# 2017 ANNUAL REPORT





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

# ANNUAL REPORT 2017

## **TERI UNIVERSITY**



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## NOTE FROM THE CHANCELLOR

The need for rapid acceleration of sustainability as a way of life and growth is now accepted the world over; the responsibility for this falls on each one of us. With an increasing population, coupled with the current pattern of production and consumption of resources, it is very likely that future generations will struggle for survival in this world. If we cannot reverse the damage done to the planet, we should at least not overload it anymore. In pursuance thereof, the Sustainable Development Goals have been wisely crafted and articulated as the global community's pursuit of sustainable development.

TERI University has paid close attention to the needs for a sustainability path and, over the last 15 years, worked vigorously in facilitating education and research. It has helped create a cadre of professionals ready to take up the challenge of steering the world towards this path.

We have established strong synergies with leading bilateral and multilateral bodies and likeminded institutes so as to ensure that the knowledge base and its practical applications are on par with the latest developments. This ensures that our students graduate from the University act as effective leaders with missionary zeal to uphold the sustainable development agenda.

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Mr Ashok Chawla Chancellor TERI University

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## NOTE FROM THE VICE-CHANCELLOR

With the world grappling to transform itself towards sustainable development – resolving "to free the human race from the tyranny of poverty and want and to heal and secure our planet" – every stakeholder in this process would need to align with the broad goals of sustainable development and mobilise as many as possible to do the same. We have set ourselves a path by which we hope to contribute towards creating a movement towards sustainable development in all its dimensions and across all walks of life. We have, therefore, identified new programmes and experiential learning tools that will be implemented in the short term to plug the gaps towards a more systemic handling of sustainability.

In this effort, the TERI University will be seeking to aggressively strengthen it's partnerships, both nationally and internationally. The upcoming new campuses in Hyderabad and Gauhati will not only increase the supply of sustainability professionals in the country but also provide a strong platform for continuous learning.

The University is also stepping up it's research programme to contribute more effectively to the data and knowledge gaps on sustainability that exist in the country. Engaging the Masters students as well in this effort prepare them better for the work place challenges and would also help meet a national need.

Dr Leena Srivastava Vice-Chancellor TERI University



## NOTE FROM THE PRO VICE-CHANCELLOR

Since 2003, when the first batch of Masters students was admitted in the TERI University, more than 1500 have graduated from the University. These alumni are all over the world, working in various organisations, and in various aspects of sustainable development. What makes them tick?

Creativity is an essential ingredient to problem solving in the domain of sustainability. It is too easy to close minds and think in ways that we have been taught to think. What is required today, however, is an openness in thinking, a fresh approach which would allow the youth to be curious and hence, hopefully, creative.

TERI University's approach from the beginning has been to encourage creativity in its students. This has been an essential ingredient to prepare the students for the challenges that the world is and will be facing. Students are encouraged to think and question; and faculty members are encouraged to foster inter-disciplinary approach and build up, in students, a systemic approach to problem solving.

This is one of the major factors which make TERI University students 'different'.

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



## NOTE FROM REGISTRAR AND HEAD (OUTREACH)

TERI University has evolved across the 2016-17 academic year and the focus as always, was the pursuit of excellence. The University remained committed to excellent education and its implicit stated values of sustainable development. The faculty coalesced with the administrative wing to strengthen the system of imparting knowledge that is interdisciplinary and modern. This enabled the University to undergo the review by UGC committee in 2016 successfully and subsequently receive the UGC approval for extension of Deemed University status.

Development of infrastructure has been critical to supporting and enhancing the University's vision and functions. The special sustainable features of the campus, installation of wind turbine and solar panels, have helped make the existing campus more energy efficient. The University has created new facilities by re-purposing existing areas and renovating them for teaching space, laboratory, faculty chamber and medical room. The IT enabled services have been upgraded to facilitate better access while following latest standards and reliability. In July 2017, we broke ground on TU Hyderabad Campus which would be implemented in two phases and the first phase would cover about 52000 sqft area encompassing the academic, admin and hostel spaces.

Establishment of a Centre for Post Graduate Legal Studies to encourage legal studies was one of the standout moves the University made in the year. The University invested more in the faculty and focused more on supporting research & projects to maximize its impact. The University marked a clear shift of focus towards employee welfare where a permanent cadre of employees was established and the newly created cadre was extended the VIth Pay Commission scales with effect from June 2017.

The office of the Registrar has been committed to keeping the campus shipshape and reviews the processes impacting administration and academics. The support staff has continued to work collaboratively to further refine the critical functions. 2016 was a successful year for the University.

Capt Pradeep Kumar Padhy Registrar and Head (Outreach) TERI University



## DEAN (ACADEMIC)

The University since its inception has been striving to live up to its motto of 'knowledge for sustainable development' and has been offering academic programmes that are unique and have societal relevance in sync with its motto. The nature of the programmes is such that it's imperative that the curricula be updated and reviewed at regular period programmes based on the inputs received from academic, industry, alumni and other stakeholders. In continuation of this philosophy, a major programme review exercise was undertaken by the Department of Energy and Environment for the MTech (Renewable Energy Engineering and Management) and MSc (Climate Science and Policy); and Department of Regional Water Studies for the MTech (Water Science and Governance) and MSc (Water Science and Governance). Inputs were taken from industry, research institutions, academia, and alumni.

A reshuffle in terms of relocation of few programmes was carried out in order to improve their mapping under the relevant Department. In this regard, MSc (Environmental Studies and Resource Management) and MSc (Climate Science and Policy) were relocated to the Department of Energy and Environment. The Department of Natural Resources continues to run the MSc (Geoinformatics) Programme. There are plans to develop Masters programme relevant to Department of Natural Resources in the near future.

All the departments are committed to carry out teaching and research ensuring a multi- and interdisciplinary approach that is required to address complex sustainability issues that cut across disciplinary boundaries. The pedagogy integrates information and knowledge from different disciplines.

Dr Prateek Sharma Dean (Academic) TERI University



## DEAN (RESEARCH AND RELATIONSHIPS)

The year 2016 was important for TERI University as it completed fifteen years of commencement of formal degree programmes. Since its inception, the University has paid attention to facilitate research, innovation and impact; and has put policies and mechanisms to raise its profile and range of research. Research projects are an integral feature of academic programmes at TERI University and student-led research opportunities exist at all stages of study. The university has played a leadership role in demonstrating the extension of research in the curriculum of Master's degree programmes, leapfrogging from the conventional research-informed syllabi to researchled pedagogy and strives to be the first university in India to have research active curriculum. Such transition will enhance learning experience of both students and teachers.

To facilitate this transition, we have been proactive in increasing our partnership with industries on one hand and research institutes on the other. Our collaboration with Environment Protection Training and Research Institute (EPTRI), Hyderabad is of immense importance for us. The objective of this collaboration is to advance the collaborative ideas related to academics and research on various dimensions of Sustainability Science. The University has also kept aside research grants for faculty members and students to enable them to do background work required to increase the quality of research and to disseminate research outputs in conferences and other events. Relevant policies that underpin good scientific research practices will soon be in place and research staff will be organized in High Performance Research Units in the areas of strategic interests of the University.

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Dr Arun Kansal Dean (Research and Relationships) TERI University

## **BOARD OF MANAGEMENT** (1 July 2016 - 30 June 2017)

#### Chairman

**Dr Leena Srivastava** Vice-Chancellor, TERI University

#### **Members**

**Dr Rajiv Seth** Pro Vice-Chancellor, TERI University

#### Deans

**Dr Prateek Sharma** Dean (Academic), TERI University

**Dr Arun Kansal** Dean (Research and Relationships), TERI University

#### **Three Eminent Academicians Nominated by the Chancellor**

**Dr Dipankar Gupta** Former Professor in the Centre for the Study of Social Systems, Jawaharlal Nehru University

**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** Managing Director 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 / Associate Professor)**

Dr Smriti Das Associate Professor, Department of Policy Studies, TERI University

**Dr Anandita Singh** Associate Professor, Department of Biotechnology, TERI University

#### **One Teacher of the Rank of Assistant Professor**

**Dr Soumendu Sarkar** Assistant Professor, Department of Policy Studies, TERI University

#### **Controller of Examination**

**Dr Suresh Jain** Professor, Department of Natural Resources, TERI University

#### Registrar

#### **Capt Pradeep Kumar Padhy (Retd)** TERI University

## ACADEMIC COUNCIL (1 July 2016 - 30 June 2017)

#### **Chairperson of the Council**

**Dr Leena Srivastava** Vice-Chancellor, TERI University

#### **Pro Vice-Chancellor, TERI University**

Dr Rajiv Seth

#### Deans

**Dr Prateek Sharma** Dean (Academic), TERI University

**Dr Arun Kansal** Dean (Research and Relationships), TERI University

#### **Heads of the Departments**

**Prof Manipadma Datta** Department of Business Sustainability, TERI University

**Dr Suresh Jain** Department of Natural Resources, TERI University

**Dr Basudev Prasad** Department of Energy and Environment, TERI University

**Dr Chaithanya Madhurantakam** Department of Biotechnology, TERI University

**Dr Shaleen Singhal** Department of Policy Studies, TERI University

Dr M P Ram Mohan Centre for Post Graduate Legal Studies, TERI University

**Dr Pallavolu Maheswara Reddy** Centre for Bioresources and Biotechnology

**Dr Suneel Pandey** Centre for Regulatory and Policy Research

#### **Professor**

**Prof S Sundar** Emeritus Professor, Department of Policy Studies, TERI University

#### **Associate Professors from Departments**

**Dr Naqui Anwer** Associate Professor, Department of Energy and Environment, TERI University

Dr Anandita Singh Associate Professor, Department of Biotechnology, TERI University

#### **Assistant Professors from Departments**

Dr Anu Rani Sharma Assistant Professor, Department of Natural Resources, TERI University

**Ms Fawzia Tarannum** Lecturer, Department of Regional Water Studies, TERI University

#### **Nominees of the Vice Chancellor**

**Dr Kanchan Chopra** Professor and Former Director, Institute of Economic Growth, New Delhi

**Dr Malathi Lakshmikumaran** Director, Lakshmikumaran & Sridharan

**Prof T C Kandpal** Professor, Centre for Energy Studies, Indian Institute of Technology, New Delhi

#### **Co-opted Members**

**Dr Anubha Kaushik** Professor and Dean, School of Environment Management, Guru Gobind Singh Indraprastha University

**Prof. Vivek Suneja** Dean (Planning), Faculty of Management Studies, University of Delhi

**Dr Rakesh Khosa** Professor, Department of Civil Engineering, Indian Institute of Technology, New Delhi

#### **Secretary**

Capt Pradeep Kumar Padhy (Retd)

Registrar, TERI University

## **STUDENT AND FACULTY STRENGTH**





# **STRUCTURE OF TERI UNIVERSITY AND PROGRAMMES**

### **ABOUT TERI UNIVERSITY**

The TERI University was established to disseminate the vast reservoir of knowledge at 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 University'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 University 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 University started functioning from its '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 University'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 University has structured its academic programmes around the research experience and skill sets gained by TERI over the past four 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.

#### **Departments**

#### **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. The department is actively engaged in research in the area of clean technologies to achieve energy efficiency solutions and minimize adverse environmental impacts related to energy production and use.

#### **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 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 20 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.

#### **Collaborations**

Stressing the importance of the international perspective in its programmes, TERI University 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 University 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 University 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 University has been granted a UNESCO Chair in Climate Science and Policy. This is a prestigious award and given to very few universities across the world. The University 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 University 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.

### **ACADEMIC PROGRAMMES**

The following programmes are offered at the University:

- 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)
- LLM (specialization 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 University 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 University's programmes and is practiced 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 University 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 University 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).

#### **Masters Programmes**

#### MA (Public Policy and Sustainable Development)

Policy decisions by government officials at all levels are required to be increasingly multifaceted, with careful considerations of the dynamics of economic reforms and the need to ensure that decision making contributes to sustainability of the development process. Private, not-for-profit, and for-profit business entities also have a bearing on development-related policy decisions. To respond effectively to these issues, civil servants and those engaged in the non-governmental sectors need to be trained in politics and economics of public policy and in sophisticated methods and tools of analysis; and refresh their knowledge of the substantive development issues at hand.

The MA (Public Policy and Sustainable Development) programme, offered by TERI University, encompasses a comprehensive and well-structured two-year curriculum on public policy formulation, analysis, evaluation, management, and links with development concerns.

With a judicious mix of courses covering basic concepts, a practical orientation, and new methodologies and tools, the programme intends to allow future leaders in the government and other agencies to enhance their awareness about the overall public policy environment, in which they have to take decisions. The programme is also intended to sharpen the understanding of effects that policy decisions have on political, economic, social, and environmental aspects in domestic as well as in international domain.

#### MA (Sustainable Development Practice)

The MA programme in Sustainable Development Practice seeks to address a critical gap in sustainable development education in South Asia. It aims to develop an international cadre of development professionals, well equipped to tackle interwoven challenges of poverty, diseases, climate change, and ecosystem vulnerability specific to the region. This programme is part of the Global Association of Masters of Development Practices (MDP) programmes, which consists of 26 programmes offered in 19 universities across the world. TERI University was one of the few universities selected worldwide by the John D and Catherine T MacArthur Foundation to receive seed funding to create the new masters degree programme in development practice. The programme provides an interface between the students of 26 MDP programmes and is reviewed by a team of experts from academia and national and international development organizations.

#### MBA (Business Sustainability)

Businesses across the globe are realizing the importance of integrating sustainability into business practices. Much of the pressure is coming in through various stakeholders, such as customers, shareholders, and the government. This has created a need for managers in different sectors — public, private and not-for-profit, to maintain a balance between three pillars of sustainability, i.e., people, planet, and profits. Having management professionals trained in sustainability within the organization not only optimizes business operations but also generates positive returns to the company. MBA in Business Sustainability at the TERI University equips students with acumen to lead in a resource-sensitive world amid increasing competition and concern for sustainable development. This is not just an MBA programme, it is an MBA plus programme, which combines conventional MBA curriculum with new sustainability challenges that have direct impact on a firm's future performance financial and/or otherwise.

#### **MBA** (Infrastructure)

Infrastructure is the backbone of a nation's economy, and tackling infrastructure problems is a key requirement for leveraging growth, especially in developing economies like India. Investments in infrastructure have become crucial in order to sustain the pace of economic growth. This has created a need for managers to lead and sustain organizations involved in infrastructure business.

TERI University is the first University in the country to offer an MBA programme in Infrastructure. The programme not only imparts managerial skills in core subjects like any other conventional MBA course but also equips the students with acumen in infrastructure management by offering sectoral electives in water, energy, and urban infrastructure. The aim is to achieve a critical mass of expertise for effective management of infrastructure challenges across the country. The MBA (Infrastructure) programme at the TERI University encompasses a comprehensive and well-structured curriculum. It provides specialized training in infrastructure service delivery, regulatory processes, and competition policy, as well as in understanding infrastructure management from technical, economic, social, legal, and political perspectives. The programme is open to both mid-career professionals and fresh graduates.

#### MSc (Climate Science and Policy)

There is a need to understand climate science, it's implications on various regions, resources, societies, and to study ways of mitigating its impacts. Role of policies and measures are also equally important. TERI University offers an intensive four-semester MSc programme in Climate Science and Policy intended to imbue present and future professionals with practical and theoretical knowledge in the area of scientific and policy issues relevant to climate change. The programme is indeed a need of the hour, an area that requires incentivization, projections, possible ways of mitigating emissions, and assessment of possible impacts on humans, habitats, resources, and exploring adaptation options. The programme provides explicit interdisciplinary knowledge and training in adaptation and mitigation issues, and understanding

of tools and techniques relevant to the subject. Moreover, it enhances the understanding of national and international policies, and laws and regulations applicable to climate science and policy.

#### **MSc (Economics)**

Climate change and sustainable use of energy resources for future have been globally recognized among the most serious concerns facing mankind today. Economics as a discipline has responded to these challenges by incorporating these issues in standard theory and analysis. In various national and international forums where such issues are discussed, the opinions of economists are much sought after; in other decision-making or policy-making bodies, economists trained in environment and resource economics are expected to contribute by offering specialized insights. The MSc programme in Economics with specialization in Environmental and Resource Economics examines the application of economic theory to ecological, environmental, and natural resource issues within an interdisciplinary setting. This sub-discipline attempts to understand, analyze, and evaluate the exchanges between nature and human society. It aims to design and implement policy instruments that assist in sustaining and enhancing quality of life on Earth. The core elements of the programme not only include advanced graduate level exposure to microeconomics, macroeconomics, mathematics, statistics, and econometrics, but our students also receive an in-depth knowledge of concepts, theories, techniques, policies, and other applications in ecological, environmental, and natural resource economics. This domain knowledge makes this programme an MSc (Economics) Plus.

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

This programme is intended to create a cadre of trained professionals who are equipped to deal with scientific, technological, legal, socio-economic, and policy aspects related to environment and resource management. The curriculum has been designed seamlessly by integrating the concept of sustainable development in an inter-disciplinary framework with emphasis on research and application. It addresses the growing need for professionals in society who can apply best management practices drawn from various disciplines to create innovative solutions for a sustainable future. The Environmental Studies and Resource Management programme is a mix of theory and practical components offered in an interdisciplinary approach with emphasis on research and application. The pedagogy of the programme includes face-to-face interactions, live case studies, field visits, theatre, conferences, seminars, and active use of information and communication technology. It trains students in sustainability and empowers them to become responsible global citizens.

#### **MSc (Geoinformatics)**

Geoinformatics is rapidly evolving as a study area that can bring in additional and meaningful insights using multi-disciplinary approach to problem solving in areas such as resource estimation and assessments, impact assessments, etc. It equips students with technologies that can support estimation, mapping, and analysis. The MSc programme in Geoinformatics

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at the TERI University is a two-year programme where students specialize in the areas of geoinformation and earth sciences. The core strength of the programme lies in its innovative e-curriculum that imbues present and future professionals with practical and theoretical knowledge in the domain of geoinformatics. Students are exposed to a wide range of cutting-edge applications of geospatial techniques to emulate real-life problems. The programme is extensively lab oriented. Students are exposed to a wide range of practical exercises covering different applications of remote sensing, GIS, photogrammetry to real-life problems, law and policy for remote sensing and mapping. It enables students to understand various rules and regulations regarding data collection and dissemination and learn about various laws and policies related to environment.

#### MSc (Plant Biotechnology)

The Department of Biotechnology at TERI University was established to facilitate capacity building in the field of biotechnology and to address prevailing lacunae in education policies that are critical for its balanced promotion. The Department focuses on inculcating scientific temper, analytical reasoning, original creative thinking, and logical thought process critical for research. It promotes sensitization to issues concerning ethics, regulations, and management vital to biotechnology. The MSc programme in Plant Biotechnology seeks to provide education and training, empower students with technical skill-set, create capacities and build career opportunities in three key domains of biotechnology – research and development; Science education; and policy, regulations, and management. This is achieved through a combination of interdisciplinary curricula as well as intensive laboratory work. Students are expected to have both specialized knowledge and practical experience for addressing contemporary problems in both academic and industrial setting.

#### MSc/MTech (Water Science and Governance)

Water governance and management goes beyond traditional field of engineering because of multi-level (local, regional, and sub-national) and multi-dimensional (economic, social, and environmental) factors. The Department aspires to provide a platform for various actors to come together for innovative ideas, capacity building, and consensus building for joint action on water challenges of tomorrow. The Department has attained leadership position in offering programmes relevant for development professionals (fresh as well as mid-career)well equipped to tackle, beyond cultural boundaries and across sectoral divisions, the interwoven challengesof water sustainability. The format of the entire programme is flexible and caters to fresh graduates as well asworking professionals who desire to upscale their skills/qualifications. It is a multi-track course offering MSc/MTech/PG Diploma/PG Certificate in Water Science and Governance. While MTech and MSc coursesare for four semester duration; PG Diploma is a course for two semesters, and PG Certificate is a one-semester programme.The programme facilitates a systematic amalgamation of widespread knowledge on a common platform. The course structure addresses cross-sectoral perspectives on both engineering as well as social needs of water, while understanding that sustainability will not be compromised. Students get an opportunity to work on innovative solutions during the major project tenure.

#### MTech (Renewable Energy Engineering and Management)

The TERI University offers multidisciplinary, postgraduate programme in Renewable Energy Engineering and Management to fulfill the increasing demand for trained professionals in the field of renewable energy and energy management. In 2009, the Department ventured into offering various online (distance learning) programmes as well. These online programmes were developed in collaboration with the Open University, UK. The Department collaborates with International universities such as Brandeis University, USA; Deakin University, Australia; Queensland University of Technology, Australia; Freie University, Germany; and Simon Fraser University, Canada to provide state-of-the-art knowledge on new and emerging developments in energy technologies, methodologies and tools for evaluation, assessment, and decision making. Postgraduate programmes of the Department are AICTE and DEC approved.

MTech (REEM) programme prepares the students in theoretical as well as practical aspects of renewableenergy technologies, energy conservation, and management. This multi-disciplinary integrated programme trains the students not only in renewable energy technologies and its implementation but also in equally important areas of energy infrastructure, rational use of energy, energy policies and regulations, energy–environment interface, etc. The programme exhibits its uniqueness fostering the much sought-after leadership skills through the management energy courses. Thus, the programme enables students to tackle practical problems of design, development, deployment in the industry, and to pursue academics as well as frontiers of research.

Overarching emphasis is given towards practical learning thus exposing students to industrial projects throughfield visits and internships. Hands-on experience in industrial, consulting, and research projects is imparted while working in various organizations during minor and major internships/projects.

#### MTech (Urban Development and Management)

Rapid urbanization across the world and particularly in developing countries like India has multifariousramifications on the settlement systems. Pressures on land, water, material needs, and environmental resources would undoubtedly increase and call for integrated and sustainable solutions that cut across disciplinary domains of science, technology, and social sciences. The MTech programme in Urban Development and Management (UDM) at the TERI University equips students with cutting edge technical skills; managerial capabilities; and understanding of social, economic, environmental, and legal issues associated with urban development; infrastructure and the real estate sector.

The uniqueness of this programme is in promoting learning through research-based teaching, engagement of practitioners, and a diverse pedagogy ranging from classroom teaching, tutorials, case study discussions, and field work. The programme builds capacity for understanding real-world urban development and management problems and plausible sustainable solutions through engagement of students with institutions concerned with urban development. The programme prepares students for a successful career in the urban development sector such as:

- Urban local bodies, state governments, and other public sector institutions involved in delivery of urban infrastructure and services
- Institutions conducting research, training, and capacity-building activities
- Private sector organizations engaged in real estate and urban infrastructure development
- Consultancy firms, NGOs, and CBOs participating in urban development activities.

#### LLM

Environmental Laws and Infrastructure laws are two emerging fields in legal practice. There is a dearth of qualified legal professionals in both these fields. It is in this context that TERI University introduced a one year LLM programme with specialization in Environment and Natural Resources Law; and Infrastructure and Business Law.

#### Environment and Natural Resources Law

The environmental concerns need to be integrated into all economic policies and implementation decisions. A specialization in Environment and Natural Resources Law therefore assumes great significance. The primary focus of this specialization stream is to understand how the legal framework can reorient economic activity toward sustainability. This reorientation can happen in different ways like prohibiting or regulating environmentally damaging activities, assigning liability for environmental harms and providing adequate incentives for benign environmental activities. The course will also address the principles of allocation of natural resources according to the concepts of due process of law and equity.

#### Infrastructure and Business Law

India's infrastructure development is inadequate and there is a need for massive investment in different infrastructure sectors to meet the demands of economic growth. However, given the fiscal constraints, the investment needs of infrastructure cannot be met by the public sector alone and would require private investment, both foreign and domestic. Attracting private investment will be feasible only if there is a conducive and predictable legal regime.

This programme addresses the policies and laws relating to major sectors viz., transport, energy, telecommunications, urban infrastructure and water. The purpose of this programme is to provide an insight into the fundamental legal concepts relating to business in general and various infrastructure sectors in particular including the issues involved in the development, financing and management of projects. It also addresses the issues of public-private participation in detail.

## **CONVOCATION 2016**

### NINTH CONVOCATION

TERI University organized its Ninth convocation on 4 November 2016. Mr. Prakesh Javadekar, Hon'ble Minister of Human Resource Development, Government of India was the Chief Guest. The ceremony was held with much pomp and show. During the Ninth Convocation ceremony, a total of 12 doctoral degrees and 188 master's degrees were conferred.

#### **Medals for Standing First**

#### 2016

Name of student	Stream
Njacheun Ngahane Silas	MA (Public Policy and Sustainable Development)
Bhavya Tripathi	MA (Sustainable Development Practice)
Pushpendra Mair	MSc (Environmental Studies and Resource Management)
Madhur Chanana	MSc (Geoinformatics)
Khushboo Sharma	MSc (Plant Biotechnology)
Abha Tewary	MSc (Climate Science and Policy)
Shobhna Jha	MSc (Economics)
Niyati Seth	MSc (Water Science and Governance)
Amrita Kumari	MBA (Infrastructure)
Vedamitra Rao	MBA (Business Sustainability)
Saurabh Motiwala	MTech (Renewable Energy Engineering and Management)
Vaibhav Rao	MTech (Urban Development and Management)
Priyank Jain	MTech (Water Science and Governance)

#### **Previous Years**

Year	Name of student	Stream
2005	Reema Bansal	MSc (Environmental Studies)
	Romit Sen	MSc (Natural Resources Management)
2006	Poorva Gupta	MSc (Environmental Studies)
	Astha Batra	MSc (Natural Resources Management)
2007	Prachi Prakash	MSc (Environmental Studies)
	Yamini Panchaksharam	MSc (Natural Resources Management)

Year	Name of student	Stream
2008	Aditi Mehandiratta	MSc (Environmental Studies)
	Chandni Singh	MSc (Natural Resources Management)
	Poonam Kunwar Banerjee	MBA (Infrastructure)
	Madhavi Das	MA (Public Policy and Sustainable Development)
	1	
2009	Pallavi Pant	MSc (Environmental Studies)
	Prachi Khanna	MSc (Natural Resources Management)
	Radhika Tomar	MSc (Water Resources Management)
	A P Singh	MBA (Infrastructure)
	Chandni Raina	MA (Public Policy and Sustainable Development)
0010		
2010	Shreya Dasgupta	MSc (Environmental Studies)
	Deepa Maggo	MSc (Natural Resources Management)
	Rudresh Kumar Sugam	MSc (Water Resources Management)
	Farzana Kolyariwala	MSc (Plant Biotechnology)
	Neeraj Garg Baruah	MSc (Geoinformatics)
	Sanjeev Kumar Singh	MBA (Infrastructure)
	Prashant Kumar Singh	MA (Public Policy and Sustainable Development)
2011	Marianne Manuel	MSc (Environmental Studies)
2011	Pratha Sah	MSc (Natural Resources Management)
	Divva Gunta	MSc (Water Resources Management)
	Shailia Bahuguna	MSc (Geoinformatics)
	Seema Dikshit Venkatesh	MSc (Climate Science and Policy)
	Pratiksha Jain	MSc (Plant Biotechnology)
	Parul Gunta	MSc (Economics)
	Deepak Sharma	MBA (Infrastructure)
	Mathur Apurya Anil	MBA (Business Sustainability)
	Reva R	MTech (Renewable Energy Engineering and Management)
	neva n	Threen (Renewable Energy Engineering and Management)
2012	Mahi Puri	MSc (Environmental Studies)
	Upasana Jaipuria	MSc (Natural Resources Management)
	Neha Gupta	MSc (Water Resources Management)
	Bhartendu Pandey	MSc (Geoinformatics)
	Divya Sharma	MSc (Climate Science and Policy)
	Seema Chaudhary	MSc (Plant Biotechnology)
	Ayush Pant	MSc (Economics)

Year	Name of student	Stream
2012	Shilpy Dewan	MBA (Infrastructure)
	Vandana Rellan	MBA (Business Sustainability)
	Disha Agarwal	MTech (Renewable Energy Engineering and Management)
	Praniti Maini	MA (Sustainable Development Practice)
	Nandita Mishra	MA (Public Policy and Sustainable Development)
2013	Vanita Godara	MSc (Environmental Studies)
	Dina Nethisa Rasquinha	MSc (Natural Resources Management)
	Pallavee Khanna	MSc (Water Resources Management)
	Rumia Basu	MSc (Geoinformatics)
	Sudeshna Maya Sen	MSc (Climate Science and Policy)
	Sneha Sinha	MSc (Plant Biotechnology)
	Bhawna Mangla	MSc (Economics)
	Megha Anukampa Singh	MBA (Infrastructure)
	Nidhi	MBA (Business Sustainability)
	Aparna Sankar	MTech (Renewable Energy Engineering and Management)
	Denise Fernandes	MA (Sustainable Development Practice)
2014	Vivoka lani	MSc (Environmental Studies)
2014	Doopika Mann	MSc (Cooinformatics)
	Amani Cupta	MSc (Climate Science and Policy)
	Allalli Gupla	MSc (Plant Pietochnology)
	Mahima Vasishth	MSc (Franchiology)
	Vacundhara Tanwar	MSc (Economics)
		MBA (Inforcements)
	Sanju Vargeese	MBA (Inirastructure)
	Kanchi Kellan	MBA (Business Sustainability)
	Nair Neeraj Padmakumar	MTech (Renewable Energy Engineering and Management)
		MA (Sustainable Development Practice)
	Som Dutt Sharma	MA (Public Policy and Sustainable Development)
2015	Shreva Trivedi	MSc (Environmental Studies)
	Florencia Matina Tuladhar	MSc (Geoinformatics)
	Anshika Gupta	MSc (Climate Science and Policy)
	Nipanshu Agarwal	MSc (Plant Biotechnology)
	Vasundhara Gaur	MSc (Economics)
	Sidhant Lalla	MBA (Infrastructure)

Year	Name of student	Stream
2015	Navin Bansal	MTech (Renewable Energy Engineering and Management)
	Ankit Tulsyan	MA (Sustainable Development Practice)
	Yelamanchi Monica Priya	MTech (Urban Development and Management)
	Shalini Bhutani	MA (Public Policy and Sustainable Development)
# **GUEST LECTURES AT THE UNIVERSITY**

Торіс	Presenter	Date
Economics Seminar Series: 6 - India's New Corporate Bankruptcy Law	Dr Rajeswari Sengupta, Indira Gandhi Institute of Development Research (IGIDR) and Mr Pratik Datta, National Institute of Public Finance and Policy (NIPFP)	9-Nov-16
University Lecture Series - Women in higher education and empowerment	Prof Chanana, Jawaharlal Nehru University, New Delhi	26-Oct-16
Economics Seminar Series: 5- Health care financing in India: a tale of plunder, catastrophe and political neglect	Dr Indranil Mukhopadhyay, Assistant Professor and Scientist, Public Health Foundation of India (PHFI)	19-Oct-16
Economics Seminar Series: 3- GST Reforms: key challenges	Professor Pinaki Chakraborty, National Institute of Public Finance and Policy (NIPFP)	14-Sep-16
University Lecture Series – Talk on Inequality and Citizenship	Professor Dipankar Gupta (Retd.), Jawaharlal Nehru University, New Delhi	9-Sep-16
Institutional Seminar - Land Seminar	Mr Sashi, Fellow at St. John's College and presently enrolled in the Department of Geography, University of Cambridge, UK	7-Sep-16
Economics Seminar Series: 2- Application of labour laws, employment outcome and assessment of workers bargaining power: some recent trends from India	Dr Anamitra Roychowdhury, Assistant Professor, St. Stephen's College, University of Delhi	7-Sep-16
Institutional Seminar - Beyond the resource curse: resource dependence, inter-generational equity and governance	Mr Rahul Basu, Goenchi Mati Movement and Member, Goa Foundation	24-Aug-16
University Lecture Series – Talk on rights-based approach to public policies	Ms Ananta Kumar Giri, Professor, Madras Institute of Development Studies	22-Aug-16
Economics Seminar Series: 1- Urban deprivation and its correlates in slums of three Indian metro cities: monetary vs. multidimensional approach	Dr Sugata Bag, Department of Economics, Delhi School of Economics, University of Delhi	17-Aug-16
Institutional Seminar - Developing water resources through rainwater harvesting: relevance in urban areas	Prof SP Mittal, IARI	3-Mar-16
Institutional Seminar - Non revenue water: challenges in water loss reduction	Ms Amita Bhatnagar, Director, AWWA India, and Principal Consultant, STUP Consultants Pvt. Ltd.	25-Feb-16
Institutional Seminar - Impact of water on health and economy	Dr Manish Kumar, Senior Institutional Development Specialist and Country Coordinator, Water and Sanitation Programme, World Bank	19-Feb-16
Institutional Seminar - Challenges women face in urban slums in the water and sanitation sector	Ms Abha Bahadur, President, Centre for Water, Sanitation and Health for Women	18-Jan-16

## INTERNATIONAL VISITING FACULTY AT TERI UNIVERSITY 2015 – 17

### **Dr Eddy Moors**

Head, Climate Change and Adaptative Land and WaterManagement (CALM), V U University, Amsterdam, Netherland

### Dr Kirsten Jorgenson

Professor, FFU, Freie University of Berlin, Germany

### **Prof Viney P Aneja**

Professor, Air Quality and Environmental Technology, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, USA

# **STUDENT EXCHANGE**

TERI University students visiting other Universities			
Freie University of Berlin, Germany			
1	Nishitha Bajaj, Doctoral student (Department of Natural Resources), TERI University	2016	
2	Niharika Tyagi, Doctoral student (Department of Policy Studies), TERI University	2016	
3	Sandeep Dahiya, Doctoral student (Department of Natural Resources), TERI University	2016	
4	Nidhi Sharma, MSc (Environmental Studies and Resource Management)	2015	
5	Deepti Roy, MSc (Climate Science & Policy)	2015	
6	Swarnalakshmi Umamaheshwaran, Doctoral student (Department of Policy Studies), TERI University	2015	
University of Reims Champagne-Ardenne, France			
1	Abir Nilosey, MTech (Urban Development and Management)	2015	
	Simon Fraser University, Canada		
1	Prakriti Prajapati, MSc (Economics)	2015	
	External students visiting TERI University		
University of Graz, Austria			
1	Alexandra Enke	2016	
2	Francesca Cucchiara	2016	
3	Laura Verena De Guevara	2016	
4	Yannick Lorenz Oswald	2016	

# **RESEARCH PROJECTS AT TERI UNIVERSITY**

Ongoing Projects during the year 2015-2017				
S.No.	Title of the project	Sponsor Name	Name of the Project Investigator	
1	Proteomic analysis of exogenous calcium induced signaling pathway under dehydration in rice	Department of Biotechnology	Dr Deepti Gupta	
2	Evaluation and optimization of osmotolerant environmental microbial isolates for the production of bioethanol from xylose in lignocellulosic waste	Department of Biotechnology	Dr Ramakrishnan Sitaraman	
3	Molecular and morphological characterization of Brassica Transgenic Lines with augmented expression of FT and generation of Brassica Transgenic Lines with reduced FT expressions for delayed flowering	Department of Biotechnology	Dr Anandita Singh	
4	Helicobacter pylori phospholipases as novel virulence factors	Department of Biotechnology	Dr Ramakrishnan Sitaraman	
5	Development of a knowledge based decision tool to simulate mechanism of vegetation change due to climate change in Western Himalayan Ecoregion (part of Uttarakhand)	Ministry of Environment and Forests	Dr Pawan Kumar Joshi	
6	DBT Network project on development and stress specific genomics of small non-coding RNAs in Brassica Species rice and wheat: Phase 2	Department of Science & Technology	Dr Anandita Singh	
7	Analyzing the implementation of Forest Rights Act (2006): a cultural political study of community rights in southern Rajasthan	Indian Council of Social Science Research	Dr Smriti Das	
8	Reconstruction of genome-scale metabolic Networks of Pichia pastoris CBS 7435 strain using Systems Biology	Science and Engineering Research Board	Dr Pallavi Somvanshi	
9	Establishing Centres of Excellence for Training and Research in Frontier Areas of Science and Technology (FAST)	Ministry of Human Resource Development	Mr Shirish S Garud	
10	Hi-AWARE sub project for TU	International Development Research Centre	Dr Arun Kansal	
11	Sustainable livelihood activities on reclaimed open cast coal mines: a technology enabled integrated approach in Indian Coal sector	Ministry of Coal	Dr Sudipta Chatterjee	
12	Training programme on "Impact of ozone and other pollutants on crops"	Central Pollution Control Board	Dr Kamna Sachdeva	

13	Impact Analysis of the Arunachal Pradesh Panchayati Raj Act, 1997 on traditional institutions in the state: a case study of two districts of Papum Pare and East Kemang?	Indian Council of Social Science Research	Dr M V Shiju
14	Supporting, consolidation, replication and up-scaling of sustainable waste water treatment and reuse technologies for India (SARASWATI)	Department of Science & Technology (International Multilateral & Regional Cooperation Division)	Dr Sukanya Das
15	Model building and developing customized algorithm for climate studies.	National Security Council Secretariat	Dr Nithiyanandam Yogeshwaran
16	Structural studies on proteins involved in synthesis and processing of mycolic acids in Mycobacterium tuberculosis	Department of Biotechnology	Dr Chaithanya Madhurantakam
17	National Post-Doctoral Fellowship to Dr Anil Kumar Verma, under the mentorship of Dr Ramakrishnan Sitaraman	Science and Engineering Research Board	Dr Ramakrishnan Sitaraman
18	Design, development and testing of a down draft gasifier system completed by hydrogen enrichment thru air steam gasification	Petroleum Conservation Research Association	Dr Priyanka Kaushal
19	Targeting low-arsenic and low-fluoride groundwater to reduce exposure in rural Punjab, India	United States Agency for International Development	Dr CK Singh
20	Water-Energy-Carbon Nexus	Asian Institute of Technology, Asia Pacific Network for Global Change Research	Dr Arun Kansal
21	Inter University Competition on Water Resources Management	Robert Bosch Stiftung, WAPCOS, United States Agency for International Development	Dr Arun Kansal
22	Economic value of biodiversity conservation provided by forest and agro-forest ecosystems in Kodagu district	SANDEE	Dr Kavita Sardana
23	Understanding decentralized energy interventions and their success conditions in select countries of Asia - Pacific region i.e. China, India, Indonesia and Thailand	United Nations University	Dr Gopal Sarangi
24	Strengthening water and sanitation in urban settings	United States Agency for International Development	Dr Arun Kansal
25	Household response in 26 Bihar villages one year after tube-well were tested for arsenic for a fee	Columbia University	Dr Chander Kumar Singh
26	The distributional implications of solar water pumping program for ground water irrigation in Rajasthan	SANDEE	Dr Eshita Gupta
27	Embedding SCP into TERI University Postgraduate Programmes	United Nations Envoirnment Programme	Dr Shaleen Singhal

28	To coordinate development of course materials short course in Gender, Equity and Water Management	WaterEd Australia Pty Ltd.	Ms Fawzia Tarannum
29	Assessing land issues for utility scale renewable energy development	The Shakti Sustainable Energy Foundation	Mr Sapan Thapar
30	Landscape approach for land-water-community security	Solidaridad Network Asia Limited	Ms Fawzia Tarannum
Completed Projects between the year 2015-2017			
1	Socio-ecological metabolism study for urban water planning: A case study of Delhi	University of Toronto	Dr Arun Kansal
2	Delivery of short course on Gender, Equity and Water Management	WaterEd Australia Pty Ltd.	Ms Fawzia Tarannum
3	Decentralized off-grid electricity generation in developing countries: Business models for off-grid electricity supply	Engineering and Physical Sciences Research Council	Dr Arabinda Mishra

# **RECRUITERS AT TERI UNIVERSITY**

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3R Waste Foundation	Alliance for an Energy Efficient Economy
A.T. Kearney India Pvt. Ltd	Amity Institute of Wildlife Sciences, Amity University
Abdul Latif Jameel Poverty Action Lab (J-PAL)	Amplus Solar Energy Solutions
Access Development Organisation	Anglican Development Services
Adidas	Arvind Lifestyle Brands Limited
Administrative Staff College of India (ASCI)	Ashoka Trust for Research in Ecology and the Environment (ATREE)
Aeon integrated buidling solutions	Ashoka University
Aga Khan Agency for Habitat	ASMA Energy (P) Ltd
Aga Khan Planning and Building Services, India	Azure Power India Ltd
Agumbe Rainforest Research Station	
	В
Battighar Foundation	BSES Rajdhani
Bridge to India	
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Cadila pharmaceutical	Citizen Consumer & Civic Action Group
Carbon Fixer	cKinetics
Catalyst Management Services	Clean Energy Access Network
Center for Ecology and Development and Research	Clearford Water Systems
Central Drug Institute	Climate Connect
Central Road Research Institute	Coca-Cola India Pvt. Ltd
Centre for Environment and Development	Coles College of Business, Atlanta, USA
Centre for Environment and Energy	Community Empowerment for Progress Organization
Centre for Environment Education	Connecting Dreams Foundation
Centre For Science and Environment	Consortium for DEWATS Dissemination Society
Complete Health Economics Outcomes Research Solutions (CHEORS)	Council on Energy Environment and Water
Confederation of Indian Industry (CII)	CTRAN Consulting Ltd.
The International Maize and Wheat Improvement Center (CIMMYT)	Customized Energy Solutions
	Cygni Energy Private Limited
Defence Institute of Bio-Energy Research (DIBER)	Deutsche Gesellschaft fъr Internationale Zusammenarbeit (GIZ) GmbH
Delhi School of Economics	Development Alternatives

Department of Environment, Government of NCT of Delhi	DHAN Foundation
Department of River Rejuvenation, Art of Living	DLF Foundation
Department of Science and Technology	
	E
Earth & Us	EnKing International Energy Services Ltd.
Earthood Services Private Limited	Environic Trust
East Delhi Municipal Corporation	Environmental Adaptive Strategies, LLC
Eco Sultan	Environmental Management and Policy Research Institute
Econirmitee Infrastructure & Services	Environmental Planning and Coordination Organisation (EPCO), GoMP
E-Cube	Environmental Pollution Laboratory, Department of Environmental Studies, University of Delhi
Educate me Community school	Enzen Global Solutions Pvt. Ltd
EKI Energy	ESRI India Technologies Ltd.
Emergent Ventures India Pvt. Ltd.	Ethiopian Public Health Institute
	F
Fabindia Oversees Ltd.	Foundation For MSME Clusters
Five M Energy Private Limited	Fraunhofer Institute of Wind Energy and Energy System Technology
Forschungszuntrum Julich	Freelancer Sports Consultanat
	G
Galaxy Surfactants	Gorakhpur Environmental Action Group
GE Power	Gram Power India Pvt. Ltd.
GE Water	GreenTree Building Energy Pvt. Ltd.
GEM Enviro Management Pvt. Ltd.	CPID
Global AgriSystem Pvt. Ltd.	GRID
	GSES Global Sustainable Energy Solution India
Godrej Agrovet	GSES Global Sustainable Energy Solution India Gujarat Nature Conservation Society
Godrej Agrovet	GSES Global Sustainable Energy Solution India Gujarat Nature Conservation Society
Godrej Agrovet HCL Foundation	GSES Global Sustainable Energy Solution India Gujarat Nature Conservation Society Hindustan Coca Cola Beverages Pvt. Ltd.
Godrej Agrovet HCL Foundation HCL Technologies	GSES Global Sustainable Energy Solution India Gujarat Nature Conservation Society Hindustan Coca Cola Beverages Pvt. Ltd. Hygrid Solar Pvt. Ltd
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Godrej Agrovet HCL Foundation HCL Technologies HERE Solutions India Pvt. Ltd. ICLEI South Asia Idam Infrastructure Advisory Private Limited IL and FS Environmental Infrastructure and Services Limited	GSES Global Sustainable Energy Solution India Gujarat Nature Conservation Society Hindustan Coca Cola Beverages Pvt. Ltd. Hygrid Solar Pvt. Ltd Indian Pollution Control Association Indian Society of Agribusiness Professionals (ISAP) Indian Wind Power Association

India Infrastructure	Institute for Financial Management and Research
Indian Agricultural Research Institute	Institute of Environment and Sustainable Development, BHU
Indian Council for Research on International Economic Relations	Institute of Rural Management, Anand
Indian Institute for Human Settlements	Institute of Wind Energy & Systems Tech
Indian Institute of Management, Udaipur	Intellecap
Indian Institute of Public Administration	IntelleGrow
Indian Institute of remote sensing (IIRS)	Intercontinental Consultants & Technocrats Pvt. Ltd.
Indian Institute of Science	International Centre for Genetic Engineering and Biotechnology (ICGEB)
Indian Institute of Technology, Kharagpur	International Renewable Energy Agency, KPFC, Abu Dhabi
Indian Institute of Technology, Delhi	International Water Management Institute (IWMI)
Indian Institute of Technology, Mumbai	IORA Ecological Solutions Pvt. Ltd.
Indian Institute of Technology, Roorkee	IPE Global
Indian Institute of Tropical Meteorology	Integrated Research for Action and Development (IRADe)
	J
Jawaharlal Nehru University	Jugapro India
Jindal Steel & Power Limited	
	K
Kanishker Architects & Associates Ltd.	Kirhe Energy Saving
KANors-EMR	КРМС
KAPSARC	
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Lahmeyer International (India) Pvt. ltd.	
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Mahindra Lifespaces Developers Ltd.	Meghraj Capital
Mahindra Susten	Mehta & Associates
Manthan Sanstha	Mercados Energy Market India Pvt Ltd
Mastercard	Ministry of Environment and Climate Change
Meghalaya Basin Development Authority	MSME Foundation
	N
Nagrika Policy Research Foundation	National Institute of Rural Development And Panchayati Raj
National Building Construction Corporation Ltd.	National Institute of Solar Energy
National Centre For Antarctic and Ocean Research (ESSO-NCAOR)	National Institute of Technology, Tiruchirappalli

National Centre for Biological Sciences	National Institute of Urban Affair
National Centre For Cell Sciences	Nature Conservation Foundation
National Environmental Engineering Research Institute - NEERI	Navjyoti India Foundation
National Institute of Disaster Management (NIDM)	NDTV
National Institute of Hydrology	Next Education
National Institute of Medical Statistics	Next Gen PMS
National Institute of Oceanography	Nirmaan Organization
National Institute of Plant Genome Research	National Skills Foundation of India
National Institute of Public Finance & Policy (NIPFP)	
	C
Outgrow Consulting	Outline India
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Panacca Biotech Letra	PMB Department, Delhi University
Participatory Research in Asia	Pragya
People's Science Institute	Prayas (Energy Group)
Pepsico	PSI Energy
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Quality Council of India Reserve Bank of India REConnect Energy	Research and Innovation in Electro-chemistry for Energy, University Paris-Sud Research and Information System for Developing Countries
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Quality Council of India         Quality Council of India         Reserve Bank of India         REConnect Energy         Reed Consulting Bangladesh Ltd.         Regain Paradise         ReNew Power Ventures Pvt. Ltd.         Renova Solar         SaciWATERs	Q   Research and Innovation in Electro-chemistry for Energy, University Paris-Sud   Research and Information System for Developing Countries   Risk Management Solutions   RSM GC Advisory Pvt. Ltd.   Rural Connection Foundation   S   Smile Foundation
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Quality Council of India         Quality Council of India         Reserve Bank of India         REConnect Energy         Reed Consulting Bangladesh Ltd.         Regain Paradise         ReNew Power Ventures Pvt. Ltd.         Renova Solar         SaciWATERs         Sapphire Welfare Foundation         Schneider Electric         Shakti Sustainable Energy Foundation	Q         Research and Innovation in Electro-chemistry for Energy, University Paris-Sud         Research and Information System for Developing Countries         Risk Management Solutions         RSM GC Advisory Pvt. Ltd.         Rural Connection Foundation         Smile Foundation         Society for Promoting Participative Ecosystem Management         Society for Promotion of Wasteland Development         Solar Energy Corporation of India
Quality Council of India   Quality Council of India   Reserve Bank of India   REConnect Energy   Reed Consulting Bangladesh Ltd.   Regain Paradise   ReNew Power Ventures Pvt. Ltd.   Renova Solar   SaciWATERs   Sapphire Welfare Foundation   Schneider Electric   Shakti Sustainable Energy Foundation   Sharda University	Q   Research and Innovation in Electro-chemistry for Energy, University Paris-Sud   Research and Information System for Developing Countries   Risk Management Solutions   RSM GC Advisory Pvt. Ltd.   Rural Connection Foundation   Smile Foundation   Society for Promoting Participative Ecosystem Management   Society for Promotion of Wasteland Development   Solidaridad

Smart Joules	SunEdison Energy India, Pvt. Ltd.
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Tata Power Company Ltd.	The Valley School
Tata Trusts	Thinkthrough Consulting Pvt. Ltd. (TTC)
Technip India Ltd.	Third World Network
TechSci	Thrive Solar Energy Private Limited
The Energy and Resource Institute	
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Underwriters Laboratories Quality Assurance Pvt. Ltd.	United Nations Industrial Development Organisation (UNIDO)
UNDP INDIA	Universal Learn Today
UNDP South Sudan	University of Colorado Boulder
UNECA	Urban Management Center
UNESCO – Mahatma Gandhi Institute of Education for Peace and Sustainable Development	Uttarakhand Gramin Vikas Samiti- Integrated Fund for Agricultural Development
UNICEF	
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VA TECH WABAG LTD.	Vasudha Foundation
Vaco Binary semantics LLP	VNV Advisory Services
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WAPCOS Ltd.	Wildlife Trust of India
Waste Ventures India	WinDForce Management Services Pvt. Ltd.
Water Health India	WiSh Energy Solutions Pvt. Ltd.
Watershed Organization Trust (WOTR)	World Business Council for Sustainable Development (WBCSD), India
Wildlife Institute of India	World Wide Fund for Nature-India
Wildlife Research and Conservation Society	WST_CPR, Lucknow
	X
XL Cation	

# **LIST OF PUBLICATIONS**

TITLE	AUTHOR NAME	PUBLISHED IN	YEAR		
Dr Anandita Singh					
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	Dr Swarup Dutta		
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Social Science policy in India	Dutta, S. and Narayanan, S.V.	In: S. Thorat and S Verma (eds.), Social Science Research in India: Status, Issues, and Policies, Oxford University Press.	2016
Dr Udit Soni			
Cancer cell targeting Using Folic Acid/Anti-HER2 antibody conjugated fluorescent CdSe/CdS/ZnS-MPA and CdTe-MSA Quantum Dots	Singh, G., Kumar, M., Soni, U., Arora, V., Bansal, V., Gupta, D., Bhat, M., Dinda, A., Sapra, S. and Singh, H.	Journal of Nanoscience and Nanotechnology, 15(12), pp.9382-9395.	2015
Potential application of Gold nanostructures in photodynamic therapy	Kumar, H., Kumar, A., Gangwar, D., Kumar, P., Singh, P., and Soni, U.	Journal of Nanomedicine & Nanotechnology, 7(1).	2016

Comparison of Urate-lowering efficacy and safety of Febuxostat and Allopurinol in gout patients	Singh, G., Kumar, H., Soni, U., Tyagi, S., Aggarwal, K., Verma, K., and Kumar, S.	Heterocyclic Letters, 6(1), pp. 133-147.	2016
Development of functionalized quantum dots modified poly(vinyl alcohol) membranes for fuel cell applications	Malik, R., Soni, U., Singh Chauhan, S., Verma, P. and Choudhary, V.	RSC Advances, 6(53), pp.47536- 47544.	2016
	Dr Venkataraman L N		
Social construction of capabilities and intersectional complexities in a Tamil village	Venkataraman, L.N.	Development in Practice, 25(8), pp. 1170-1181.	2015
Social sciences in India: Premises and promises of capability approach	Venkataraman, L.N.	Indian Journal of Human Development, 10 (1), pp.111- 121.	2016
New Education Policy and the continuing contentions in India .	Venkataraman, L.N,	Economic and Political Weekly, 51(35).	2016
	Ms Deepty Jain		
How the present would have looked like? Impact of non-motorized transport and public transport infrastructure on travel behavior, energy consumption and CO2 emissions-Delhi, Pune and Patna	Jain, D. and Tiwari, G.	Sustainable Cities and Society, 22, pp.1-10.	2016
Impact of public transport and non- motorized transport infrastructure on travel mode shares, energy, emissions and safety: Case of Indian cities.	Tiwari, G, Jain, D. and Rao, K.R.	Transportation Research Part D: Transport and Environment, 44, pp.277-291	2016
Sustainable mobility indicators for Indian cities: Selection methodology and application	Jain, D. and Tiwari, G.	Ecological Indicators, 79, pp. 310-322.	2017
Population disaggregation to capture short trips-Vishakhapatnam, India	Jain, D. and Tiwari, G.	Computers, Environment and Urban Systems, 62, pp.7-18	2017

# **LIST OF MOUS**

S. No	Name	Description
1	Alliance 4 University, Spain	Academic Exchange
2	Bangdung Institute of Technology, Indonesia	Academic Exchange
3	Brandeis University, USA	Academic Exchange
4	Carleton University, Canada	Academic Exchange
5	Deakin University, Australia	Academic Exchange/ Joint PhD Programme
6	Freie University, Berlin	Academic Exchange
7	International University of Kyrgyzstan, Kyrgyzstan	Academic Exchange
8	North Carolina State University, USA	Academic Exchange
9	Queensland University of Technology, Brisbane, Australia	Joint PhD programme
10	Simon Fraser University, Canada	Academic Exchange
11	Technical University of Denmark, Denmark	Academic Exchange
12	The Universite De Reims Champagne–Ardenne, France	Academic Exchange
13	Universidad Autonoma De Madrid (UAM), Spain	Academic Exchange
14	Universidad Carlos III de Mardir (UC3M), Spain	Academic Exchange
15	Universitat Autonoma De Barcelona (UAB), Spain	Academic Exchange
16	Universitat Pompeu Fabra (UPF), Spain	Academic Exchange
17	University of Iceland, Iceland	Academic Exchange
18	University of Technology Sydney, Australia	Academic Exchange/Joint PhD Pro- gramme
19	Utrecht University, The Netherlands	Academic Exchange

# **HONORARY DOCTORAL DEGREES AWARDED**

### **Convocation 2015**

Mr Hiroaki Nakanishi, Chairman and CEO, Hitachi Dr José Manuel Ramos-Horta, Former President of East Timor Mr Paul Polman, CEO, Unilever Mr V V S Laxman, Former Cricketer

#### **Convocation 2014**

Mr Anshu Jain, Co-CEO, Deutsche Bank Prof Yuan Tseh Lee, Nobel Laureate Mr Hemendra Kothari, Chairman, DSP BlackRock Investment Managers Ltd Ms Shabana Azmi, Actor and Social Worker

#### **Convocation 2013**

Mr Bhupinder Singh Hooda, Chief Minister of Haryana Prof Carlo Rubbia, Scientific Director, Institute for Advanced Sustainability Studies, Germany Mr Nassir Abdulaziz Al-Nasser, Former President of the UN General Assembly Mr Sam Pitroda, Advisor to Prime Minister of India Mr Thomas Lauren Friedman, Foreign Affairs Columnist, The New York Times Mr Zhang Yue, Chairman of the Broad Group

#### **Convocation 2012**

HE Mr James Alix Michel, President, Republic of Seychelles HE Mr Bharrat Jagdeo, Former President, Republic of Guyana HE Mr Erik Solheim, Minister of Environment and Minister of Development Co-operation, Kingdom of Norway Prof Elinor Ostrom, Distinguished Professor, Indiana University Ms Naina Lal Kidwai, Group General Manager and Country Head, HSBC Group in India

#### **Convocation 2010**

Mr Tejendra Khanna, Lieutenant Governor of Delhi Dr Sultan Ahmed Al Jaber, Managing Director and Chief Executive Officer of Masdar Dr Kandeh K Yumkella, Director-General, United Nations Industrial Development Organization

### **Convocation 2006**

Mr Nandan Nilekani, Chief Executive Officer and Managing Director, Infosys Technologies Limited

# **DOCTORAL DEGREES AWARDED**

S. No.	Name	Supervisor	Thesis Title
1	Shivakshi Jasrotia	Dr Arun Kansal	Studies on a decentralized, solar energy-based water supply and sanitation system for arsenic-affected rural areas
2	Shyam Sunder Sharma	Dr Shashi Bhushan Tripathi	Identification and molecular characterization of superior genotypes of Pongamiapinnata for increased biodiesel production
3	Vaibhav Sharma	*Dr P K Joshi	Snow cover monitoring and snowmet runoff modeling in NW Himalaya
4	Anshuman Bhardwaj	*Dr P K Joshi	Characterization of glacial terrain and its environs using geospatial tools
5	Anubha Agrawal	*Dr Shresth Tayal	An assessment of volume change in Summer- Accumulation type Glaciers.
6	Kanika Chowdhary	*Dr Nutan Kaushik	Bioprospecting of endophytic fungi isolated from Indian medicinal plant
7	Pratima Sinha	Dr Shashi Bhushan Tripathi	Development of molecular tools and genetic stocks for marker assisted germplasm improvement of Jatropha curcas
8	Priya N	Dr Kamna Sachdeva	A study of rainfall variability and cloud formation
9	Sandip Mukherjee	*Dr P K Joshi	Downscaling of coarse resolution open source remotely sensed satellite based land surface temperature
10	Navarun Varma	*Dr Arabinda Mishra	Disaster and governance in Brahmaputra basin of India: Case study of an ecological surprise within Assam
11	Daya Bhardwaj	Dr Nutan Kaushik	Development of chemical fingerprinting and chemometrics methods for quality control of Indian Berberis species and their value added products
12	Md Aminul Islam	Dr Shashi Bhushan Tripathi	Germplasm characterization and mapping of pungency locus in Capsicum spp. from north-eastern India
13	Priyanka Dhakate	Dr Anandita Singh	Genomic strategies for modulating fruit and flower development in Brassicas
14	Savita Gautam	*Dr Subir Sen	Environmental measures and its effect on export sector
15	Sangeeta Sharma	Dr Shashi Bhushan Tripathi	Marker based approach to study genetic polymorphisms in PreecImpsia.

16	Suneel Kumar	Dr Shashi bhushan Tripathi	Fine mapping of spot blotch disease resistant QTL in Wheat
17	Shivaraj S M	Dr Anandita Singh	Characterization of microNA genes in Brassica
18	Pratiksha R Mayee	Dr Anandita Singh	Molecular and functional characterization of FT and SOC1 for Modulation of flowering in Brassica species
19	Indranil Biswas	*Dr Suneel Pandey	Empirical analysis of technology-mix used in Indian Micro Small and Medium Enterprises (MSMEs) and its effectiveness to sustain in the context of globalization
20	Pratima Singh	Dr Arun Kansal	Energy use pattern analysis in STPs for scoping for use of renewable energy resources in centralized and decentralized plants
21	Saumya Dhup	*Dr Vibha Dhawan	Isolation, characterization and large scale cultivation of Algae for lipid production
22	Brij Mohan Sharma	*Dr Shresth Tayal	Climate induced mobilization of Persistent Organic Pollutants (POPs) in Ganges River, India
23	Anjali	*Dr Vidya S Batra	Carbon membranes and monoliths from bagasse fly ash for environmental and energy applications
24	Niyati Naudiyal	*Dr Joachim Schmerbeck	Forest dynamics of the Central Himalaya and related changes in the supply of ecosystem services
25	Gaurav Pande	*Dr Vidya S Batra	Waste derived supported catalyst for VOC oxidation
26	Ruchira Ghosh	Dr Arun Kansal	Estimation of the potentiality of municipal solid waste disposal options for energy and carbon reduction
27	Manish Gupta	Dr Ramakrishnan Sitara- man	Programmed cell death in Mycobacterium: Study of the role of parDe genetic loci of Mycobacterium tuberculosis in macrophage growth and dormancy
28	Ria Sinha	Dr Manipadma Datta	Emerging sustainability issue in business: the interface between environmental, social and governance variables and business with special reference to the Indian corporate sector

\* Adjunct Faculty / Former Faculty who are now in other Institutions

# **ONGOING DOCTORAL RESEARCH**

S. No.	Name	Supervisor	Topic of Research
1	A K Joshi	Dr P K Joshi	Change in resource utilization pattern and its impact on forest ecosystems in lesser Himalaya
2	Vrishali Ramkrishna Chaudhari	Dr Arabinda Mishra	Role of institutional interplay in performance of local-level resource management institutions in the context of global environmental change
3	Madhuben Sharma	Dr Prateek Sharma	Water quality modeling for different water bodies in the foothills of Himalayas
4	Nidhi Gupta	Dr Vidya S Batra	Utilization of red mud as a catalyst for the processing of hydrocarbons to enhance the production of hydrogen
5	Shipra Rajesh	Dr Prateek Sharma & Dr Suresh Jain (Co Supervisor)	Inherent vulnerability assessment of rural communities in Kimsar region of Uttarakhand, India
6	Mamta Mehra	Dr Chander Kumar Singh	Conceptual framework to understand location specific variability for addressing sustained farm productivity challenges
7	Deepti Sharma	Dr Suresh Jain	Evaluating health effects and risk characterization due to emissions from biomass energy based traditional and advanced cook stoves in rural communities
8	Fawzia Tarannum	Dr Arun Kansal	Analysis of public perception of water quality and role of Information Communication Technology (ICT) in supporting participative management - a study along river Yamuna in Northern India
9	Priyanka Kohli	Dr J V Sharma	Impact of decentralized forest governance under The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act 2006 on REDD+ in India"
10	Shikha Aggarwal	Dr Prateek Sharma	A study of development controls and energy consumption at city level in Indian context.
11	Achla Behl	Dr Sapna A Narula	A study on the Evaluation of the Mobile Medical Units (MMUs) in Uttarakhand
12	Madhuri Kumari	Dr Chander Kumar Singh	Geostatistical modeling to predict precipitation in Indian Himalayas of Uttarakhand Region
13	Dinesh Chander Pant	Dr Arun Kansal	Development of efficient pretreatment system to improve the viability of AD for organic solid waste
14	Shelly Bogra	Dr Ritu Mathur	India's water footprint by environmentally extended input-output modeling
15	Vipan Kumar	Dr Sapna A Narula	Mapping climate technologies for energy sector in India: a comparative study vis-a-vis China and US

16	Nehru Machineni	Dr Anu Rani Sharma	Importance of air-sea coupling in understanding the tropical climate variability using a high resolution regional coupled ocean atmosphere mode (WRF+ROMS)
17	Shikha Tyagi	Dr Anandita Singh	Study of Transcriptional Regulators Involved in flowering in Brassica spp
18	Sneha Singh	Dr Banwari Lal	Screening and selection of efficient microbial strains for biohydrogen production under thermophilic condition
19	Swarnalakshmi	Dr Rajiv Seth	Barriers to investment in renewable energy: a risk perception approach
20	Neeraj Dangi	Dr Sapna A Narula	Consumer buying behavior in organic food and the role of eco-labels
21	Anandajit Goswami	Dr Atul Kumar	Essays on energy transition question
22	Anita Amarsingh Dahiya	Dr Chubamenla Jamir	Study of in-situ production of ozone and determination of leighton ratios to differentiate between background, stratosphere-intruded and photo-chemically produced ozone in Delhi
23	Abhishek Saxena	Dr Ramakrishnan Sitaraman	Development of osmotolerant yeast strain for ethanol production from lignocellulosic materials
24	Jyoti Kashyap	Dr Joachim Schmerbeck	Impact of anthropogenic disturbance on prey populations in Kumbhalgarh Wildlife Sanctuary, Rajasthan.
25	Manshu Madan	Dr Prateek Sharma	Stochastic modeling applications for local urban air quality management
26	Poonam Khatri	Dr Suresh Jain	Life cycle approach for improving the sustainability of mustard oil extraction and low-valued cake
27	Ashish Singla	Dr Banwari Lal	Bioconversion of synthesis gas to platform chemicals (ethanol and VFAs) thorough microbial interventions
28	Yogita Rai	Dr Deepti Gupta	Identification and functional characterization of calcium induced gene/s under dehydration stress in Oryza sativa
29	Tanu Sri	Dr Anandita Singh	Study of functional aspects of regulatory evolution in Brassica SOC1
30	Debajit Palit	Dr Atul Kumar	Towards convergence of grid and off-grid supply for effective rural electrification
31	Indu Barwal	Dr Alok Adholeya	Development of nanoparticulate based chimeric drug delivery system using drug bioconjugated plant virus capsids on biocompatible nanoparticles
32	Swati Kwatra	Dr Prateek Sharma	Development of regional scale composite sustainable development index using participatory approach
33	Garima Vats	Dr Ritu Mathur	Water-Carbon-Energy nexus in the Indian Power Sector: A focus on conventional fuels based thermal power generation

34	V Rangarajan	Dr Priyanka Kaushal	The Earth Air Heat Exchange: Prediction of performance in constrained urban sites
35	Anjna Sehrawat	Dr Ramakrishnan Sitaraman	Identification and characterization of Helicobacter pylori phospholipases
36	Anupama Singh	Dr Anandita Singh	Molecular and functional characterization of MIR160 and its targets from Brassica species
37	Binod Kumar Mahto	Dr P M Reddy	Development of transgenic liners of tomato and chilli plants against anthracnose disease
38	Anusheema Chakraborty	Dr Kamna Sachdeva	Climate change vulnerability of forests and livelihoods in the central Himalayan landscape
39	Aparna Tyagi	Dr J V Sharma	Assessment of implementation of the scheduled tribes and other traditional forest dwellers (recognition of Forest Rights) Act 2006 of Sonbhadra district of Uttar Pradesh
40	Sachin Kumar	Dr Prateek Sharma	Diffusion of cleaner production innovation among MSMEs - case study of brick sector in India
41	Sonia Grover	Dr Shresth Tayal	Assessing climate change impacts on water availability patterns in a mountain catchment
42	Sunil Dahiya	Dr Suresh Jain	Environmental Impact of electricity generation from coal using life cycle approach
43	Gyan Prakash Misra	Dr Priyanka Kaushal	With special reference to Ghazipur WtE project, study of process optimization of incineration based Waste-to Energy (WtE) plant, examine financial viability of process optimized WtE Plant and identify need for any policy and regulatory support.
44	Himanshu Chaturvedi	Dr Priyanka Kaushal	Biological treatment of MSW leachate with PVA Gel technology and scale up Methodology
45	Anupriya Desore	Dr Sapna A Narula	A study of environmental and social practices in Indian textile industry
46	Anurag Varma	Dr Shaleen Singhal	Contribution of cultural practices towards sustainability of urban development of Hindu religious towns in India: Case study of Mathura/ Vrindavan, Brajbhoomi, India
47	Megha Chandhiok	Dr Rajiv Seth	Openness of economy, spillovers and productivity growth: Firm level evidence from Indian services
48	Nidhi Gautam	Dr Manipadma Datta	Searching for Financial Sustainability of Micro, Small and Medium Enterprises (MSMEs) in India: An analysis in retrospect and prospect
49	Chetna Chauhan	Dr Suneel Pandey	An assessment and management of residues in e-waste recycling
50	Anand Kumar	Dr Chander Kumar Singh	Arsenic geochemistry in Indus basin, Punjab, India
51	Meenakshi Choudhary	Dr Chubamenla Jamir	Sustainability of organic agriculture (case study of Middle Gujarat Agroclimatic region)

52	Nathaniel Bhakupar Dkhar	Dr Shresth Tayal	A comparative assessment of glacier response to climatic setting through mass balance measurement
53	Pradeep Vashisht	Dr Shresth Tayal	Assessing energy balance of high altitude glaciered basin in the North -Western Himalayas
54	Ranjana Ray Chaudhuri	Dr Prateek Sharma	A framework for updating intensity duration frequency curves for storm events
55	Shailly Jaiswal	Dr Shresth Tayal	An assessment of vulnerability to local livelihood due to melt water variations in a mountain catchment
56	Sonal Bindal	Dr Chander Kumar Singh	Arsenic vulnerability in the Upper Gangetic Plains
57	Swati Singh	Dr Shresth Tayal	Assessment of Water-Energy-Food inter linkage in urban areas and developing a framework for adaptation
58	Anoop Anand Malik	Dr Shashi Bhushan Tripathi	QTL mapping in Jatropha using an advanced interspecific population
59	Pratiksha Jain	Dr Banwari Lal	Electrochemical treatment of petroleum waste water
60	Siddharth Sinha	Dr Pallavi Somvanshi	Functional Computational Approach towards structural insights of HDAC inhibitors as an anti Spino-Cerebellar Ataxia Agents
61	Tulika Bhardwaj	Dr Pallavi Somvanshi	Genome wide identification of virulence factors of Clostridium botulinum ATCC 3502 using next generation sequencing
62	Amit Kumar Thakur	Dr Manipadma Datta	Corporate Social Responsibility and Business sustainability in India - In Retrospect and Prospect
63	Shinu Vig	Dr Manipadma Datta	Corporate governance and sustainable value creation in Business: A study of select Indian firms
64	Devpreet Singh	Dr MV Shiju	Civilian nuclear energy and risk communication in India: Evaluation and strategies for an improved stakeholder engagement
65	Parvesh Kumar	Dr Shaleen Singhal	Assessment of socio-economic benefits of non- motorized transport integration with public transit in metro cities in India
66	Vatsala Koul	Dr Mandira Kochar	The Role of SmallRNAs in plant-associated bacteria under stress conditions
67	Rohit Sharma	Dr Kamna Sachdeva	Tropospheric ozone and aerosols as short lived climate stressors and their agricultural vulnerability
68	Sourabh Shrivastava	Dr Anu Rani Sharma	A study of drought occurrences and forecasting of drought events in the Indian subcontinent
69	Roopam Shukla	Dr Kamna Sachdeva	Assessing vulnerability of mountainous communities to climate change

70	Sonal Garg	Dr Piyali Das	Hi grade carbon from biomass and waste sources through pyrolysis route , its charaterization and application
71	Varsha Srivastava	Dr Malini Balakrishnan	Recovery of bioactive compounds (phytochemicals) from food processing waste
72	Md Ziauddin	Dr Shaleen Singhal	Evaluation of challenges and prospects of urban development: an exploratory research with special reforms to redevelopment in Delhi
73	Arpita Bisht	Dr Nandan Nawn	Social movements against expending commodity frontiers and the role of conflicts in altering patterns of extractivism
74	Niharika Tyagi	Dr Smriti Das	Gender and community forestry institutions: analyzing gender roles, identities and social capital in local forest governance
75	Shivani Wadehra	Dr Prateek Sharma	Public choice and solid waste management: A case study of Delhi households
76	Naveen Agarwal	Dr Naqui Anwer	Power market in India: Exploring the grey areas
77	Vivek Tyagi	Dr Manipadma Datta	Studying cases of business failures: A critical analysis aiming enhanced business sustainability
78	Parvathi Jayasankar	Dr Sridhar Babu	Assessment of few environmental factors in carrying capacity of Bangalore city
79	Gilmore Frederick G Momin	Dr Chubamenla Jamir	Climate change and food security in Garo Hills, Meghalaya
80	Ram Kumar Singh	Dr Vinay Shankar Prasad Sinha	Agricultural land dynamics in SAARC nations: Relevant to food security in climate change scenarios
81	Priyanka Tewari	Dr J V Sharma	Total Economic Valuation of ecosystem services provided by Sariska Tiger Reserve
82	Sahaj Kaur	Dr Sudipta Chatterjee	Lichen Conservation Areas (LCAs) for in situ conservation of lichen species preferred in trade in Uttarakhand, Western Himalayas
83	Snehlata Tigala	Dr Kamna Sachdeva	Health Impacts due to exposure to biomass combustion: A study over Karauli, Rajasthan
84	Sudeshna Maya Sen	Dr Arun Kansal	Variations in effectiveness and outcomes of adaptation interventions in Uttarakhand region
85	Sangeeta Agasty	Dr Sapna A Narula	Diffusion of cleaner production innovation in MSME sector in India: A study of drivers and inhibiters in select sectors
86	Dibyendu Samanta	Dr Seema Sangita	The dynamics of spatial development of India: agglomeration, coagglomeration, and Marshall's scale economies
87	Sourabh Jain	Dr Shaleen Singhal	An evaluation of carrying capacity based system dynamics approach towards emerging cities: Case studies for Surat and Chandigarh

88	Gp Capt Sanjay Kumar Srivastava	Dr Anu Rani Sharma	Mechanism of fog variability and prediction of fog events over the Indo-gangetic plains
89	Dharmesh Kumar Singh	Dr Shresth Tayal	Optimizing resource use and reducing water footprint of electricity generation in India
90	Lokesh Chandra Dube	Dr Ashish Agarwal	Assessing carbon and livelihood impacts of selected carbon forestry projects in India
91	N K Ram	Dr Priyanka Kaushal	Experimental study of Hydrogen enrichment in producer gas through steam, air gasification route
92	Gp Capt A Shajahan	Dr Rajiv Seth	Employment of aerospace power in disaster response: An analysis of existing framework in India
93	Anil Kumar Jain	Dr Ritu Mathur	Exploring the role of gas in India's energy mix
94	Vivek Kumar Singh	Dr Shashi Bhushan Tripathi	Development of cytoplasmic genic male sterile (CGMS) lines in Bhut Jolokia (Capsicum chinense x C. frutescens)
95	Aditi Singh	Dr Pallavi Somvanshi	Understanding the resistance mechanisms against first line anti-tubercular drugs & finding resistance-defiant novel leads
96	Anchal Priya	Dr Banwari Lal	Biotechnological intervention for production of 2, 3 Butanediol by indigenous bacterial strains isolated from hydrocarbon contaminated sites
97	Madhuri Nanda	Dr Arun Kansal	Sustainable Phosphorus Management: Addressing the resource challenge for India
98	Ved Prakash Sharma	Dr Suresh Jain	Assessment of air quality and related health impacts around land-fill site in an urban area
99	Suchita Awasthi	Dr Kamna Sachdeva	Urban water allocation in a changing climate regime: A study of drought prone regions of Maharashtra
100	Amruta Pattnaik	Dr Basudev Prasad	To explore the metal nano particles of plasmonic enhanced upconversion materials in C-SI Solar cell
101	Nimisha Singh	Dr Malini Balakrishnan	Recovery of antioxidants from distillery wastewater using Forward Osmosis (FO)
102	Sujata	Dr Priyanka Kaushal	Life cycle cost analysis of existing and suggested infrastructure to meet Ethanol blending mandate in India
103	Anjulata Singh	Dr P M Reddy	Engineering the modulation signaling pathway in the Rice plant to promote rhizobial infection and nitrogen fixing symbiosis
104	Meenakshi Kumar	Dr Shaleen Singhal	Multifunctionality of urban green infrastructure for the competitive advantage of cities in India
105	I V Rao	Dr Rajiv Seth	Strategy for business sustainability of MSMES in the Indian auto industry: Status and way forward
106	Sulaksha Shetty	Dr Manipadma Datta	A study on organization and its leadership for sustainable development with particular reference to the Indian situation

107	Anuradha Bhattacharya	Dr Suneel Pandey	To assess EPR to achieve the mandate to mainstream informal e-waste recycling in India
108	Akanksha Balha	Dr Suneel Pandey	Runoff Modeling for present & future scenario: a case study of Delhi watershed
109	Charu Bhanot	Dr Sudipta Chatterjee	Conservation significance of Najafgarh lake: An urban wetland of Delhi and assessment of its habitat as a refugia of resident and migratory birds
110	Divya Sharma	Dr Kamna Sachdeva	Gendered vulnerabilities of climate change shocks and adaptive decision making: A study of lower and middle Uttrakhand region
111	Nishitha Bajaj	Dr Suresh Jain	Assessment of low carbon development pathways for India
112	Sandeep Dahiya	Dr Suresh Jain	Synergies and convergence between Indian energy policies and multiple Sustainable Development Goals (SDG 3, 7 & 13): A case of India
113	Tanya Sharma	Dr Suresh Jain	Assessment of the nexus between built environment, travel behaviour, air quality, and human health to re-inform the transport system
114	Birinchi Bora	Dr Basudev Prasad	Energy rating and reliability of PV modules
115	Kamlesh Yadav	Dr Atul Kumar	Optimum energy utilization in decentralized PV system
116	Rakesh Kumar Choudhary	Dr Malini Balakrishnan	Embedding RECP in Indian MSMEs
117	Renu	Dr Basudev Prasad	Performance Modelling and Systematic Optimization of SPVWPS for different climatic zones for irrigation purpose in India
118	Saad Nazif Ahamad Faruqui	Dr Naqui Anwer	Performance evaluation of a novel transformerless Z-source multilevel solar photovoltaic inverter
119	Madhurima Waghmare	Dr Shaleen Singhal	Inclusive cities and creative habitats - Exploring the dynamics in context of the diverse Indian cities
120	Yogesh Tyagi	Dr Shaleen Singhal	An assessment of relationship between MRTS and real estate values: Case study of Delhi
121	Gurdeep Kaur	Dr P M Reddy	Development of transgenic rice lines resistant to sheath blight through modulation of lignin biosynthesis pathway genes
122	Nanditha Krishnan Vimalakumari	Dr P M Reddy	Bioengineering of rice for improved phosphorus use efficiency
123	Swati Patel	Dr Dheeban Chakravarthi Kannan	Studies on commercial viability on microalgae Biofuel production
124	Anushree Poddar	Dr Sapna A Narula	CSR Orientation, Implementation and its relation with Firm Performance - A study of selected firms in India
125	Ayushi Vijhani	Dr Vinay SP Sinha	Assessing influence of climate change on water availability and distribution on vulnerable communities in Central Himalaya

126	Amit Jain	Dr Smriti Das	Locating forest community in forest governance: Cases of two villages from Jharkhand, India
127	Kirti Rawat	Dr Nutan Kaushik	Characterization of Fusarium fujikuroi isolates causing Bakanae disease of basmati rice and its management through biocontrol agents
128	Paromita Das	Dr Vibha Dhawan	Eco-safety studies of bare and modified Titania nanomaterials used as adsorbents and photocatalysts for efficient waste water treatment
129	Preeti Rana	Dr Pallavi Somvanshi	Conformational ensembles guided inhibition of prior aggregation
130	Varsha Bisht	Dr Banwari Lal	Developing bacterial and plant-based biofloccants for wastewater treatment
131	Soumendu Shekhar Roy	Dr Chander Kumar Singh	Defining the nature of metamorphism of the litho- units of Lesser Himalayas (Kumaon) using sensor

# HONOURS AND AWARDS FACULTY

### Dr M P Ram Mohan

- Appointed as an expert adviser to Energy Law Fellowship, Gujarat National Law University
- Appointed to Apex Committee constituted by Uranium Corporation of India Limited subsequent to the recommendations of Jharkhand High Court on radiological surveillance in public domain in and around different units of UCIL.
- Convener and Member of the Judges Panel for the S N Bose Prize 2016 for the International Nuclear Law Congress 2016.

### Dr Prashant Kumar Singh

Received the Max Planck-India Mobility Fellow Award (2016-19) from the Max Planck Society, Germany, for collaborative research activities with the scientists/researchers at Max Planck Institute for Demographic Research (MPIDR), Rostock, Germany.

### Dr Chaithanya Madhurantakam

Awarded the prestigious "Ramalingaswami Re-entry Fellowship"- 2015; a fellowship and grant provided by the Department of Biotechnology (DBT), Ministry of Science and Technology (Government of India) to Indian nationals working in overseas Institutions to pursue their R&D work at Indian institutions for a period of five years.

### **STUDENTS**

### Pankaj Kalyani and Praanjal Agarwal

Won the first prize in Eco-Club Quiz on Conservation of Petroleum Products for the event Saksham 2017, organized by Petroleum Conservation Research Association and other Oil & Gas PSUs under the aegis of Ministry of Petroleum & Natural Gas.

### Pankaj Notani

Paper presentation on 'Investigating the potential of ASR wells in New Delhi' at the International Conference on Modelling of Environment and Water Resource System (ICMEWRS), March 24-26, 2017 held at Harcourt Butler Technological University, Kanpur.
### **Medha Bantalpad**

Paper publication titled, 'Seasonal Crop raiding of fruit trees by Asian Elephants: An insight into foraging preferences from croplands abutting Bannerghatta National Park, Bengaluru, Karnataka' in the Asian Journal of Environment and Ecology, 3 April 2017. http://www.sciencedomain.org/issue/2447

### Kanika Joshi

Listed by the UN Environment as the 'Face for Change', in the world in their new directory Faces4Change – UN Environment Cities and Lifestyles

## Kanika Joshi, Martand Shardul and Palak Aggarwal

Alumni of MA Sustainable Development Programme played a significant role in the first edition of Youth Solutions Report, produced by the youth initiative of the UN Sustainable Development Solutions Network. The report was released at the United Nations Headquarters in New York on 31 January 2017. The report has been reviewed by a panel of experts, comprising leading figures from business, civil society and academia.

### Sahil Singh Kapoor

Presented research paper, titled 'Self Sustainable Integrated Township: a resource base planning to improve the quality of urban life' at the International Conference on Smart Cities held on 22 - 23 January, 2016. The event was held at the Department of Management Studies, Indian Institute of Technology, New Delhi.

### Saurabh Motiwala and Sarvesh Devraj

Together published paper, titled 'Steam Cooking System at Dayalbagh Institute in Agra, UP', in SUN FOCUS, a quarterly magazine on Concentrated Solar Heat (CSH) Vol.3, Issue 4, pp 16 April–June 2016.

### **Devakshi Nayar**

Student of MA Sustainable Development Practice programme, 2011–13 batch and now an alumna of TERI University, started her own enterprise, 'Hope Collective', an e-Commerce platform for merchandise produced by NGOs and social enterprises. The start-up not only aids the NGOs by enabling them and reducing the dependency on charity, but it also supports and provides a voice to various social, economic or environmental causes, which do not generally find place in the traditional marketplace. Devakshi's start-up was recently featured in the Business World Disrupt (22 June 2016). http://bwdisrupt.businessworld.in/article/Hope-Collective-An-eCommerce-Platform-for-Merchandise-Produced-by-NGOsand-Social-Enterprises/22-06-2016-99495/

## **Soudipan Maity**

Won third prize in the Digital Photography Competition organized by TERI as part of Independence Day celebrations, in August 2016, for Vidyasagar Setu, Kolkata. The theme for the year 2016 was 'Colours of India.'.

## Florencia Tuladhar

Alumnus, MSc Geoinformatics, 2013–15 batch and also a former Sindicatum Climate Change Foundation (SCCF) scholar received the Nepal Bidya Bhusan Medal by Honorable President of Federal Democratic Republic of Nepal, Ms Bidhya Devi Bhandari, on World Literacy Day. Florencia received the award in recognition of achieving the gold medal for topping MSc Geoinformatics programme from TERI University. This medal is awarded annually to students who top their respective academic programmes.

# Harsh Jaiswal

Student of MA Sustainable Development Programme, TERI University secured third position in the Sitaram Rao Livelihoods Asia Case Study Competition 2016. The title of his case study was 'Sustainable Agriculture — A New Partnership Paradigm in Dantewada'. http://livelihoodsasia. org/sitaram-rao-c.../final-results.html



# **STUDENT CLUBS AT TERI UNIVERSITY**

The University has eight active clubs (a) Dramatics Club, (b) Elocution Club, (c) Eco-Club, (d) Sports Club, (e) Music and Dance Club, (f) Media and Photography Club, (g) Social Cause Club and (h) Entrepreneurship Development Cell.

- **Dramatics Club:** Students engage in activities like street plays, drama to spread awareness on sustainability and development issues.
- **Elocution Club:** This Club primarily focus on strengthening skills of students in public speaking, confidence building, and overall personality development. Debates, quizzes, JAM sessions, poetry recitation, writing, etc. are some of the activities, which students undertake.
- **Eco-Club:** Organizes and celebrates environment-related events and activities, such as 'No Plastic Day,' 'Earth Day,' 'International Youth Day', tree plantation drive, etc. In 2016, Eco-Club introduced 'No Paper Cups' campaign on campus, which was successfully implemented in early 2017. Now every Wednesday has been declared as 'no paper cup day' in TERI University.
- **Sports Club:** The Intra-University Sports Meet is an annual sports extravaganza organized by the TERI University's Sports Club. It's a two week long event, which includes sports like badminton, table tennis, cricket, athletics, volleyball, football, basketball, and carom. All the sports events take place in the University premises except cricket and athletics, which are held at TERI Gram, Gurgaon. This helps foster healthy sportsman spirit amongst students.



- Music and Dance Club: This club encourages artistic pursuits and promotes talent of the students. It regularly organizes musical performances by students and artists from outside. It helps develop and hone students' interest in music and traditional/contemporary dance forms.
- Media and Photography Club: This club helps in creating awareness about the TERI University activities and its philosophy to the world outside through the mode of writing and photography.
- Social Cause Club: This club was set up with the initiative of students of TERI University to promote community participation and work towards social cause. In 2016, students organized clothes donation camp where not only students but all staff members of TU donated clothes for the underprivileged children. The proceeds were given to an NGO. In April 2017 students organized blood donation camp in association with the Rotary Club. Many students and staff members of TERI University came forward and donated blood.
- Entrepreneurship Development Cell (EDC): This cell emerged from the 'Ideation Club' of the University. EDC has been established to promote the spirit of innovation and entrepreneurship among the students of the TERI University. Skill building, experience sharing and networking programmes are a regular feature of this cell.



# **TERI UNIVERSITY LIBRARY**

The Library and its collections and services continue to grow and evolve. It delivered a number of electronic services and an ever-wider range of resources in order to support teaching, learning, and research. The Library continually seeks to identify key areas to add value and develop services that facilitate seamless access to e-resources. It engages in partnership initiatives with academic colleagues and national and international universities. The Library has demonstrated that it is a crucial component of the academic-cum-research environment. It exemplifies modern methods for creating, applying, and utilizing digital resources and services. The services are offered electronically through a web-enabled integrated digital information system. Electronic resources and services are centrally organized and available via a single-window access.

The Library embarks on university wide information literacy efforts, targeting everyone from students to faculty. It proactively engages in scholarly interactions with users and makes digital library resources and services more visible, more used, and better attuned to user needs. The digital library literacy classes are integrated into curricula and these are conducted in partnership with faculty in the online learning environment. On-campus dissemination of collections, audio, and video, archive, and recorded media provide access to digital collections. The digital library system works across locations to create connections among individuals and departments.

The Library customizes digital services for various users, based on their needs, to support expanding modes of research, teaching, and scholarly communication. The tools have web interfaces that allow integrated access to all intellectual content, in-house e-collection, and external digital resources available to the users regardless of format, source, or location. The digital services support specialized teaching needs as well as global and local reach.

Digital library services' development is prioritized according to user needs. The University's specific in-house special collections are integrated in online networked services. To facilitate sharing of resources, TERI University library familiarizes users with the information available at other university libraries within region, nation, and worldwide. It helps students become more information literate, by conducting subject-specific user-education sessions.



Students Using the Library

The Library is embedded in departments as well as in instruction and works closely with the students, faculty, PhD scholars, and researchers to meet their needs. It improves their experience of using scholarly resources thus providing innovative, responsive, and effective services to meet the changing needs of the academic community. In addition to scholarly electronic journals and books, it provide for access to data (economic, corporate, social), news, reports, and analysis to its users. The library is moving towards transition to open access for both journal and monographic materials in ways that result in a more cost-effective system that provides high-quality scholarly content when and where it is needed.

The Library actively engages and connects with the user communities. Helps students to get their work published; supports them to get scholarships, internships, projects, and jobs, thus creates efficiencies for students of each department. Provides help in course readings for all departments and offers convenient access to their assigned readings. It connects into existing course and teaching workflows through the TERI University Portal, Digital library e-resources and e-services, and involves in new learning initiatives, like online courses as well as distance learning. To explore some of these newer models, the library continues to build partnerships with diverse crosssection of publishers, from academic to trade, higher education to university presses. The library facilitates learning and education either through direct instruction or online interactions; and train users to use a variety of resources.

While the University Library in the campus supports students and faculty through its core services, it also focuses on the student opportunities to help students grow and succeed through national and international events and enables the users to connect and transform their lives.



Integrated Information System



**TERI** University Digital Theses



**E-Publications** 

# **IT INFRASTRUCTURE AT TERI UNIVERSITY**

The TERI University has state-of-the-art IT infrastructure and is equipped with the latest tools and technology. The LAN setup with secure from all internal and external threats. The faculty, staff, and students can access IT infrastructure after successful authentication and authorization. The file services are maintained for storing institute data on a central repository. The smart printing service is enabled for faculty and staff members. Access to multiple resources such as the Internet, Students Information System, Learning Management System, University Portal, and Digital Library are made available on all workstations across the University.

The campus is fully Wi-Fi enabled, internet link with a capacity of 45 mbps bandwidth. Separate dedicated links are available that connect the campus to access resources such as the University Portal, Digital Library, etc. Cloud technology is introduced for mailing through O365, which allows faculties, staff, and students to communicate using mail, audio/video/text chat, group discussion, calendar sharing, and data storing. The campus has a dedicated computer lab with 20 computers, having various specialized scientific software installed, such as MATLAB, PVSyst, WAsP, etc. The Geoinformatics Lab which comprise of another 20 computers with ARC GIS and ERDAS software is also available for students. Video conferencing facility for distance learning and a media lab is available for recording and streaming of lectures. Centralized IT Helpdesk staff is present round the clock for addressing IT-related issues in the least possible time. The TERI University Portal is an online gateway to information and resources at the University. It helps keep students and the faculty informed of happenings across the campus. The University has created and maintained e-learning portals in Moodle platform for online programmes to offer distance education for student across the globe. These course modules are rich in audio and video and have interactive web-based contents.

# Highlights

- All Faculty and Staff systems are using i3 / i5
- Classroom are upgraded on i3 / i5
- Upgraded Projectors in all classroom and lecture hall
- Secure Colour printing service
- Video Conferencing facility for online lecture and meetings
- Cloud technology is introduced for mailing, which allows faculties, staff, and students to communicate using mail, audio/video/text chat, group discussion, calendar sharing, and data storing
- Lease Line upgraded from 20 Mbps to 45 Mbps
- 24X7, NOC support for Wi-Fi
- Archiving usage history logs as per the DOT norms
- Smart Hub for collecting Payment

- Point to point links are available that connect the campus to access resources such as the University Portal, Digital Library, etc.
- Cyberoam network security service enabled for Anti-Virus, Anti-Spyware & Anti-Spam, Intrusion Prevention System (IPS), Content & Application Filtering, Web Application Firewall, Application Visibility & Control, Bandwidth Management, Multiple Link Management for Load Balancing
- Centralized IT Helpdesk staff is present round the clock for addressing IT-related issues at the earliest possible
- Centralized Symantec endpoint protection for users

### **Media Lab**

A media lab with latest audio and video mixer, high-definition robotic camera, and web-streaming server facility and a video conferencing system is set up at the TERI University for providing distance learning and e-learning. The lab allows developing e-content for university education at various levels in environmental science courses such as environmental pollution and control, water and wastewater treatment, air quality management, integrated impact assessment, and environmental economics. The media lab is equipped with a digital glass notebook for live interaction, two high-definition plasma screens for clear picture view, Digital Video Recorder, and 1 Terabyte of storage server for archiving the course material as well as Cisco Telepresence video conferencing system for distance learning. The audio/video editing is done using the Sony VegasPro software.

### **Student Portal**

The Student Portal of the TERI University provides a single point of access to online university services and information of current staff and students. The portal can be accessed globally. Students can use the following features and services:

- Time table
- Attendance
- Course outline and feedback
- Exam result
- Placement,
- Latest news, events, and announcements

Welcome to TERI University Portal	
Please entry your TDN University O and password to access to yourd password password	Allows TER libraries by Hortal They porter in your actions galaxies to influence the influence of a more service a transport TER to conversely, and largenic it evaluates you to average a range of personal and information relaxations of the service a transport of under your personal default, including taxic address and memory and conduct sprawers have been the toos, the service actions the control of service registrates from too the toos more address will been you as who have advected and avertice states will been you as who have separate and the averand states will been you as they with the have been you in the averand and haven.

### **Open and Distance Learning**

The Centre will plan, implement, coordinate and monitor operationalization and quality assurance of the programmes in open and distance learning mode, including monitoring of the conduct and programme delivery by the learner support centres and shall adhere to the regulation and guidelines of UGC and other regulatory authorities.

#### **Social presence**

Our social presence is on the following sites:

• Facebook

www.facebook.com/teriuniversity

• Twitter

https://twitter.com/teriuniv

#### • Youtube

https://www.youtube.com/user/ teriuniversity



# **GREEN CAMPUS**

TERI University 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 University 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 University. 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 fasade 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
- Solar Rooftop System
- LED lights across the campus
- Wind mill

# TERI UNIVERSITY LABORATORIES (RESOURCES)

TERI University 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 University 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 to 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, the laboratory 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 postgraduate 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 instruments and support facilities that are available in the lab are 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 University 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 software, 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 University 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.

#### **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 laboratory 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 Laboratory 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

# **SCHOOL-UNIVERSITY NETWORK**

TERI University, in its endeavour to promote networking with all potential stakeholders including the school children has initiated the School - University Network (SUN). This endeavour is built on the understanding that existing school curriculums inadequately cover sustainability related issues in tune with complexities of development. The proposed SUN initiative is aimed at bridging this gap.

The key objectives of this initiative are:

- To provide comprehensive understanding on key sustainability issues
- Offer ways and means to adopt sustainable lifestyles
- Offer different ways to see the world in terms of the goals of sustainable development.
- Be the champions of sustainability-centric development ideas and practices

As part of this network, students from secondary and senior secondary level from schools based in Delhi-NCR are invited to be a part of experiential learning visit to the University campus. The sessions are focussed on five broad areas – climate change; energy efficiency; waste management; water management; and urban sustainability. This initiative is driven entirely by the students of the University and the participating schools.

The participating school selects a batch of 40-50 students to visit TERI University for the interactive session on one specific theme as mentioned above. Multiple pedagogical tools (interactions with the trainers, discussion centric deliberations; documentaries, various experiential and visual methods of learning); are used to educate them on the chosen theme.

TERI University's Masters Students act as trainers/instructors for the programme. However, the broad guidance is provided by TERI University Faculty Members/ Programme Coordinator.







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