** : Ethiopian Agricultural Research Institute (EARI), Ethiopian Public Health Research Institute (EPHI)

# STUDENT PROFILES

## M.Sc. (Climate Science and Policy)



### AANCHAL PRUTHI

**Academic Background** : B.Sc. (Hons) Zoology  
**College** : Gargi College, University of Delhi  
**Minor Project** : Evaluation of WRF-Chem Model in  
simulating Meteorology  
**Internship Experience** : Innovation Project (University of Delhi)



### ABHISHEK BHATIA

**Academic Background** : B.Sc. (Hons) Physics  
**College** : IGNOU  
**Minor Project** : Radiative transfer modeling SBDART  
sensitivity studies  
**Internship Experience** : IIT-Delhi



### ARUSHI NANDI

**Academic Background** : B.Sc. (Hons) Zoology  
**College** : Ramjas College, University of Delhi  
**Minor Project** : Water Footprint of Health Care Institutes and how it can be improved  
**Internship Experience** : Public Health Foundation of India, TERI School of Advanced Studies



### ASPRIT KAUR

**Academic Background** : B.Sc. Environmental science, Chemistry and Zoology  
**College** : Mount Carmel College (Autonomous), Bangalore University  
**Minor Project** : Carbon Footprint of Textile Industry: A case Study  
**Internship Experience** : Independent research, funded by TREND Bengaluru; Indian Meteorological Department, New Delhi; Nature Environment and Wildlife Society, Kolkata; ICCE, Mumbai



### DEEPSHIKHA SINGH

**Academic Background** : B.Sc. (Non-Medical)  
**College** : Post Graduate Government College for Girls, Sector-11 Chandigarh  
**Minor Project** : GHG Inventory of Delhi and Uttarakhand  
**Internship Experience** : TERI SAS; Punjab University; ABC live Green NEWS Column



### GEZAHEGN BEKELE TASHEBO

**Academic Background** : B.Sc. (Meteorological Science)  
**College** : Arbaminch University in Ethiopia  
**Minor Project** : Analysis of Temperature & Rainfall Trends in Addis Ababa City  
**Internship Experience** : NMA (National Meteorological Organization of Ethiopia)



### **KARTIKAYE MADHOK**

**Academic Background** : B.Tech (Civil Engineering)

**College** : M.S. Ramaiah Institute of Technology  
(Affiliated to Visvesvaraya Technological  
University)

**Minor Project** : Agriculture in the high Himalayas  
through a Climatic and Gendered Lens

**Internship Experience** : ICIMOD and TERI; Wildervibe



### **KRITIKA GULATI**

**Academic Background** : B.Sc. (Hons) Physics

**College** : Sri Guru Tegh Bahadur(SGTB) Khalsa  
College, North Campus, University of  
Delhi

**Minor Project** : Documentation of NERLP Project run by  
World Bank and Government Bank and  
understanding maize market in Udaipur  
city.

**Internship Experience** : KABIL; DAAD; WWF Volunteer



### **M AISHWARYA**

**Academic Background** : B.Sc Environmental science, Chemistry  
and Zoology

**College** : St.Joseph's College, Bangalore

**Minor Project** : Analysis of the Environmental  
Performance of Paint Industry

**Internship Experience** : VNV Advisory LLP



### **MAHIMA RANA**

**Academic Background** : B.Sc. (Hons) Chemistry

**College** : Maitreyi College, University of Delhi

**Minor Project** : Training Needs Assessment and the  
Clean Air Knowledge Network for Air  
Quality Management in India

**Internship Experience** : Clean Air Asia, India





### MANAN PARASHAR

**Academic Background** : B.Sc. (Hons) Physics  
**College** : Sri Venkateswara College, University of Delhi  
**Minor Project** : Livelihood Vulnerability Index (Climate Change and Air Pollution)  
**Internship Experience** : TERI SAS



### MEKHALA SASTRY

**Academic Background** : B.Sc. Environmental Science, Chemistry, Zoology  
**College** : Mount Carmel College Autonomous, Bangalore University  
**Minor Project** : Status of Water Resources in Karnataka  
**Internship Experience** : Public Affairs Centre, Bangalore



### MONIKA CHAKRABORTY

**Academic Background** : B.Sc. (Hons) Chemistry  
**College** : Zakir Husain Delhi College, University of Delhi  
**Minor Project** : To Study the Direct Radiative feedback of Dust Aerosols on Indian Summer Monsoon Circulation using RegCM Model 4.4  
**Internship Experience** : IIT Delhi



### PRANTIK MITRA

**Academic Background** : B.Sc. (Hons) Geography with Mathematics and Geology  
**College** : Presidency University, Kolkata  
**Minor Project** : Investigating the response of Indian Summer Monsoon to Black Carbon Emissions- Using CESM-CAM 5.0  
**Internship Experience** : IIT-Delhi; TERI SAS; Indian Meteorological Department, New Delhi; Regional Meteorological Department, Kolkata; Microsoft; International Centre for Culture and Education, Mumbai; Catalyst Study Group, Kolkata.



### SACHI VOHRA

**Academic Background** : B.A. (Hons) Geography  
**College** : Shaheed Bhagat Singh College,  
University of Delhi  
**Minor Project** : Pilot District level Climate Change Action  
Plan for the Agricultural Sector of the  
State of Bihar  
**Internship Experience** : DEFT Advisory and Research Pvt. Ltd.;  
Remote Sensing Application Centre  
(Uttar Pradesh)



### SAGARMOY PHUKAN

**Academic Background** : B.Sc. (Hons) Zoology  
**College** : Ramjas College, University of Delhi  
**Minor Project** : Air Quality Monitoring in Dehradun City  
and its Impacts on health.  
**Internship Experience** : Peoples' Science Institute, Dehradun;  
ICMR, Assam; Cytogenetics Laboratory  
AMCH.



### SANYA PRAKASH

**Academic Background** : B.Sc. (Hons) Biomedical Sciences  
**College** : Shaheed Rajguru College of Applied  
Sciences for Women, University of Delhi  
**Minor Project** : Health Impacts and Livelihood  
Vulnerability of outdoor workers  
exposed to air pollution and extreme  
weather events in Delhi-NCT  
**Internship Experience** : TERI SAS; National Physical Laboratory- CSIR.



### SHERRY PANDE

**Academic Background** : B.Sc. (Hons) Zoology  
**College** : Carmel College for Women, Nuvem, Goa  
**Minor Project** : Rural out-migration in Mid Hills of  
Upper Ganga  
**Internship Experience** : TERI (HI-AWARE)



### SHIKHA SINGH

**Academic Background** : B.Sc. (Hons) Life sciences  
**College** : Sri Venkateswara College, University of Delhi  
**Minor Project** : Spatial - temporal distributions of ambient air pollution levels and energy usage across Uttar Pradesh  
**Internship Experience** : Greenpeace Environment Trust

## Placement Procedure and Guidelines for Recruiters

The campus recruitment activity for the MSc (Environmental Studies & Resource Management), MSc (Climate Science & Policy) is conducted to serve dual purposes placement of the students for their final thesis project which is undertaken in the fourth semester and the formal job recruitment on completion of the programme.

### Our placement consists of two-phase process:

Masters' Thesis Project	
Recruitment Period	Availability of Students
November–December 2017	January–June 2018
Job Placement	
Recruitment Period	Availability of Students
November–June 2018	June 2018 onwards

We welcome you to visit our campus for interviewing and selecting the students for fourth semester Masters' Thesis Project and final Placements. You may interact with our students either through telephone, video conferencing, or in person.

Interested organizations may contact the Placement Cell. The contact details are mentioned at the back of the brochure.

## PREVIOUS RECRUITERS

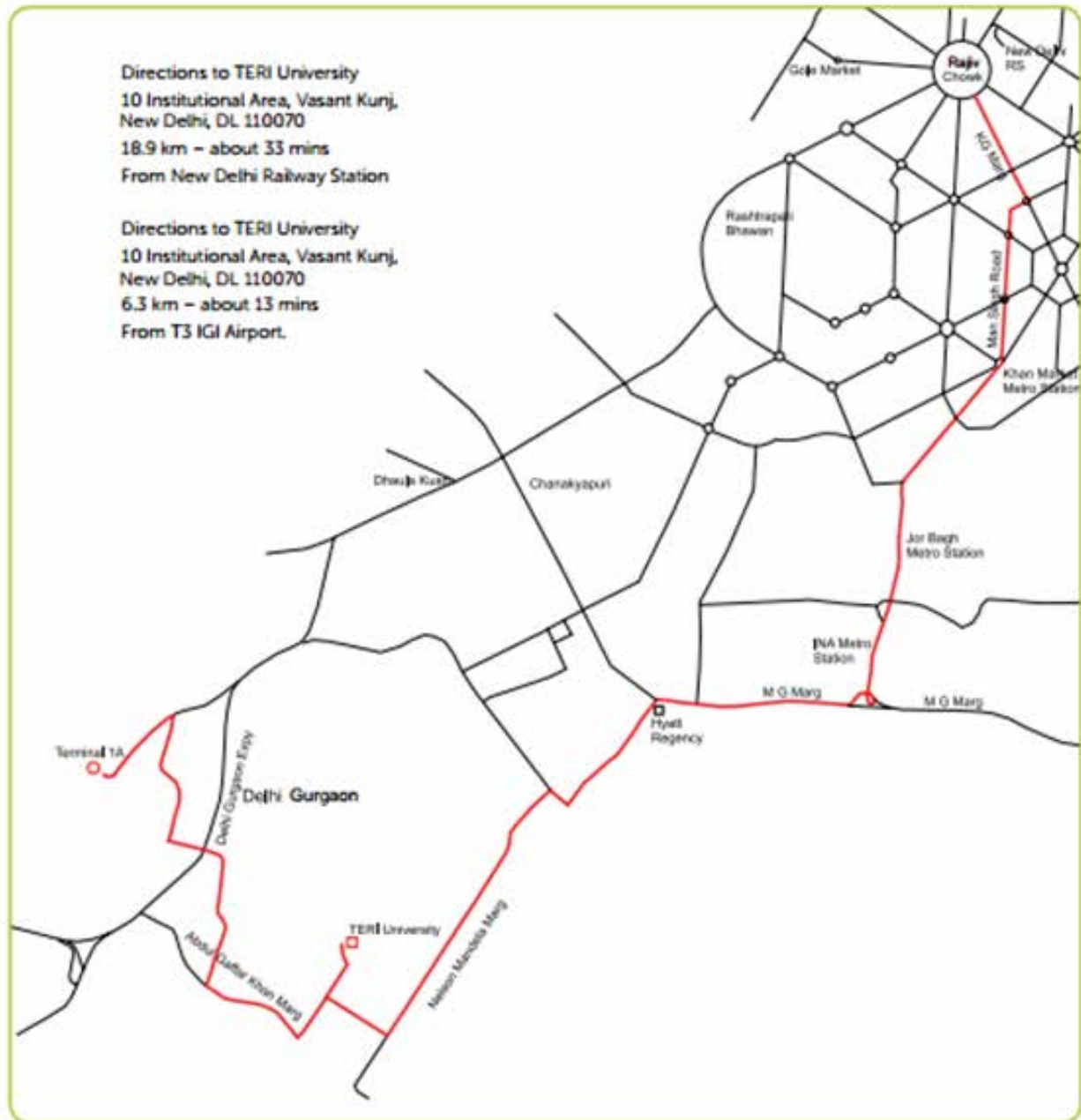
- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Agumbe Rainforest Research Station</li> <li>• Amrut</li> <li>• Applied Environmental Research Foundation (AERF), Pune</li> <li>• Arvind Ltd</li> <li>• Ashden India Energy Collective</li> <li>• Ashoka Trust for Research in Ecology and the Environment (ATREE)</li> <li>• Affinium Solutionz</li> <li>• Amity Institute of Wildlife Sciences, Amity University</li> <li>• BLUE (ACWUS)</li> <li>• Boond, New Delhi</li> <li>• Carbon Minus</li> <li>• Central Pollution Control Board (CPCB)</li> <li>• Centre for Legislative Research and Advocacy (CLRA), New Delhi</li> <li>• Climate Change Department, Government of Gujarat</li> <li>• CII-Triveni</li> <li>• Climate Connect Ltd</li> <li>• Community Empowerment for Progress Organization (CEPO)</li> <li>• CSIR-CRRI</li> <li>• Department of Environment, Govt. of NCT of Delhi</li> <li>• Department of Science and Technology</li> <li>• Development Alternatives</li> <li>• Emergent Ventures</li> <li>• Environmental Management and Policy Research Institute</li> <li>• Forest Research Institute (FRI), Dehradun</li> <li>• Global Health &amp; Safety (GHS)</li> <li>• Gujarat Nature Conservation Society</li> <li>• GIZ India</li> <li>• HCL Foundation</li> </ul> | <ul style="list-style-type: none"> <li>• HCL Technologies</li> <li>• India Meteorological Department (IMD)</li> <li>• Indian Oil Corporation Ltd</li> <li>• Institute for Human Development</li> <li>• Indian Institute for Human Settlements</li> <li>• Indian Institute of Science (IISc), Bangalore</li> <li>• Indian Institute of Technology, Delhi</li> <li>• Indian Institute of Tropical Meteorology</li> <li>• Indian Pollution Control Association</li> <li>• Institute of Environment and Sustainable Development, BHU</li> <li>• International Water Management Institute (IWMI)</li> <li>• Jindal Steel &amp; Power Ltd</li> <li>• Jawaharlal Nehru University</li> <li>• Kalpavriksh, New Delhi</li> <li>• KPMG</li> <li>• Ministry of Environment, Forests and Climate Change, Government of India</li> <li>• MSME Foundation</li> <li>• Mahindra Susten</li> <li>• Meghalaya Basin Development Authority</li> <li>• National Environmental Engineering Research Institute (NEERI), Nagpur</li> <li>• National Centre for Biological Sciences</li> <li>• National Institute of Disaster Management (NIDM)</li> <li>• National Institute of Hydrology</li> <li>• National Institute of Rural Development and Panchayati Raj</li> <li>• National Institute of Urban Affairs (NIUA)</li> <li>• Pitney Bowes</li> </ul> |
|--|---|

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>• Public Affairs Centre, Jigani, Karnataka</li> <li>• Reed Consulting Bangladesh Ltd</li> <li>• Risk Management Solutions (RMS)</li> <li>• School of Computer &amp; System Sciences, JNU</li> <li>• Shakti Sustainable Energy Foundation</li> <li>• SaciWATERS</li> <li>• Sigur Nature Trust</li> <li>• The Centre on Geoinformatics Application in Rural Development (CGARD) under National Institute of Rural Development Panchayat Raj (NIRDPR)</li> </ul> | <ul style="list-style-type: none"> <li>• The Energy and Resources Institute (TERI)</li> <li>• United Nations Economic Commission for Africa (UNECA)</li> <li>• Vasudha Foundation</li> <li>• VNV advisory – CIF</li> <li>• Watershed Organization Trust (WOTR)</li> <li>• Wildlife Research and Conservation Society (WRCS)</li> <li>• Wildlife Trust of India (WTI)</li> <li>• World Wildlife Fund (WWF)</li> </ul> |
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## TIMELINE

	Sept '17	Oct '17	Nov '17	Dec '17	Jan '18	Feb '18	Mar '18	Apr '18	May '18	Jun '18
Pre Placement, Major Projects Talks										
Placement Season and Selection Process										
Students to Join for Major Projects										
Students Available to Join Organization for Job										

## Map to Reach TERI SAS







Knowledge for Sustainable Development

Deemed to be University under Section 3 of the UGC Act, 1956

Accredited with grade 'A' by NAAC

## **PLACEMENT CELL**

### **Faculty Placement Coordinator**

**Dr. Chander Kumar Singh**

Assistant Professor

Department of Natural Resources, TERI SAS

Email: [chander.singh@teriuniversity.ac.in](mailto:chander.singh@teriuniversity.ac.in)

### **Student Placement Coordinators**

**Ankur Malyan**

MSc. ESRM

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**Chetna Nagpal**

MSc. ESRM

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**Sneha Haridas**

MSc. ESRM

Email: [sneha.haridas@students.teriuniversity.ac.in](mailto:sneha.haridas@students.teriuniversity.ac.in)

**Prantik Mitra**

MSc. CSP

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**Mekhala Sastry**

MSc. CSP

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### **For further information, Contact**

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Website: [www.terisas.ac.in](http://www.terisas.ac.in)

Phone: +91 11 71800222, Fax: +91 11 26122874