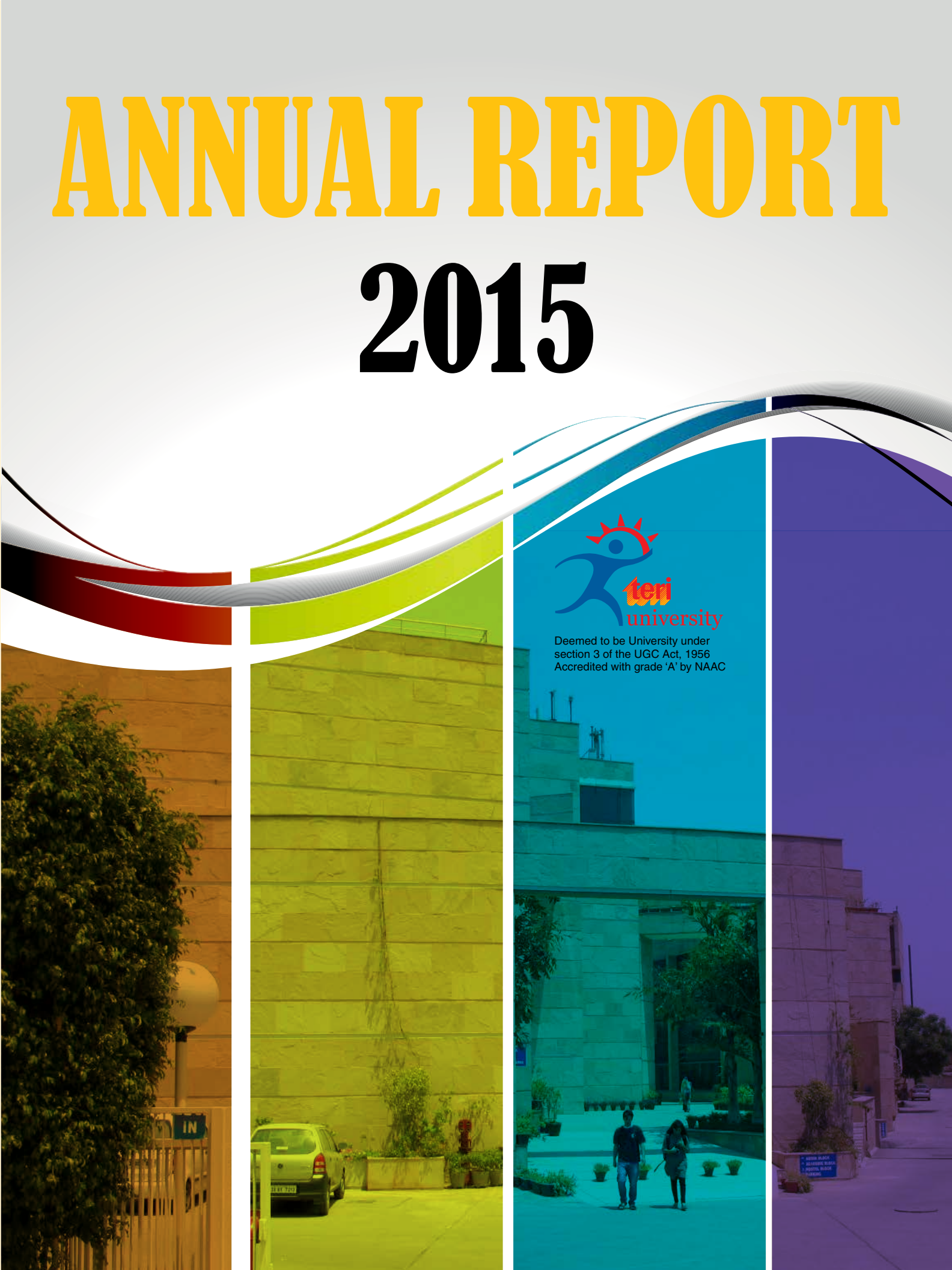
ANNUAL REPORT

2015



teri university

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

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TERI UNIVERSITY

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NOTE FROM THE CHANCELLOR

The year 2015 ended with several global developments of strong relevance for the future of human society and the well-being of planet Earth. For much too long human activities and the expansion of our economic footprint has been expanding beyond the capacity of the Earth's ecosystems to be able to withstand on the strength of nature's inbuilt resilience. In particular, the increase in the concentration of greenhouse gases in the Earth's atmosphere has, since the middle of the last century, been the dominant force behind the changing climate of the Earth. The agreement reached in December 2015 at the 21st Conference of the Parties held in Paris provided hope that perhaps all the countries of the world can now deal with this growing challenge in an effective manner through collective action.

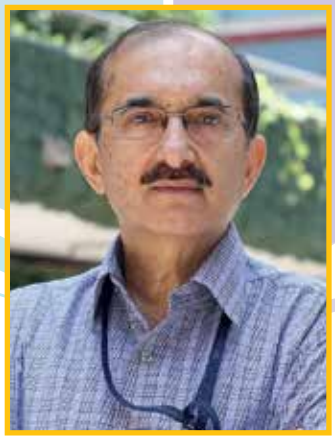
Climate change is essentially a symptom of a much larger problem that of a pattern of development, which is now clearly unsustainable in several respects. TERI University was conceptualized as an institution and brought into existence in the last decade of the last century, because by then it had become obvious that every stakeholder group and every profession in the world would have to create, disseminate and utilize knowledge that would take human society on the path of sustainable development. Knowledge is the only basis, on which rational decisions can be made and visionary directions set, so that what seems unattainable in a world of entrenched positions, frozen inertia based on ignorance and neglect of knowledge becomes feasible and often brought within reach.

Thought leaders in every field have now provided us with understanding on the need for new knowledge and moving away from the beaten path and for thinking out of the box. TERI University has clearly developed into an institution of higher learning where innovation is the guiding light of the endeavour both of the faculty as well as the student community and values that serve the larger interest of human society and all living species. In more than a decade and a half of its existence TERI University has acquired several new skills and reassessed the relevance or otherwise of conventional skills, which have existed worldwide through many decades. This is what a research-based institution, which is constantly endeavouring to uncover values that are truly important for human society and this planet, must indeed do.

TERI University has the benefit of not only being promoted by a large sustainable development focused research institution like TERI, but a synergy that ensures a practical dimension in the knowledge that the University creates and imparts to its students. It is this link with the real world that makes the graduates of this Institution effective change agents for a knowledge-based sustainable future.

Dr R K Pachauri
Director-General, TERI, and
Chancellor, TERI University

NOTE FROM THE ACTING VICE-CHANCELLOR



Being an institution of constructive inquiry in the realm of sustainable development, research at the TERI University has to focus on finding answers to the problems that the world faces today. At the same time, it is imperative that our students be trained to create questions. They have to be ones who doubt, who are excited enough and passionate enough to explore the unexplored, and who go about doing things that others don't. To use Dr Abdul Kalam's term, TERI University has to ignite minds.

And so faculty members at the University are continually modifying and adjusting curricula to bring in the latest research, and to imbibe a sense of curiosity and creativity in students they teach and guide. At times, the demands on them are unsettling, but it is this very fact that makes them think afresh.

This year, the TERI University's alumni crossed a thousand. It is their success, which can be seen as a measure of success of the University. It is most gratifying to see them working in NGOs, consultancies, the corporate world, government agencies and research institutions. It is even more gratifying when we hear that they think differently, and that they create questions and look for the answers—that's just what we would like our alumni to be known for.

At this stage of our growth path, we have decided to lay a greater stress on our capabilities to run short-term and distance education programmes. We intend to organize short-duration training programmes, both for working professionals and for other self-sponsored candidates who might be interested. In addition, we plan to create online certificate programmes, which can be completed at one's own pace. With this, we hope to disseminate aspects of sustainability and sustainable development to a larger section of society.

Dr Rajiv Seth
Acting Vice-Chancellor
TERI University

NOTE FROM REGISTRAR AND HEAD (OUTREACH)

The reforms to merge departments and create an interdisciplinary academic structure made the year 2015 a very special year for the University. The year also saw important developments such as planning for an off-campus at Guwahati, setting up of a Centre on Legal Studies, establishment of a research Chair by Railways and growth in academic and research activities.

The University has been able to attract faculty and students of high quality and has continued to facilitate state-of-the-art facilities. The quality of research is indicated by publications in reputed journals and strong project funding, which was about half of the total budget. The curriculum, teaching and research infrastructure has been improved. Policies on various issues have also been revised to conform to changing legal environment and statutory directives.

The scholarship schemes have been strengthened by availing more number of sponsorships and introducing a special scheme during the admission to attract meritorious students. Augmentation of a Central Display Panel ensured smoother dissemination of information. The University remains committed to being inclusive, as a diverse population of students, faculty and staff from different religions, castes, cultures, physical abilities and country are its greatest strengths. All major festivals were celebrated with pomp and gaiety.

The outreach efforts of the University was strengthened during 2015, especially by the faculty and continued education events like BLISS, SWASH , REtopia, and SWITCH. We continued to open our doors to the community with a large number of visitors and students touring the campus during the above events.

In the Seventh Convocation of the University, honorary doctorates were conferred on Mr V V S Laxman, former Cricketer, Mr Paul Polman, CEO, Unilever, Mr Hiroaki Nakanishi, Chairman and CEO, Hitachi, Dr Jose Manuel Ramos-Horta, Former President of East Timor. A total of eight doctoral and 178 master's degrees were conferred on successful students.

2015 was an important year in the annals of our University and the commitment of our staff has been the foundation, on which we have made progress in various areas.

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

DEAN ACADEMIC

A major restructuring in terms of roles of deans was carried out last year within the University, with the intent to encourage interdisciplinary learning and it did away with hitherto Faculty Applied Sciences and Policy Planning. Three positions were created to focus primarily on Academics, Research and Distance and Short-term Education. As a result, Dean (Academic) is responsible for academic matters related to all programmes offered by the University. All the departments are committed to carry out teaching and research in the area of sustainable development. Teaching and research ensure a multi- and inter-disciplinary approach that is required to address complex sustainability issues that cut across disciplinary boundaries. The pedagogy integrates information and knowledge from different disciplines.

A new Department supported by the Coca-Cola Foundation was launched—The Coca-Cola Department of Regional Water Studies, with an aim to build core competencies among students, researchers, policy makers, and professionals to face challenges in managing water resources. The Department offers doctoral, MTech, MSc, and Diploma in Water Science and Governance. The University in its continued pursuit to offer programmes on the broader theme of sustainable development launched a much needed LLM programme with specialisation in Environment and Natural Resources Law and Infrastructure and Business Law; while the former focuses on understanding how the legal framework can reorient economic activity towards sustainability, the latter addresses the policies and laws relating to major sectors viz., transport, energy, telecommunications, urban infrastructure, and water. A Centre for Post Graduate Legal Studies has been set up as an interdisciplinary Centre of Excellence dedicated to legal research, teaching and outreach activities. The one year LLM programme will be offered under the auspices of the Centre through the Department of Policy Studies.

The University also from time to time keeps reviewing its programmes based on the inputs received from academia, industry, alumni, and other stakeholders. In this direction, a major programme review exercise was undertaken by the Department of Biotechnology for the MSc (Plant Biotechnology) programme. Inputs were taken from industry, research institutions, academia, and alumni.

The University has several plans to review and update its programmes and to initiate new programmes that are unique and have societal relevance in the coming year.

Dr Prateek Sharma
Dean Academic
TERI University

DEAN DISTANCE AND SHORT-TERM EDUCATION

The TERI University envisions "becoming a globally recognized institution known for transforming communities and societies into new kind of knowledge societies through training and skill enhancement in sustainable development." It was realized that if the TERI University wants to contribute globally by serving society as a seat of advance learning and to promote learning through creating and sharing knowledge, it must reach out to the wider stakeholder community.

'Advanced Postgraduate Diploma in Renewable Energy' (APGDRE)—started in collaboration with UK Open University and approved by the Distance Education Council, India, and the University Grants Commission—was the first major initiative in this direction. This two-year programme is running successfully for the last six years. This programme, aimed at working professionals, has been designed to facilitate a flexible, self-paced, and value-oriented learning environment.

Over the years, the constant endeavour has been to make this programme truly digital by way of reaching out far-off corners of the globe, providing students a lot of flexibility and yet keeping it interactive. The pedagogy, therefore, includes use of online platform for dissemination of study material and learning through webinars. In today's fast-changing renewable energy scenario, special efforts were put in, to thoroughly revise the study material and coursework. Besides, the once-a-year admission process was changed to introduce twice-a-year admission thereby providing more opportunities to the aspirants. Addressing the concerns of the international student community, remote location examination facility too was introduced during the year without compromising the integrity of the evaluation process. The interactive feature of the programme was further strengthened through greater use of discussion and webinars. The overall delivery system was made more user friendly by incorporating latest technological developments in the field.

In addition, the year also saw development of the roadmap for moving further on this journey. Considering that the TERI University has already carved out a niche in the area of sustainable development, it is but natural to start more short-term and distance education programmes that leverage on the existing knowledge repository as well as infrastructure facilities. Again, looking at the requirements of the working professionals to enhance their capabilities, these short-term and refresher courses would be specifically designed to bridge their knowledge gaps. It is also proposed to offer specific short-term programmes to the faculty members of other institutions imparting education in the field(s) related to sustainable development. One of the innovations to make such programmes more interactive and hands-on relates to virtual and remotely accessed virtual laboratories, integrated with these learning formats.

Amit Kumar

Amit Kumar
Dean Distance and Short-term Education

BOARD OF MANAGEMENT

Chairman

Dr R K Pachauri
Chancellor

Members

Dr Leena Srivastava
Vice-Chancellor (on Sabbatical)

Dr Rajiv Seth
Acting Vice-Chancellor

Nominee of the Government of India

Air Marshal K K Nohwar (Retd)

Nominees of the Chancellor

Dr Yasmine Hilton
Chairman, Shell Companies in India

Mr Tulsi R Tanti
Chairman and Managing Director, Suzlon Energy Limited

Mr Ashok Lavasa
Secretary, Ministry of Environment, Forest and Climate Change

Mr T N Thakur
Former Chairman and Managing Director, PTC India Limited

Prof. Parthasarathi Shome
Chairman, Tax Administration Reform Commission (TARC), Ministry of Finance

Mr Prashant Bangur
Director, Shree Cement Limited

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

Nominee of Sponsoring Society

Mr Shri Prakash
Former Chairman, Standing High Power Committee, Ministry of Railways

Academic Professionals (Teachers)

Prof. S Sundar

Prof. Manipadma Datta

Deans

Dr Prateek Sharma

Mr Amit Kumar

Registrar

Capt. Pradeep Kumar Padhy (Retd)

ACADEMIC COUNCIL

Chairperson of the Council

Dr Leena Srivastava
Vice-Chancellor (on Sabbatical)

Dr Rajiv Seth
Acting Vice-Chancellor

Deans

Dr Prateek Sharma

Mr Amit Kumar

Nominees of the Vice Chancellor

Dr Kanchan Chopra
Former Director, Institute of Economic Growth

Dr Malathi Lakshmikumaran
Lakshmikumaran and Sridharan Attorneys

Prof. T C Kandpal
Indian Institute of Technology, Delhi

Co-opted Members

Dr Anubha Kaushik
Guru Gobind Singh Indraprastha University, Delhi

Dr Vivek Suneja
Faculty of Management Studies, Delhi University

Dr Rakesh Khosa
Indian Institute of Technology, Delhi

Heads of the Departments/Centres

Prof. Manipadma Datta
Department of Business Sustainability

Dr B Prasad
Department of Energy and Environment

Dr Suresh Jain
Department of Natural Resources

Dr Anandita Singh
Department of Biotechnology

Dr Suneel Pandey
Centre for Regulatory and Policy Research

Dr Pallavolu Maheswara Reddy
Centre for Bioresources and Biotechnology

Dr Shaleen Singhal
Department of Policy Studies

Dr Arun Kansal
Coca-Cola Department of Regional Water Studies

Professors

Prof. S Sundar

Faculty from Departments

Dr Priyanka Kaushal
Department of Energy and Environment

Dr Kaushik R Bandyopadhyay
Department of Business Sustainability

Dr Nandan Nawn
Department of Policy Studies

Dr Sitarman Ramakrishnan
Department of Biotechnology

Dr Vinay Shankar Prasad Sinha
Department of Natural Resources

Dr Chander Kumar Singh
Department of Regional Water Studies

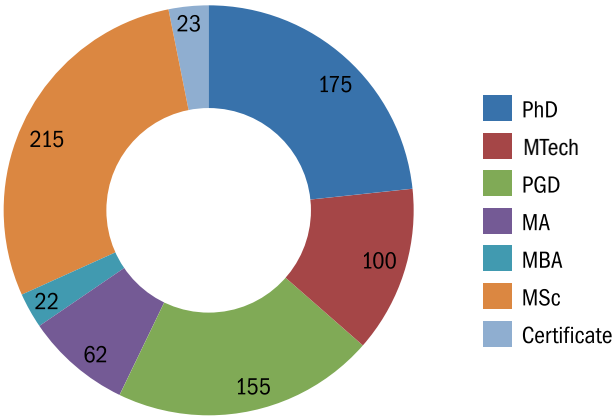
Registrar

Capt. Pradeep Kumar Padhy (Retd)

STUDENT-FACULTY STRENGTH

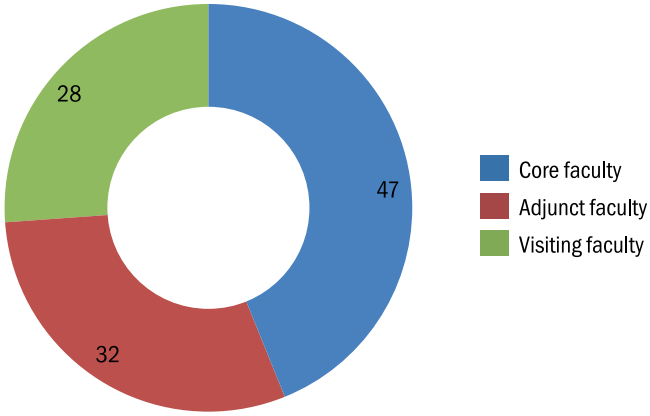
No. of Students Course Wise

(December 2015)



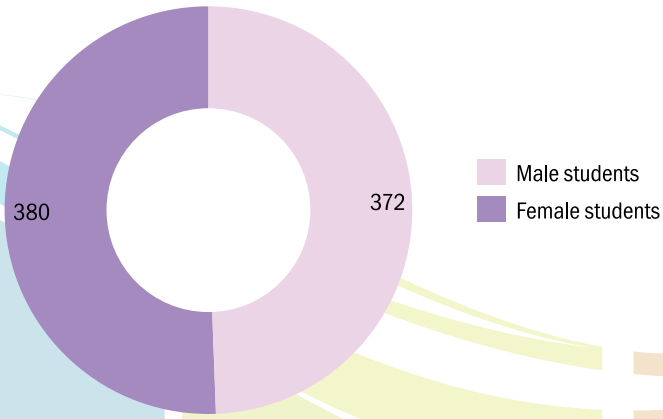
No. of Faculty Members

(December 2015)



Combined Student Gender Ratio

(December 2015)



STRUCTURE OF TERI UNIVERSITY AND PROGRAMMES

ABOUT TERI UNIVERSITY

The TERI University was established to disseminate the vast reservoir of knowledge devised by The Energy and Resources Institute (TERI), a not-for-profit, independent research institute recognized globally for its contribution to scientific and policy research in the realms of energy, environment, and sustainable development. The 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 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 its current location, the University was housed in the Darbari Seth Block of India Habitat Centre from 1998 to 2008. In 2008, the TERI University started functioning from its new 'green' campus, located in Vasant Kunj.

The University aspires to be an institution of advanced learning that meets the needs of a rapidly growing India. 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 the 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

The TERI University has structured its academic programmes around the research experience and skill sets gained by TERI over the past three decades. 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 TERI 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 in the interface between energy and the environment. Engaged in research in the broad area of clean technologies to achieve energy efficiency and minimize adverse environmental impacts.

Department of Biotechnology

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

Coca-Cola Department of Regional Water Studies

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

Centre for Bioresources and Biotechnology*

Dedicated to promoting and advancing innovative research with emphasis on management of plant and microbial bioresources.

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 Regulatory and Policy Research*

Seeks to enhance and augment current understanding and implementation of policies and regulations to encourage sustainable development.

Centre for Post Graduate Legal Studies

A Centre for Post Graduate Legal Studies is set up as an interdisciplinary Centre of Excellence dedicated to legal research, teaching and outreach activities. The One Year LLM programme will be offered under the auspices of the Centre through the Department of Policy Studies.

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

*Centres are areas of expertise at TERI, which are recognized as Centres of Excellence by the TERI University.

ACADEMIC PROGRAMMES

At present, the following programmes are offered:

- MA (Public Policy and Sustainable Development)
- MA (Sustainable Development Practice)
- MBA (Business Sustainability)
- MBA (Infrastructure)
- MSc (Climate Science and Policy)
- MSc (Economics)
- MSc (Environmental Studies and Resource Management)
- MSc (Geoinformatics)
- MSc (Plant Biotechnology)
- MSc / MTech (Water Science and Governance)
- MTech (Renewable Energy Engineering and Management)
- MTech (Urban Development and Management)
- LLM Programmes (Environment and Natural Resources Law and Infrastructure and Business Law)
- Diploma in Water Science and Governance
- Advanced PG Diploma in Renewable Energy (in the distance education mode)
- Diploma in Renewable Energy (in the 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 the 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 a period of two years, 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. The University 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. The TERI University received the 'India Today Award' for the most innovative curriculum and grade 'A' accreditation by the National Assessment and Accreditation Council (NAAC).

Collaborations

Stressing the importance of international perspective in its programmes, the 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 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).

The 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), Simon Fraser University (Canada), Deakin University (Australia), University of Technology (Sydney), International University of Kyrgyzstan, and Bandung Institute of Technology (Indonesia).

Master's Programmes

MA (Public Policy and Sustainable Development)

Policy decisions by government officials at all levels are required to be increasingly multifaceted, keeping in mind 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;
- Refresh their knowledge of the substantive development issues at hand.

The MA (Public Policy and Sustainable Development)—MA(PP&SD)—programme, offered by the 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 master's course in Sustainable Development Practice (MASDP) 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. The MA (SDP) programme is part of the Global Association of MDP programmes, which consists of 26 MDP programmes offered in 19 universities across the world. The 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 master's 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, that is, 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.

The 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, the implications on various regions, resources, societies, and to study ways of mitigating its impacts. Role of policies and measures are also equally important. The 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 inventorization, projections, possible ways of mitigating emissions, assessment of possible impacts on humans, habitats, resources, and exploring adaptation options. The programme provides explicit inter-disciplinary 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, analyse, 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 the programme a 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 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 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 the 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 focusses 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 namely:

- Research and development
- Science education
- 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. This programme is inter-disciplinary and is designed to empower students with technical skills and generate capacities and career opportunities with an emphasis on sustainable development.

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 challenges of water sustainability. The format of the entire programme is flexible and caters to fresh graduates as well as working 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 courses are for four semester duration; PG Diploma is a course for two semesters, while 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 fulfil 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 renewable energy 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 through field 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 multifarious ramifications 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 like:

- 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 will commence 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 will address 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 will also address the issues of public-private participation in detail.

CONVOCATION 2015

Seventh Convocation

The TERI University organized its Seventh Convocation on February 4, 2015 at the University campus in Vasant Kunj. The ceremony was held with much pomp and show. The excitement amongst the graduands was palpable and this contributed to the otherwise serious event.

Shri M Venkaiah Naidu, Hon'ble Minister of Urban Development, was the Chief Guest. Honorary doctorates were conferred on **Mr V V S Laxman**, Former Cricketer; **Mr Paul Polman**, CEO, Unilever; **Mr Hiroaki Nakanishi**, Chairman and CEO, Hitachi; **Dr Jose Manuel Ramos-Horta**, Former President of East Timor. A total of eight doctoral degrees and 178 master's degrees were conferred on the graduands.

MEDALS FOR STANDING FIRST

Convocation 2015

Name of Student (CGPA)	Stream
Shreya Trivedi (8.35)	Environmental Studies and Resource Management
Florencia Matina Tuladhar (8.85)	Geoinformatics
Anshika Gupta (8.34)	Climate Science and Policy
Nipanshu Agarwal (8.53)	Plant Biotechnology
Vasundhara Gaur (8.69)	Economics
Sidhant Lalla (7.63)	MBA (Infrastructure)
Amrita Bhakta (8.96)	MBA (Business Sustainability)
Navin Bansal (8.94)	MTech (Renewable Energy Engineering and Management)
Ankit Tulsyan (9.22)	MA (Sustainable Development Practice)
Yelamanchi Monica Priya (9.31)	MTech (Urban Development and Management)
Shalini Bhutani (9.63)	MA (Public Policy and Sustainable Development)

Previous Years

Year	Name of Student	Stream
2005	Reema Bansal	Environmental Studies
	Romit Sen	Natural Resources
2006	Poorva Gupta	Environmental Studies
	Astha Batra	Natural Resources Management
2007	Prachi Prakash	Environmental Studies
	Yamini Panchaksharam	Natural Resources Management
2008	Aditi Mehandiratta	Environmental Studies
	Chandni Singh	Natural Resources Management
	Poonam Kunwar Banerjee	MBA (Infrastructure)
	Madhavi Das	MA (Public Policy and Sustainable Development)
2009	Pallavi Pant	Environmental Studies
	Prachi Khanna	Natural Resources Management
	Radhika Tomar	Water Resources Management
	A P Singh	MBA (Infrastructure)
	Chandni Raina	MA (Public Policy and Sustainable Development)
2010	Shreya Dasgupta	Environmental Studies
	Deepa Maggo	Natural Resources Management
	Rudresh Kumar Sugam	Water Resources Management

	Farzana Kolyariwala	Plant Biotechnology
	Neeraj Garg Baruah	Geoinformatics
	Sanjeev Kumar Singh	MBA (Infrastructure)
	Prashant Kumar Singh	MA (Public Policy and Sustainable Development)
2011	Marianne Manuel	Environmental Studies
	Pratha Sah	Natural Resources Management
	Divya Gupta	Water Resources Management
	Shailja Bahuguna	Geoinformatics
	Seema Dikshit Venkatesh	Climate Science and Policy
	Pratiksha Jain	Plant Biotechnology
	Parul Gupta	Economics
	Deepak Sharma	MBA (Infrastructure)
	Mathur Apurva Anil	MBA (Business Sustainability)
	Reva R	MTech (Renewable Energy Engineering and Management)
2012	Mahi Puri	Environmental Studies
	Upasana Jaipuria	Natural Resources Management
	Neha Gupta	Water Resources Management
	Bhartendu Pandey	Geoinformatics
	Divya Sharma	Climate Science and Policy
	Seema Chaudhary	Plant Biotechnology
	Ayush Pant	Economics
	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	Environmental Studies
	Dina Nethisa Rasquinha	Natural Resources Management
	Pallavee Khanna	Water Resources Management
	Rumia Basu	Geoinformatics
	Sudeshna Maya Sen	Climate Science and Policy
	Sneha Sinha	Plant Biotechnology
	Bhawna Mangla	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	Viveka Jani	Environmental Studies and Resource Management
	Deepika Mann	Geoinformatics
	Amani Gupta	Climate Science and Policy
	Natasha Navet	Plant Biotechnology
	Mahima Vasishth	Economics
	Vasundhara Tanwar	Economics
	Sanju Vargeese	MBA (Infrastructure)
	Kanchi Rellan	MBA (Business Sustainability)
	Nair Neeraj Padmakumar	MTech (Renewable Energy Engineering and Management)
	Udeep Regmi	MA (Sustainable Development Practice)
	Som Dutt Sharma	MA (Public Policy and Sustainable Development)

EMINENT GUEST LECTURES AT THE UNIVERSITY

Topic	Presenter	Date
Challenges in Sanitation Sector in India: The Way Forward	Mr A K Sengupta, Director General of International Academy of Environmental Sanitation and Public Health	March 23, 2015
Use of SCADA and ICT Tools in Water and Sanitation Sector in Urban Settings	Ms Jyoti Dhar, Consultant, Design of Automation and SCADA System	April 7, 2015
Swachh Bharat Mission and Entrepreneurship Opportunities for Youth	Mr Ashish Jain, Founder Director, Indian Pollution Control Association	April 21, 2015
Third Pole and its Water Resources	Prof. A L Ramanathan, Professor, School of Environmental Sciences, JNU	April 27, 2015
GIS Applications on Ground Water Exploration in Urban Settings	Prof. Saumitra Mukherjee, Professor, School of Environmental Sciences, JNU	August 12, 2015
Decentralised Waste Water Treatment and Swachh Bharat Mission	Col (Retd) Pankaj Naithani, Independent Consultant	September 11, 2015
Turbo-charging your Research and Publication Outputs	Prof. Julia Connell, Director, Researcher Development, University of Technology (UTS), Australia	October 30, 2015
Do Air Pollution Regulations Really Work: What Does Accountability Research Tell Us?	Dr Rashid Shaikh, Director of Science, Health Effects Institute, Boston, USA	November 2, 2015
Effects of Poor Sanitation on Health in Rural and Informal Settlements in Urban India	Ms Sangita Vyas, Managing Director, RICE Institute	November 18, 2015

INTERNATIONAL VISITING FACULTY AT TERI UNIVERSITY—2014–15

Prof. V Ramanathan

Distinguished Professor of Atmospheric and Climate Sciences, Center for Atmospheric Sciences, Scripps Institution of Oceanography, University of California, San Diego, United States of America

Ambassador Arne Walther

Associate Fellow, Fridtjof Nansen Institute, Norway

Prof. Om P Rajora

Professor, Canadian Genomics and Conservation Genetics Institute, University of New Brunswick, Canada

Dr Zinaida Fadeeva

Associate Fellow, UNU-IAS, Japan

Dr Kirsten Jorgenson

Professor, Environmental Policy Research Centre, Free University of Berlin, Germany

STUDENT EXCHANGE

University of Technology, Sydney		
1.	Ms Garima Vats, Doctoral Student (Energy and Environment)	August 2014
University of Reims Champagne- Ardenne, France		
1.	Ms Aparna Choudhary, MTech (Urban Development and Management)	August 2014
2.	Ms Lekha Thakkar, MTech (Urban Development and Management)	August 2014
3.	Mr Vaibhav Rao, MTech (Urban Development and Management)	October 2015
4.	Mr Abir Nilosey, MTech (Urban Development and Management)	October 2015
Simon Fraser University, Canada		
1.	Ms Prakriti Prajapati, MSc (Economics)	March 2015
Freie University of Berlin, Germany		
1.	Ms Nidhi Sharma, MSc (Environmental Studies and Resource Management)	April 2015
2.	Ms Deepti Roy, MSc (Climate Science and Policy)	April 2015
3.	Ms Swarnalakshmi Umamaheshwaran, Doctoral Student (Policy Studies)	April 2015

ONGOING RESEARCH PROJECTS

Project Title	Water-Energy-Carbon Nexus	Training programme on 'Impact of Ozone and other Pollutants on Crops' scheduled to be held between 4th and 6th January 2016	To institute the Coca-Cola Department of Water Resource Management (DWRM)	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
Sponsor	Asian Institute of Technology, Asia Pacific Network for Global Change Research	Central Pollution Control Board	Coca-Cola Company	Department of Biotechnology
Objective	Understanding and Quantifying the Water-Energy-Carbon Nexus for Low Carbon Development in Asian Cities	1. To impart basic understanding of tropospheric ozone (T ozone) formation and other pollutants, it's sources and impacts 2. Exposure of latest concepts, information and techniques used in tropospheric ozone and other pollutant monitoring	The proposed department would develop an international cadre of development professionals (fresh graduates and mid-career), who would be well equipped to tackle the contemporary water sector problems that transcend cultural boundaries and necessitate sectoral collaboration and creation of a gender sensitive narrative for water management to tackle the challenges of water sustainability—an issue of great salience in South Asia and Africa. The guiding principle behind this proposal is that "knowledge is the capacity to act" and to fulfil this aim the department will have a two pronged focus: i) region specific—South Asia and Africa; ii) Role of women to better manage water, as it is well known that women can contribute to last mile organization and better management of water. Specially, the department will: i) Promote/disseminate knowledge on sustainable water management to governments, users, industry, development practitioners, local NGOs and women working at the lowest tier of governance in Asia and Africa.	1. Screening of TI segregants harbouring 35SCaMV Brassica FT on Kanamycin containing media and transferring an appropriate number if TI lines at National Phytotron Facility, IARI, Pusa. 2. Testing the segregation pattern of individual T2 seed on Kanamycin selection plate to ascertain the genotype of T1 line. 3. Comprehensive morphological characterization of Brassica transgenic lines vis-à-vis with type 4. Designing artificial miRNA targeting Brassica FT transcripts. The transcripts of Brassica FT will be used for predicting the most efficient artificial miRNA and generating the silencing construct. 5. Mobilizing a MIR Brassica FT in binary vectors under the control of constitutive promoters. 6. Assaying the functionality of designed aMIRs on FT transcript

		3. To broaden the knowledge base of the officials related to impacts of T ozone and other pollutants on crops by providing them real-time exposure to agriculture field and crop lands	ii) Build capacities and create a cadre of water stewards who understand the interdisciplinary nature of water in context of its planning and governance. To achieve the same, the department will conduct short-term courses/ management development programmes on water sector for state/regional governments, business organizations and local communities. The department will also run an interdisciplinary multi-track masters programme on water science and governance and a PhD programme. iii) The department aims to become a knowledge hub for knowledge collection and dissemination on solutions to tackle interdisciplinary nature of water challenges that are faced today through open access online portals.	7. Generation of misexpression phenotypes in *A. thaliana* for assaying in-vivo functionality of aMIR targeting Brassica FT 8. Advancement of Arabidopsis transgenic lines 35S aMIR Brassica FT1 till T3 generation 9. Generation of F1 progeny to bring 35S a MIR Brassica FT and 35S Brassica FT in a common genetic background 10. Detection of target cleavage using F1 progeny as an in-vivo system 11. Generation of transgenic lines in Brassica genetic backgrounds
Project Abbr. Title	Water-Energy-Carbon Nexus	Impact of Ozone on Crops—CPCB Training Programme	Coca-Cola Department of Water Resource Management	FT expressions for delayed flowering
PI Name	Dr Arun Kansal	Dr Kamna Sachdeva	Dr Arun Kansal	Dr Anandita Singh
Sanction Date	14/10/2013	15/08/2015	01/04/2014	30/09/2011
Project Start	01/09/2013	04/01/2016	01/05/2014	30/09/2011
Project End	31/03/2016	06/01/2016	30/04/2024	30/09/2015
Area Description	Department of Energy and Environment	Department of Natural Resources	Department of Natural Resources	Department of Biotechnology
Status	Ongoing	Ongoing	Ongoing	Ongoing
Project Cat. Desc.	Research	Training Programme	Academic Programme	Research

Project Title	**Sustainable Livelihood Activities on Reclaimed Open Cast Coal Mines: A Technology Enabled Integrated Approach in Indian Coal Sector**	**Development of a knowledge based decision tool to simulate mechanism of vegetation change due to climate change in Western Himalayan Eco-region (part of Uttarakhand)**	**Integrated approach towards sustainable development—30th March to 17th April 2015**	**ITEC training programme on "Climate change and sustainability from 5 October to 23 October 2015.**
Sponsor	Ministry of Coal	Ministry of Environment, Forest and Climate Change	Ministry of External Affairs	Ministry of External Affairs
Objective	The concept of creating sustainable post mine land use has gained prominence after Ministry of Coal issued mine closure guidelines in the year 2009 with greater stress to plan land use pattern in the post mining period in a manner that does not become liability for the community and becomes a source of livelihood for the community in and around the mining area. At present there are no clear answers to questions about the long-term land use in the mined out area and the livelihoods that need to be created the kind of forest that is to be planted and the arrangement for sharing of benefits; and how to productively use the water bodies that form in the voids. Under this backdrop, the project aims at: i) to assess through the application of a systematic multi-criteria evaluation framework, the suitability potential of post-mining land use for ecologically beneficial and socio-economically productive outcomes, ii) to develop permanent green cover on overburden dumps/backfilled mined land area using mycorrhiza and various plant species of economic importance, iii) to develop entrepreneurship and vocational skills among members of local Self Help Groups (SHGs) for community (with a focus on women and other weaker sections of the society) empowerment	Development of a knowledge based decision tool to simulate mechanism of vegetation change due to climate change in Western Himalayan Eco-region	ITEC training programme	ITEC training programme on "Climate change and sustainability from 5 October to 23 October 2015.

	through access to new economic opportunities. In addition to the above, the proposal also aims to build capacity among University students for conducting research in the coal sector through their involvement in the project activities for bringing in social and environmental upgradation in the mining areas. It is proposed to undertake the proposed R&D activities in one of the reclaimed OCM areas of Mahanadi Coalfields Limited (MCL) in the State of Odisha, preferably in Talcher Coalfields.			
Project Abbr. Title	Sustainable livelihood activities—Mining	Development of a knowledge based decision tool to simulate mechanism of vegetation change due to climate change	ITEC training programme	ITEC - Climate Change and Sustainability
PI Name	Dr Sudipta Chatterjee	Dr Vinay Shankar P Sinha	Dr Chubamenla Jamir	Dr Kamna Sachdeva
Sanction Date	09/03/2015	17/04/2012	16/02/2015	28/08/2015
Project Start	09/03/2015	01/05/2012	05/03/2015	28/08/2015
Project End	31/03/2018	30/04/2015	30/04/2015	30/11/2015
Area Description	Department of Policy Studies	Department of Natural Resources	Department of Natural Resources	Department of Natural Resources
Status	Ongoing			
Project Cat. Desc.	Research	Research	Workshop, conference, seminar, event	Workshop, conference, seminar, event

Project Title	**Establishing Centres of Excellence for Training and Research in Frontier Areas of Science and Technology (FAST)**	**Study on quantification of the Greenhouse Gas mitigation potential of the various development initiatives undertaken by Government of India**	**Certificate course on "Nuclear Energy and Law" to be organized from 11th to 16th January 2016.**	**Training on 'Research Supervision Skills' for Royal University of Bhutan delegates from 24th to 28th August 2015.**
Sponsor	Ministry of Human Resource Development	Ministry of Urban Development	Nuclear Law Association, India	Royal University of Bhutan
Objective	In response to Ministry of Human Resource Development's invitation for submitting proposals for establishing Centres of Excellence for Training and Research in Frontier Areas of Science and Technology (FAST), TERI University proposes to establish a Centre of Excellence for Energy Storage in the Department of Energy and Environment, Faculty of Applied Sciences. The objective of the proposed centre is to focus on state-of-the-art advanced research and training in Renewable Energy Storage. With increasing use of renewable energy for power, heat and cooling applications to meet variety of energy needs, energy storage technologies are gaining importance in recent times. Most renewable energy resources are variable and, at times unpredictable, in nature and need some form of storage to meet the demand supply gap or to optimise the energy supply. Various energy storage technologies and materials are being studied and developed across the globe.	The objective of the proposed study is to quantify the GHG mitigation potential of various development initiatives undertaken by Ministry of Urban Development, Government of India under Jawaharlal Nehru National Urban Renewal Mission (JnNURM), Swachh Bharat Mission, Atal Mission for Rejuvenation and Urban Transformation (AMRUT), and Smart Cities	1. The basic understanding of nuclear science and technology; 2. The legal history and international engagement, with a focus on Global South; 3. The functioning of a nuclear power plant; 4. The IAEA - its history, codes and guidelines, and international nuclear treaties; 5. Regulatory structures and liability regimes of select jurisdictions; and 6. India's nuclear laws and regulatory processes, siting and consent procedures, environmental law and judicial decisions in India	Training on 'Research Supervision Skills' for Royal University of Bhutan delegates from 24th to 28th August 2015.

	The Government of India has announced its ambitious 'Solar Mission' as part of the NAPCC (National Action Plan on Climate Change) which envisages 22GW of grid connected solar power plants by 2022 and large scale use of solar energy for off grid and thermal applications including target of installing 20million sq. m area of solar thermal collectors by 2022. India is the only country in G20 in Sun Belt and solar energy is one of the best renewable energy options for India. Thermal energy storage technologies, therefore, would be the need of the hour for India to meet its targets of National Solar Mission.			
Project Abbr. Title	Establishing Centres of Excellence - FAST	MoUD - Quantification of the Greenhouse Gas mitigation	Certificate course on 'Nuclear Energy and Law'	Training on 'Research Supervision Skills' for RUB
PI Name	Dr Basudev Prasad	Dr Suresh Jain	Dr M P Ram Mohan	Dr Shaleen Singhal
Sanction Date	30/09/2014	21/09/2015	02/09/2015	31/07/2015
Project Start	01/10/2014	21/09/2015	02/09/2015	01/08/2015
Project End	30/09/2018	31/12/2015	29/02/2016	30/09/2015
Area Description	Department of Energy and Environment	Department of Natural Resources	Department of Policy Studies	Department of Policy Studies
Status	Ongoing	Ongoing	Ongoing	
Project Cat. Desc.	Capacity building, outreach, creating awareness, training	Research	Academic Programme	Capacity building, outreach, creating awareness, training

Project Title	**Economic Value of Biodiversity Conservation provided by Forest and Agro-forest Ecosystems in Kodagu District**	**The distributional implications of Solar Water Pumping Programme for Ground Water Irrigation in Rajasthan**	**Reconstruction of genome-scale metabolic Networks of *Pichia pastoris* CBS 7435 strain using Systems biology**	**Agreement with Simon Fraser University**
Sponsor	SANDEE	SANDEE	Science and Engineering Research Board	Simon Fraser University
Objective	The purpose of this study is to make recommendations to institutionalize a Payment of Ecosystem Service (PES) model. Visitors (direct users) of Nagarhole National Forest, who derive satisfaction from non-consumptive use value of scenic beauty and non-use value of biodiversity (CAFNET 2012), compensate coffee-growers and forest dwellers (Under the recognition of Forest Right Act 2006) for biodiversity conservation. Visitors would pay to maintain coffee plantation under high density tree cover by conserving native tree species. Payment for these ecosystem services will be derived from non-market valuation techniques. Contingent behaviour data will be used to elicit visitor's willingness to pay in the face of a policy (hypothetical) that would impose higher entrance fees.	In this study, we propose to estimate the impact of solar water pump investments on the producer surplus, crop productivity, labour usage, water consumption and household consumption by undertaking a primary survey in villages selected from three states—Karnataka, Punjab and Bihar. The analysis in this study will quantify the impacts on household production and consumption by comparing outcomes of the treatment and comparison groups using programme impact evaluation methods such as difference-in-differences approach. The learnings and findings from this research will inform future efforts in designing and implementing policies of government and non-government agencies, which are involved in the promotion and advancement of solar pumps.	1. The genome wide study of *Pichia pastoris* CBS7435. 2. To reconstruct the metabolic network of the pathways of primary metabolism (carbohydrate metabolism, amino acid metabolism, lipid metabolism, energy metabolism, nucleotide metabolism), glycan biosynthesis and metabolism, metabolism of vitamins and co-factors, transcription, translation, replication and repair, membrane transport, signal transduction, cell cycle, etc. 3. Flux balance analysis and modelling. 4. Clustering. 5. Fermentation studies of *P. pastoris* growing in suitable medium. 6. Product oriented analysis of *P. pastoris* cells using different carbohydrates as sole carbon source.	Academic collaboration including short visit of a Master Student from TERI University

	This willingness to pay will be compared to the opportunity cost, i.e., benefits forgone due to timber sale. Potential of augmenting increased public expenditure on biodiversity conservation with tourist expenditures will be explored.		7. For comprehensive investigation of amino acid biosynthesis and comparison with flux ratios obtained for growth on glycerol/ carbohydrate	
Project Abbr. Title	Ecosystem Services in Kodagu District	SANDEE - Solar Water Pumping Programme	Reconstruction of genome-scale metabolic	Agreement with Simon Fraser University
PI Name	Dr Kavita Sardana	Ms Eshita Gupta	Dr Pallavi Somvanshi	Dr Nandan Nawn
Sanction Date	28/11/2014	17/08/2015	29/05/2014	30/10/2013
Project Start	28/11/2014	17/08/2015	29/05/2014	01/01/2015
Project End	28/11/2016	31/12/2016	29/05/2017	31/05/2015
Area Description	Department of Policy Studies	Department of Policy Studies	Department of Biotechnology	Department of Policy Studies
Status	Ongoing	Ongoing	Ongoing	
Project Cat. Desc.	Research	Research	Research	Academic Programme

Project Title	**Embedding SCP into TERI University Postgraduate Programmes**	**Strengthening Water and Sanitation in Urban Settings—Summer School on WASH (activity 3.3)**	**Targeting low-arsenic and low-fluoride groundwater to reduce exposure in rural Punjab, India**	**Innovation for sustainability among micro and small enterprises: Case study in India**
Sponsor	United Nations Environment Programme	United States Agency for International Development	United States Agency for International Development	University of Guelph, Canada
Objective	Embedding SCP into TERI University Postgraduate Programmes	1. Conduct a comprehensive WASH related risk analysis and human health impacts in a cluster of slums in Kolkata and in Chennai. Analysis to include: 2. A comprehensive cross-sectional WASH related health risk analysis including the living, social, gender-related variables and occupational conditions. 3. A baseline evaluation of the WASH profile which is part of communities' life surrounding a slum of the urban areas. These analyses will serve as the basis for developing and designing appropriate models for capacity building, development of effective outreach, communications and participation strategies, with special focus on women and children. 4. Develop and implement participatory intervention strategies in the selected urban areas that engage all potential stakeholders and incorporate a variety of disciplines. These strategies will be designed to facilitate adoption of measures to reduce WASH related risks, trigger behavioural changes, and support long-term participatory interaction among stakeholders. 5. Build and catalyse requisite capacities in faculty, students, and decision makers to help address the challenges related to sanitation and health and their engagement in action research with the intent of finding replicable solutions to the sanitation problem.	Targeting low-arsenic and low-fluoride groundwater to reduce exposure in rural Punjab, India	Innovation for sustainability among micro and small enterprises: Case study in India

		6. Develop a model curriculum of sanitation related subjects and integrate it into the curricula of relevant programmes of TERI University and its dissemination for adoption by other universities for both immediate and long-term impact on the sector. 7. Engage nation-wide student community to facilitate action and research to provide innovative sanitation solutions and reduction of related health risks. 8. Sensitize mid-career professionals engaged with this sector to more systemic approaches to dealing with the challenges of delivering effective sanitation services. 9. Inform policy influencing community on the potential solutions and alternative business models for providing sanitation services.		
Project Abbr. Title	Embedding SCP into TERI University Postgraduate Programmes	Strengthening Water and Sanitation in Urban Settings	Low-arsenic and low-fluoride groundwater	Innovation for sustainability among micro and small enterprises: Case study in India
PI Name	Dr Shaleen Singhal	Dr Shaleen Singhal	Mr Chander Kumar Singh	Mr Sachin Kumar
Sanction Date	03/08/2015	30/09/2014	26/08/2013	01/07/2014
Project Start	03/08/2015	03/11/2014	27/08/2013	16/07/2014
Project End	31/07/2016	30/09/2017	31/05/2016	31/07/2015
Area Description	Department of Policy Studies	Department of Policy Studies	Department of Natural Resources	Department of Natural Resources
Status	Ongoing	Ongoing	Ongoing	
Project Cat. Desc.	Academic Programme	Research	Research	Research

Project Title	HUDCO Chair	Indian-European Multilevel Climate Governance Research Networking (MCGRN)	Hi-AWARE project for TU
Sponsor	Housing and Urban Development Corporation Limited	Indian Council of Social Science Research	International Development Research Centre
Objective	HUDCO Chair	Indian-European Multilevel Climate Governance Research Networking (MCGRN)	Hi-AWARE project for TERI University
Project Abbr. Title	HUDCO Chair	Indian-European Research Networking	Hi-AWARE project for TU
PI Name	Dr Shaleen Singhal	Dr Shaleen Singhal	Dr Kamna Sachdeva
Sanction Date	30/03/2012	24/01/2013	26/03/2015
Project Start	01/09/2012	01/10/2013	26/03/2015
Project End	30/09/2015	30/09/2016	29/12/2018
Area Description	Department of Policy Studies	Department of Policy Studies	Department of Policy Studies
Status	Ongoing	Ongoing	Ongoing
Project Cat. Desc.	Academic Programme	Research	Research

RECRUITERS AT TERI UNIVERSITY

Alternative Energy Promotion Centre (AEPC)	Archaeological Survey of India (ASI)
Ashden India Renewable Energy Collective	ATREE
Atria Power Corporation Ltd (APCL)	
Bharti Infratel Limited	
Center for Study of Science, Technology and Policy (CSTEP)	Central Himalayan Rural Action Group (Chirag)
Central Pollution Control Board (CPCB)	Central Water Commission (CWC)
Centre for Ecology Development and Research (CEDAR)	Centre for Economic and Social Studies (CESS)
Centre for Health and Social Justice (CHSJ)	Christian Medical College, Vellore
CII-ITC Center of excellence for sustainable development	Coca-Cola India Pvt. Ltd
Council on Energy, Environment and Water (CEEW)	Cru Group, Mumbai
Defence Terrain Research Laboratory (DTRL), DRDO	Delhivery
Development Alternatives	
E&Y (Ernst&Young)	Earthood Services Private Limited
Ecorys India Pvt. Ltd	Egis India Consulting Engineers Pvt. Ltd
Emergent ventures India	Emmvee Photovoltaic Power Private Limited
Energy Unlimited Foundation	Enzen Global Solutions Private Limited
ETI Dynamics	
Faber Capital	Finish Your Problems Pvt. Ltd
Forum of Financial Initiatives (FFI)	Foundation for MSME Clusters (FMC)
Gawharshad Institute of Higher Education (GIHE)	GE India
Geocycle India	GIZ
Global Reporting Initiative, India (GRI)	Globe Capital Market Ltd
Greenbrick Eco-Solutions	Green Planet Waste Management Pvt. Ltd
Groupon	GSES India Sustainable Energy Solutions Pvt. Ltd

HCL Foundation	Hindustan Coca-Cola Beverages Private Limited
Housing and Urban Development Corporation Limited (HUDCO)	
ICRIER	Indian Institute of Management Bangalore (IIMB)
Indian Institute of Management Bombay (IITB)	IMRB International
IMS Health	Indian Council for Forestry Research and Education (ICFRE)
CSIR-Indian Institute of Chemical Technology	Idam Infrastructure Advisory Private Limited
Indian Institute of Technology Delhi	Indian Institute of Tropical Meteorology
Innodata India Pvt. Ltd	International Centre for Integrated Mountain Development (ICIMOD)
IORA Ecological Solutions Pvt. Ltd	IPE Global
IT Power Consulting Pvt. Ltd	
Jal Bhagirathi Foundation	Jindal Ecopolis
Kalpavriksh	KPMG
Lutheran World Federation Nepal (LWF)	
Ministry of Communication and Information Technology	Ministry of Women Affairs MOWA Ministry of Communication and Information Technology
MS Swaminathan Research Foundation	MSME Foundation
N K Buildcon Pvt. Ltd (NKBPL)	National Association of Street Vendors of India (NASVI)
National Bureau of Plant Genetic Resources (NBPGR)	CSIR-National Geophysical Research Institute
National Institute for Plant Genome Research (NIPGR)	National Institute of Immunology
National Institute of Plant Genome Research	National Institute of Urban Affairs
NextGen PMS	National Research Centre on Plant Biotechnology (NRCPB)
Plustrust Organization	Population Research Centre, Institute of Economic Growth
Public Nutrition Department, Ministry of Public Health, Government of India	
REConnect Energy Pvt. Ltd	RIS-Research and Information System for Developing Countries

SaciWATERs	Samaj Pragati Sahayog
Sanayee Development Organization (SDO)	Schneider Electric (SE)
Selco Foundation	Senes Consultants India Pvt. Ltd
SG Analytics	SGS India Private Limited
Shakti Pumps India Ltd	Shakti Sustainable Energy Foundation
Shiv Nadar Foundation	Sindicatum Sustainable Resources
Smart Roof Solar Solutions Private Limited	SaciWATERs, South Asia Consortium for Interdisciplinary Water Resources Studies
Statkraft Markets Pvt. Ltd	STIR Education Initiative
Studio Eleven	SunAlpha Energy Private Limited
TATA Chemicals Ltd	Tata Institute of Social Sciences
Tata Power Solar	TERI University
The Climate Group	The Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
The Energy and Resources Institute	
VA Tech Wabag Ltd	Vattakanal Conservation Trust
ViVA	
Wildlife Institute of India (WII)	Women Organizing for Change in Agriculture and Natural Resource Management (WOCAN)
WOne Management Systems	WWF-India

LIST OF PUBLICATIONS

DEPARTMENT OF REGIONAL WATER STUDIES

Dr Arun Kansal

- Sharma D**, Kansal A**, and Pelletier G (2015). Water quality modeling for urban reach of Yamuna River, India (1999-2009), using QUAL2Kw. *Applied Water Science*. Springer. DOI 10.1007/s13201-015-0311-1.
- Jasrotia S, **Kansal A**, and Mehra A (2015). Performance of aquatic plant species for phytoremediation of arsenic-contaminated water. *Applied Water Science*. Springer. DOI 10.1007/s13201-015-0300-4.
- Kennedy C A, *et al*. (2015). Energy and material flows of megacities. In *Proceedings of the National Academy of Sciences*. 112(19): 5985–5990 (Impact factor: 9.7).
- Jasrotia S, **Kansal A**, and Kishore V V N (2014). Arsenic phyco-remediation by Cladophora algae and measurement of organic speciation and location of active absorption site using electron microscopy. *Microchemical Journal* 114: 197–202. Elsevier. DOI 10.1016/j.microc.2014.01.005 (Impact factor: 3.58).
- Ghosh R and **Kansal A** (2014). Urban challenges in India and the mission for a sustainable habitat. *INTERdisciplina* 2(2): 281–304. DOSSIER

DEPARTMENT OF NATURAL RESOURCES

Nithiyanandam Yogeswaran

- Lindberg F, Grimmond C S B, **Yogeswaran N**, Kotthaus S, and Allen L (2013). Impact of city changes and weather on anthropogenic heat flux in Europe 1995–2015.*Urban Climate* 4: 1–15, ISSN 2212-0955, http://dx.doi.org/10.1016/j.uclim.2013.03.002.
- **Yogeswaran N** and Nichol J E (2013). Estimation of net radiation over complex urban environment: A case study of Hong Kong. In *34th Asian Conference on Remote Sensing 2013, ACRS*; 1641–1648.
- **Yogeswaran N** and Narasimhan N. Sustainable micro- level planning measures for effective management of wastewater in urban areas using Geo-informatics as a tool: A case study of Tiruchirapalli city.
- Urban sustainability and issues, Hansen Editorial Services & North Stafford, 272–282, ISBN: 0956395191, 2011

DEPARTMENT OF POLICY STUDIES

Dr M P Ram Mohan

- **Ram Mohan M P** (2015). *Nuclear Energy and Liability in South Asia: Institutions, Legal Frameworks and Risk Assessment within SAARC*. Springer: India, pp 1–42.
- Goswami A and **Ram Mohan M P** (2015). An exploratory analysis of occupational accidents and risks from nuclear reactors in India. *Safety Science* 78: 155–162.
- **Ram Mohan M P** and Rajesh Babu R (2015). Special issue: Nuclear energy and Indian society: Public engagement, risk assessment and legal frameworks. *Journal of Risk Research* 18(8) : 1009–1011.

DEPARTMENT OF BUSINESS SUSTAINABILITY

Dr Ritika Mahajan

- Nangia V K, Sharma V, Agrawal R, and **Mahajan R** (2014). *Masters Speak Management Education in India*. Bloomsbury Publishers: New Delhi.
- **Mahajan R** (2015). The Management education story: Historical foundations and schools of thought. *Globalising Indian thought Proceedings of the Second PAN IIM World Management Conference*, pp. 13–18, ISBN 9780992680046.
- **Mahajan R** (2015). Corporate social responsibility conundrum in India: Revisiting Carroll's pyramid and the road ahead. *Pacific Business Review International* 7(9): 91–96.
- **Mahajan R** (2015). India's management education growth story: A retrospect. *AIMA Journal of Management and Research* 9(2). (online journal)
- **Mahajan R**, Agrawal R, Sharma V, and Nangia V K (2015). Identification and modelling of winners and qualifiers for management institutes: Evidence from India. *International Journal of Management in Education* 9(1): 70–79.
- **Mahajan R**, Nangia V K, and Sharma V (2014). Management education: Is it only for business?" *Asian Management Review* 9(3): 52–57.

Dr Rajiv Seth

- F Swarnalakshmi U and **Seth R** (2015). Financing large scale wind and solar projects: A review of emerging experiences in the Indian context. *Renewable and Sustainable Energy Reviews*. Elsevier 48: 166–177.

DEPARTMENT OF NATURAL RESOURCES

Dr Kamna Sachdeva

- **Sachdeva K** and Attri A K (2008). Morphological characterization of carbonaceous aggregates in soot and freefall aerosol samples: A case study from Delhi, India. *Atmospheric Environment* 42: 1025–1034.
- Upadhyay V K and **Sachdeva K** (2010). Climate change and food security: Priority concerns in Indian agricultural sector. *International Journal of Environmental Sciences* 4: 553–557, IISN: 0973-6077.
- Agrawal A, Upadhyay V K, and **Sachdeva K** (2011). Study of aerosol behavior on the basis of morphological characteristics during festival events in India. *Atmospheric Environment* 45: 3640–3644.
- Upadhyay V K and **Sachdeva K** (2012). Climate change: Our rush to extinction or victim of our own success?. *Environment Management and Sustainable Development* 1: 44–51, ISSN: 2164-7682.
- Narayanan P, Basistha A and **Sachdeva K** (2013). Trend analysis and ARIMA modeling of pre-monsoon rainfall data for Western India. *Comptes Rendus Geosciences* 345: 22–27.
- **Sachdeva K,** Narayanan P, and Arora P **(**2013). Assessment of carbon fractions of aerosols collected under gravity settling at two different heights in the Delhi region. *Urban Climate* 5: 104–111.
- Arora P, Jain S, and **Sachdeva K** (2013). Physical characterization of particulate matter emitted from wood combustion in improved and traditional cookstoves. *Energy for Sustainable Development* 17(5): 497–503.
- Arora P, **Sachdeva K**, and Jain S (2014). Laboratory based assessment of cookstove performance using energy and emission parameters for north Indian cooking cycle. *Biomass and Bioenergy Development* 69: 201–221
- Joshi P K, **Sachdeva K**, and Joshi A K (2014). Adaptation frameworks for climate change: Eloquent to Himalayan ecosystems. In: *Impact of global changes on mountains: Responses and adaptation* (pp. 153–166). Grover V I, Borsdorf A, Breuste J, Tiwari P C, Frangetto F W, editors. CRC press, Taylor & Fransis Group: USA.

- Tigala S, **Sachdeva K**, Rani Sharma A, and Agrawal A (2015). Air pollution and health: A review of measurement techniques. *Journal of Advanced Research in Medicine: Special Issue: Second International Conference on Occupational & Environmental Health* (In press).

DEPARTMENT OF POLICY STUDIES

Dr Nandan Nawn

- **Nawan N** (2015). Energetics of irrigation under surplus rainfall conditions. In *Nature, economy, and society: Understanding the linkages* (pp. 133–161). Shah A, Panda M, Ghosh N, and Mukhopadhyay P, editors. Delhi: Indian Society for Ecological Economics and Springer.

DEPARTMENT OF BIOTECHNOLOGY

Dr Pallavi Somvanshi

- Singh V, Praveen V, Tripathi D, Haque S, **Somvanshi P**, Tripathi C K M, Katti S B (2015). Isolation, characterization and antifungal docking studies of wortmannin isolated from *Penicillium radicum*. *Scientific Reports* (IF: **5.078**) Vol 5, 11948.
- Khan S, Ahmad K, Alshammari E M A., Adnan M, Baig M H, Lohani M, **Somvanshi P**, Haque S (2015). Implication of caspase-3 as a common therapeutic target for multi-neurodegenerative disorders and its inhibition using non-peptidyl natural compounds. *Biomed Research International* 2015, Article ID 379817:17–26 (IF: **2.706**).
- Bhardwaj T and **Somvanshi P** (2015). *Plant Systems Biology: Insights and Advancements, Plant Omics: The Omics of Plant Science*. pp 791–819.
- Osama K, Mishra BN and **Somvanshi P** (2015). *Machine Learning Techniques in Plant Biology. Plant Omics: The Omics of Plant Science*. pp 731–754.

DEPARTMENT OF POLICY STUDIES

Dr Seema Sangita

- **Sangita S** (2015). India's bilateral trade in services: Patterns, determinants and the role of trade in goods. In: *NCAER, Malcolm Adisheshaiah Mid-Year Review of the Indian Economy 2014–2015*. NCAER Report No. 2015-4-1, New Delhi. http://www.ncaer.org/publication_details.php?pID=249

PATENTS FILED

INVENTOR

Dr Ramakrishnan Sitaraman

A system for screening of microbes for reducing ability and method of working for same.

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 of the student	Supervisor's name	Title of PhD thesis
1	Dhruva Bhattacharya	Dr Banwari Lal	Genetic diversity among petroleum hydrocarbon degrading bacteria isolated from crude oil and oily sludge contaminated sites
2	Neeti Chauhan	Dr Malathi Lakshmikumaran	Genome analysis of Populus species: Assessment of genetic diversity of *P. deltoides,* characterization of wide hybrids and phylogenetic analysis using molecular markers
3	Kadambari Gupta	Dr Abha Agnihotri	Evaluation of *Brassica juncea* (L.) Czern x *B. rapa*/*B. carinata* hybrids and their advanced progenies against two major fungal diseases: Molecular, morphological and biochemical characterization
4	Vanit Kathuria	Dr Nutan Kaushik	Evaluation of biological activity of various plants species against *Helicoverpa armigera* (Hübner)
5	Prasun Ray	Dr Alok Adholeya	Selection and characterization of suitable ectomycorrhizal isolates for application in heavy metal polluted sites
6	Vaishali Sabharwal	Dr Malathi Lakshmikumaran	Studies on the genome organization of *Brassica juncea* [(L.) Czern & Coss]
7	Priyangshu M Sarma	Dr Banwari Lal	Assessment and documentation of bacterial diversity at the sites contaminated with petroleum hydrocarbons: A polyphasic approach
8	Deepak Prem	Dr Abha Agnihotri	Induction of genetic variability for agro-morphological and biochemical traits in Indian mustard [*Brassica juncea* (L.) Czern and Coss] through chemical mutagenesis in conjugation with doubled haploid technology
9	Pooja Joshi	Dr Vibha Dhawan	Biotechnological interventions for multiplication and conservation of *Swertia chirayita* (Roxb. Ex Fleming) H. Karst
10	Venkatesh Dutta	Dr Leena Srivastava	Preference heterogeneity, public choice and willingness to pay: Study of water supply reform in a mega city
11	Nirmal Kr Saha	Dr Malini Balakrishnan	Characterization and control of membrane fouling in sugarcane juice ultrafiltration
12	Deepak Pant	Dr Alok Adholeya	Microbial decolorization of distillery effluent for its application in wasteland reclamation

13	Sonali Patle	Dr Banwari Lal	Investigation of potential of agro-industrial residues for ethanol production by using *Candida tropicalis* and *Zymomonas mobilis*
14	Nishritha Bopana	Dr Sanjay Saxena	Micropropagation for conservation of two economically important medicinal plant species: *Asparagus racemosus* Willd. and *Crataeva magna* (Lour.) DC.
15	S Krishnan	Dr Banwari Lal	Studies on C-S bond targeted biodesulphurization of middle-distillate range fuels by Mycobacterium phlei SM120-1
16	Yamini Satyawali	Dr Malini Balakrishnan	Integrated physico-chemical and biological process for treatment of alcohol distillery wastewater
17	Anand Prakash Tiwari	Dr Leena Srivastava	Choice and preference of water supply institutions: Analysing expert, stakeholder and consumer preferences for reforms in developing city of Delhi
18	Srivalli Krishnan	Dr Sanjay Saxena	Genetic transformation of *Carica papaya* L. Indian cultivar CO7
19	Nitu Sood	Dr Banwari Lal	Microbial interventions for the mitigation of paraffin deposition problems and remediation of acidic oily sludge
20	Akhil Agrawal	Dr Banwari Lal	Diversity and abundance of sulphate-reducing bacteria in oil fields of India
21	Ritu Paliwal	Dr Leena Srivastava	Policy intervention analysis: Adequacy of post project monitoring process in India and barriers to its effective implementation
22	Sangeeta Sen	Dr Vibha Dhawan	Production of disease free, superior planting material of Citrus through biotechnological approaches
23	Guneet Kaur	Dr Banwari Lal	Assessment of thermophilic sulphate reducing bacterial diversity in Indian oil reservoirs and their control
24	Shilpanjali Deshpande	Dr Banwari Lal	Studies on the degradation of the insecticide endosulfan by indigenous bacterial strains
25	Snigdha Sushil	Dr Vidya S Batra	Activity of red mud based materials in decomposition and oxidation reactions
26	K Usha Rao	Dr V V N Kishore	Diffusion modelling of selected renewable energy technologies, products and applications in India
27	S K Joshi	Dr Surender Kumar	Intergovernmental fiscal transfers and the environment: A study of India
28	Hema Patel	Dr Suneel Pandey	Management of chemical sludge generated from textile waste water treatment plants
29	Nemika Relhan	Dr T S Panwar	Health impacts of air pollutants from coal
30	Harshita Pathak	Dr Vibha Dhawan	Biotechnological interventions for the production of superior, disease free planting material of apple (Malus X domestica Borkh.) rootstocks

31	Simrita Cheema	Dr Banwari Lal	Metagenomic approach to study the polyhydroxyalkanoate gene from hydrocarbon contaminated site
32	Jyotsana Dalal	Dr Banwari Lal	Enhanced synthesis of polyhydroxyalkanoates (PHA) from bacterial strains for production of biodegradable plastics
33	Ashu Mamgain	Dr Pradhan Parth Sarthi	Study of snow-monsoon relationship and changes in rainfall and temperature characteristics in India
34	Seema Sharma	Dr Alok Adholeya	Selection of hyper accumulator microorganisms and plants for bioextration of chromium from tannery sludge and effluent
35	Prakashkiran Suryakant Pawar	Dr Alok Adholeya	Comprehensive analysis of evapotranspiration estimation methods and modelling actual evapotranspiration of maize (Zea mays, L) crop under water deficient conditions for drought proofing and water savings in agriculture
36	Susmita Sahu	Dr Ligia Noronha	Mangrove-fishery ecosystem in Bhitarkanika: A bio-socio-economic analysis
37	Nishant	Prof. P K Joshi	Assessment of real estate attributes for catastrophe insurance (property estimate) using geospatial techniques
38	Jami Hossain	Prof. VVN Kishore	A GIS-based approach to reassessment of potential for wind energy utilization in India
39	Susheel Kumar	Dr Nutan Kaushik	Bioprospecting of Endophytic fungi for fungicidal activity
40	Anshul Puri	Dr Alok Adholeya	Development of next generation symbiosis with ecto and endo – mycorrhizal fungi on Ri T-DNA transformed hairy roots
41	Chandrashekhar Deshmukh	Dr Arun Kansal	Greenhouse gas emissions (CH_4, CO_2 and N_2O) from a newly flooded hydroelectric reservoir in subtropical South Asia: The case of Nam Theun 2 reservoir, Lao PDR
42	Deepshikha Sharma	Dr Arun Kansal	Evaluation of river quality restoration plan and intervention analysis using water quality modelling with focus on the River Yamuna, Delhi (India)
43	Om Prakash Chaturvedi	Prof. V V N Kishore	Process optimization for conversion of vegetable oil into biodiesel and design of biodiesel plant
44	Divya Negi	Dr Sanjay Saxena	Micropropagation of two economically important species of bamboos: *Bambusa balcooa* Roxb. and *Bambusa nutans* Wall. Ex Munro
45	Rajalakshmi Muralidharan	Dr Alok Adholeya	Assessment of the functional and genetic variations of seven hyphal fusion progenies of arbuscular mycorrhizal fungi from their parents
46	Sanjeev Kumar	Dr Alok Adholeya	Partial sequencing and molecular phylogeny of arbuscular mycorrhizal fungi using SSU-ITS and LSU rRNA gene
47	Neena Priyanka	Prof. P K Joshi	Economical niche modelling framework for mapping *Lantana camara* invasion risk potential under climate and anthropogenic changes

48	Richa Sharma	Prof. P K Joshi	Development and behaviour of Surface Urban Heat Island (SUHI) in semi-arid conditions of Delhi
49	Aditi Banerji	Dr Malini Balakrishnan	Pretreatment of agro-residues for the production of fermentable sugars
50	Aniruddha Ghosh	Prof. P K Joshi	Framework to Unify Sensor Information for Observing Nature (FUSION): Selected Earth observation applications using remote sensing data
51	Sunita Singh	Prof. Arabinda Mishra	Forest ecosystem services and urban water supply: A PES framework for the Mumbai metropolitan, India
52	Monika Saini	Prof. P K Joshi	Integrated socio-physical modelling framework for adaptive watershed management using geospatial tools
53	Mohita Sharma	Dr P M Sarma	Sulphate reducing bacteria based biocathode for bioelectrochemical systems
54	Aastha Gulati	Dr Rajiv Seth	Soil, water and nutrient conservation and livelihood analysis in agricultural microwatershed of Chotanagpur plateau, India
55	Prasant Kumar	Prof. Arabinda Mishra	Joint forest management outcomes across forest types: A study in Madhya Pradesh, India
56	Gopal Sarangi	Prof. Arabinda Mishra	Electricity sector regulation and sustainable development outcomes: An analysis of regulatory impact in 12 Indian states for 2001–2010
57	Pooja Arora	Prof. Suresh Jain	Biomass burning: Energy and emissions performance of traditional and improved cookstoves under controlled laboratory conditions
58	Neelam Singh	Prof. Prateek Sharma	Environmental Determinants and Their Impact in Various Indian industries: A Study of Environmental Performance Under EMS Framework
59	Sudha Shrotria	Prof. S Sundar	The Environment and Human Rights: An Analytical Study of the Role and Performance of the National Human Rights Commission of India in addressing Environmental Issues from a Human Rights Perspective
60	Anshuman Bhardwaj	Prof. P K Joshi	Characterization of glacial terrain and its environs using geospatial tools
61	Preeti Aggarwal	Prof. Suresh Jain	Health impact of pollutants of surface transport sources: A modelling and epidemiological approach
62	Anubha Agrawal	Dr Shresth Tayal	An assessment of volume of summer-accumulation type glaciers.

ONGOING DOCTORAL RESEARCH

S.No.	Name of the Student	Supervisor's Name	Topic of Research
1	Savita Gautam	Dr Subir Sen	Environmental measures and its effect on export sector: A Study of Indian shrimp and prawn exports
2	Pratiksha R Mayee	Dr Anandita Singh	Molecular and functional characterization of FT and SOC1 for modulation of flowering in Brassica species
3	Navarun Varma	Dr Arabinda Mishra	Disaster and governance in Brahmaputra basin of India: Case study of an ecological surprise within Assam
4	A K Joshi	Prof. P K Joshi	Change in resource utilization pattern and its impact on forest ecosystems in lesser Himalaya
5	Shyam Sundar Sharma	Dr Shashi Bhushan Tripathi	Identification and molecular characterization of superior genotypes of *Pongamia pinnata* for increased biodiesel production
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	Shivaraj S M	Dr Anandita Singh	Chracterization of microNA genes in Brassica
9	Priyanka Srivastava	Dr Anandita Singh	Genomic strategies for modulating fruit and flower development in Brassicas
10	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
11	Madhuben Sharma	Prof. Prateek Sharma	Water quality modelling for different water bodies in the foothills of Himalayas
12	Daya Bhardwaj	Dr Nutan Kaushik	Development of chemical fingerprinting and chemometrics methods for quality control of Indian Berberis species and their value added products
13	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

14	Pratima Singh	Prof. Arun Kansal	Energy use pattern analysis in STPs for scoping for use of renewable energy resources in centralized and decentralised plants
15	Swati Gupta	Prof. Arun Kansal	Enhancing the attractiveness of sewage sludge bio-methanation through phosphorus recovery as struvite using sludge blanket clarifier
16	Gaurav Pande	Dr Vidya S Batra	Waste derived supported catalyst for VOC oxidation
17	Nidhi Gupta	Dr Vidya S Batra	Utilisation of red mud as a catalyst for the processing of hydrocarbons to enhance the production of hydrogen
18	Shipra Rajesh	Prof. Prateek Sharma	Inherent vulnerability assessment of rural communities in Kimsar region of Uttarakhand, India
19	Mamta Mehra	Dr Chander Kumar Singh	Conceptual framework to understand location specific variability for addressing sustained farm productivity challenges
20	Deepti Sharma	Prof. Suresh Jain	Evaluating health effects and risk characterization due to emissions from biomass energy based traditional and advanced cook stoves in rural communities
21	Tarannum Fawzia	Prof. Arun Kansal	Residents' perception of river water quality and their willingness to participate in water quality management programme
22	Priya N	Dr Kamna Sachdeva	A study of rainfall variability and cloud formation
23	Priyanka Kohli	Dr Jitendra Vir 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"
24	Shikha Aggarwal	Prof. Prateek Sharma	A study of development controls and energy consumption at city level in Indian context
25	Achla Behl	Dr Sapna Narula	A study on the evaluation of the mobile medical units (MMUs) in Uttarakhand
26	Md Aminul Islam	Dr Shashi Bhushan Tripathi	Germplasm characterization and mapping of pungency locus in Capsicum spp. from north-eastern India
27	P Sabari	Dr Neetika Walia	Isolation and production of bioactive compunds with biopesticidal property from *Westiellopsis prolifica* and *Nostoc spongiaeforme*
28	Sangeeta Sharma	Dr Shashi Bhushan Tripathi	Marker-based approach to study genetic polymorphisms in preeclampsia
29	Anjali Bajwa	Dr Vidya S Batra	Carbon membrances and monoliths from bagasse fly ash for environmental and energy applications

30	Madhuri Kumari	Dr Chander Kumar Singh	Geostatistical modelling to predict precipitation in Indian Himalyas of Uttarakhand region
31	Vaibhav Sharma	Prof. P K Joshi	Snow cover monitoring and snowmelt runoff modelling in North-West Himalaya
32	Dinesh Chander Pant	Prof. Arun Kansal	Development of efficient pretreatment system to improve viability of AD for organic solid waste
33	Shelly Bogra	Dr Ritu Mathur	India's water footprint by environmentally extended input-output modelling
34	Vipan Kumar	Dr Sapna Narula	Mapping climate technologies for energy sector in India: A comparative study vis-à-vis China and US
35	Nehru Machineni	Dr M S Madhusoodanan	Importance of air-sea coupling in understanding the tropical climate variability using a high resolution regional coupled ocean atmosphere mode (WRF+ROMS)
36	Shikha Tyagi	Dr Anandita Singh	Study of transcriptional regulators involved in flowering in Brassica spp
37	Suneel Kumar	Dr Shashi Bhushan Tripathi	Fine mapping of spot blotch disease resistant QTL in wheat
38	Sneha Singh	Dr Banwari Lal	Screening and selection of efficient microbial strains for bio hydrogen production under thermophilic condition
39	Swarnalakshmi	Dr Rajiv Seth	Barriers to investment in renewable energy: A risk perception approach
40	Ria Sinha	Prof. 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
41	Neeraj Dangi	Dr Sapna Narula	Consumer behaviour in organic food and the role of eco-labels
42	Anandajit Goswami	Dr Kaushik Ranjan Bandyopadhyay	Essays on energy transition question
43	Sandip Mukherjee	Prof. P K Joshi	Downscaling of coarse resolution open source remotely sensed satellite-based land surface temperature data
44	Anita Amarsingh Dahiya	Dr Chubamenla Jamir	Ozone and determination of leighton ratios to differentiate between background, stratosphere-intruded and photo-chemically produced ozone in Delhi
45	Saumya Dhup	Dr Vibha Dhawan	Isolation, characterization, and large scale cultivation of algae for lipid production
46	Abhishek Saxena	Dr Ramakrishnan Sitaraman	Development of osmotolerant yeast strain for ethanol production from lignocellulosic materials

47	Ruchira Ghosh	Prof. Arun Kansal	Estimation of the potentiality of municipal solid waste disposal options for energy and carbon reduction
48	Jyoti Kashyap	Dr Joachim Michael Schmerbeck	Impact of anthropogenic disturbance on prey populations in Kumbhalgarh Wildlife Sanctuary, Rajasthan
49	Manshu Madan	Prof. Prateek Sharma	Stochastic modelling application for local urban air quality management
50	Poonam Khatri	Prof. Arun Kansal	Life cycle approach for improving the sustainability of mustard oil extraction and low-valued cake
51	Manish Gupta	Dr Ramakrishnan Sitaraman	Programmed cell death in Mycobacterium: Study of the role of parDe genetic loci of Mycobacterium tuberculosis in macrophage growth and dormancy
52	Ashish Singla	Dr Banwari Lal	Production of next generation liquid biofuels using biomass derived syngas as sole carbon source by microbial means
53	Yogita Rai	Dr Deepti Gupta	Identification and functional characterization of calcium induced gene/s under dehydration stress in *Oryza sativa*
54	Tanu Sri	Dr Anandita Singh	Study of functional aspects of regulatory evolution in Brassica SOC1
55	Debajit Palit	Dr Kaushik Ranjan Bandyopadhyay	Towards convergence of grid and off-grid supply for effective rural electrification
56	Indu Barwal	Dr Subhash Chandra Yadav	Development of nano particulate based chimeric drug delivery system using drug bio conjugated plant virus capsids on biocompatible nanoparticles
57	Brij Mohan Sharma	Dr Shresth Tayal	Climate induced mobilization of persistent organic pollutants (POPs) in Ganges River, India
58	Swati Kwatra	Prof. Prateek Sharma	Development of regional scale composite sustainable development index using participatory approach
59	Niyati Naudiyal	Dr Joachim Michael Schmerbeck	Forest dynamics of the Central Himalaya and related changes in the supply of ecosystem services
60	Garima Vats	Dr Ritu Mathur	Water-carbon-energy nexus in the Indian power sector: A focus on conventional fuels based thermal power generation
61	V Rangarajan	Dr Priyanka Kaushal	The Earth air heat exchange: Prediction of performance in constrained urban sites
62	Anjna Sehrawat	Dr Ramakrishnan Sitaraman	Identification and characterization of *Helicobacter pylori* phospholipases

63	Anupama Atri	Dr Anandita Singh	Molecular and functional characterization of MIR160 and its targets from Brassica species
64	Binod Kumar Mahto	Dr Swatismita Dhar	Development of transgenic liners of tomato and chilli plants against anthracnose disease
65	Anusheema Chakraborty	Dr Kamna Sachdeva	Climate change vulnerability of forests and livelihoods in the central Himalayan landscape
66	Aparna Tyagi	Dr Jitendra Vir Sharma	Assessment of implementation of the scheduled tribes and other traditional forest dwellers (recognition of Forest Rights) Act 2006 Sonbhadra district of Uttar Pradesh
67	Sachin Kumar	Prof. Prateek Sharma	Diffusion of cleaner production innovation among MSMEs: Case study of brick sector in India
68	Sonia Grover	Dr Shresth Tayal	Assessing climate change impacts on water availability patterns in a mountain catchment
69	Sunil Dahiya	Prof. Suresh Jain	Environmental impact of electricity generation from coal using life cycle approach
70	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.
71	Himanshu Chaturvedi	Dr Priyanka Kaushal	Biological treatment of MSW leachate with PVA gel technology and scale up methodology
72	Anupriya Desore	Dr Sapna Narula	A study of environmental and social practices in Indian textile industry
73	Anurag Varma	Dr Shaleen Singhal	Contribution of cultural practices towards sustainability of urban development of Hindu religious towns in India: Case study-Mathura/Vrindavan, Brajbhoomi, India
74	Girija Sabitha Banu	Dr Rajiv Seth	Indian civil aviation and carbon emissions: Gap analysis of existing environmental and regulatory framework
75	Megha Chandhiok	Dr Rajiv Seth	Openness of economy, spillovers and productivity growth: Firm level evidence from Indian services
76	Nidhi Gautam	Prof. Manipadma Datta	Searching for financial sustainability of micro, small and medium enterprises (MSMEs) in India: An analysis in retrospect and prospect
77	Xian Ming Zhang	Dr RK Pachauri	Six well known: Measuring human habitats based on the empirical observations of empirical observations of beauty in sustainable structures
78	Chetna Chauhan	Dr Suneel Pandey	An assessment and management of residues in e-waste recycling

79	Anand Kumar	Dr Chander Kumar Singh	Arsenic geochemistry in Indus Basin, Punjab, India
80	Meenakshi Choudhary	Dr Chubamenla Jamir	Sustainability of organic agriculture (case study of Middle Gujarat agro climatic region)
81	Nathaniel Bhakupar Dkhar	Dr Shresth Tayal	A comparative assessment of glacier response to climatic setting through mass balance measurement
82	Pradeep Vashisht	Dr Shresth Tayal	Assessing energy balance of high altitude glacierised basin in the North-Western Himalayas
83	Ranjana Ray Chaudhuri	Prof. Prateek Sharma	A framework for updating intensity duration frequency curves for storm events
84	Shailly Jaiswal	Dr Shresth Tayal	An assessment of vulnerability to local livelihood due to melt water variations in a mountain catchment
85	Sonal Bindal	Dr Chander Kumar Singh	Arsenic vulnerability in the Upper Gangetic Plains
86	Swati Singh	Dr Shresth Tayal	Assessment of water-energy-food inter linkage in urban areas and developing a framework for adaptation
87	Anoop Anand Malik	Dr Shashi Bhushan Tripathi	QTL mapping in Jatropha using an advanced interspecific population
88	Pratiksha Jain	Dr Banwari Lal	Electrochemical treatment of petroleum waste water
89	Siddharth Sinha	Dr Pallavi Somvanshi	Functional computational approach towards structural insights of HDAC inhibitors as an anti *Spinocerebellar ataxia* agents
90	Tulika Bhardwaj	Dr Pallavi Somvanshi	Genome wide identification of virulence factors of Clostridium botulinum ATCC 3502 using next generation sequencing
91	Amit Kumar Thakur	Prof. Manipadma Datta	Corporate social responsibility and business sustainability in India: In retrospect and prospect
92	Shinu Vig	Prof. Manipadma Datta	Corporate governance and sustainable value creation in business: A study of select Indian firms
93	Devpreet Singh	Dr M P Ram Mohan	Civilian nuclear energy and risk communication in India: Evaluation and strategies for an improved stakeholder engagement
94	Parvesh Kumar	Dr Shaleen Singhal	Assessment of socio-economic benefits of non-motorised transport integration with public transit in metro cities in India
95	Vatsala Koul	Dr Mandira Kochar	The role of small RNAs in plant-associated bacteria under stress conditions
96	Rohit Sharma	Dr Kamna Sachdeva	A study of tropospheric ozone and aerosols over Delhi

97	Sourabh Shrivastava	Dr Anu Rani Sharma	A study of drought occurrences and forecasting of drought events in the Indian subcontinent
98	Nidhi Jha	Dr Chander Kumar Singh	Groundwater modelling and vulnerability assessment in part of northern India
99	Roopam Shukla	Dr Kamna Sachdeva	Assessing vulnerability of mountainous communities to climate change
100	Sonal Garg	Dr Piyali Das	Hi-grade carbon from biomass and waste sources through pyrolysis route, its characterization and application
101	Md Ziauddin	Dr Shaleen Singhal	Evaluation of challenges and prospects of urban development: An exploratory research with special reforms to redevelopment in Delhi
102	Niharika Tyagi	Dr Smriti Das	Gender and community forestry institutions: Analyzing gender roles, identities and social capital in local forest governance
103	Shivani Wadehra	Prof. Prateek Sharma	Public choice and solid waste management: A case study of Delhi households
104	Vivek Tyagi	Prof. Manipadma Datta	Studying cases of business failures: A critical analysis aiming enhanced business sustainability
105	Parvathi C Nair	Dr Sridar Babu M N	Assessment of few environmental factors in carrying capacity of Bangalore city
106	Ram Kumar Singh	Dr Vinay Shankar Prasad Sinha	Hyper-spectral image remote sensing, SAR data analysis and web GIS customization using C Sharp, Java Core, Postgres, Oracle11g.
107	Sudeshna Maya Sen	Prof. Arun Kansal	Variations in effectiveness and outcomes of adaptation interventions in Uttarakhand region
108	Sourabh Jain	Dr Shaleen Singhal	An evaluation of carrying capacity based system dynamics approach towards emerging cities: Case studies for Surat and Chandigarh
109	Gp Capt Sanjay Kumar Srivastava	Dr Anu Rani Sharma	Mechanism of fog variability and prediction of fog events over the Indo-Gangetic plains
110	Gp Capt A Shajahan	Dr Rajiv Seth	Employment of aerospace power in disaster response: An analysis of existing framework in India.

LIST OF MoUs

S.No.	Name	Description
1	Queensland University of Technology, Australia	Joint PhD programme
2	Brandeis University, USA	Academic Exchange
3	Freie University, Germany	Academic Exchange
4	Chubu University, Japan	Academic Exchange
5	North Carolina State University, USA	Academic Exchange
6	Linnaeus University, Sweden	Academic Exchange
7	Technical University of Denmark, Denmark	Academic Exchange
8	University of Seychelles, Seychelles	Academic Exchange
9	University of Freiburg, Germany	Academic Exchange
10	Tor Vergata Economic Foundation, Italy	Academic Exchange
11	The Universite De Reims Champagne–Ardenne, France	Academic Exchange
12	Simon Fraser University, Canada	Academic Exchange
13	Deakin University, Australia	Academic Exchange/Joint PhD Programme
14	University of Technology, Australia	Academic Exchange/Joint PhD Programme
15	International University of Kyrgyzstan, Kyrgyzstan	Academic Exchange
16	Bangdung Institute of Technology, Indonesia	Academic Exchange
17	Alliance 4 University, Spain	Academic Exchange

HONOURS AND AWARDS

STUDENTS

Mr Sahil Singh Kapoor, Student, MTech Urban Development and Management received certificate from Emily White, Director, The American Center Programme, Ms Karuna Singh, Director, Earth Day Network India, Shri Kartikeya Sarabhai, Director, CEE and Madhavi Joshi, Director, Youth Programmes-CEE—at the South-Asia Youth Environment Conclave, held from 29–30 September 2015 at the American Center, New Delhi.

Dr Shivakshi Jasrotia, alumni of the TERI University won the First Place in Energy Development "Best Innovation Project" at the First BRICS-EAEU Forum 2015. The International Youth Forum on Science and Innovation of BRICS and EAEU was hosted in Moscow from 28–30 October 2015. The event was attended by delegations from Brazil, India, China, South Africa, Armenia, Belarus, Kazakhstan, Kyrgyzstan and Russia. During the forum, the participants presented their innovative projects in four key areas of energy, medicine and health, IT and agriculture. The innovation challenge was judged for innovative idea, innovative product and innovative project.

Mohd. Zeeshan, 3rd Semester student of MTech, Water Science and Governance, secured First position in **Research Poster Presentation** during **SWASH 2015** inter university event organized by Water Studies Department. The topic of his research poster was "Smart Water Leak Detection System."

FACULTY

M P Ram Mohan
Elected as President of Nuclear Law Association, India for the third term (2015–17)

Arun Kansal
Visiting Professor in 'Natural Science', University of Derby, United Kingdom (2015–18)

STUDENT CLUBS AT TERI UNIVERSITY

The University has seven active clubs: (i) Dramatics Club, (ii) Elocution Club, (iii) Eco-Club, (iv) Sports Club, (v) Music and Dance Club, (vi) Media and Photography Club, and (vii) Ideation Club.

Dramatics Club: Students engage in activities like street plays, drama to spread awareness about environmental issues and sustainability.

Elocution Club: Is primarily formed to hone 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.

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 in TERI Gram, Gual Pahari, Gurgaon. This club 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 artistes from outside. It helps develop and hone students' interest in music and traditional/contemporary dance forms.

Media and Photography Club: Helps in creating awareness about TERI University activities and its philosophy to the world outside.

Ideation Club: This club was established to promote spirit of innovation among the students of the TERI University.

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.

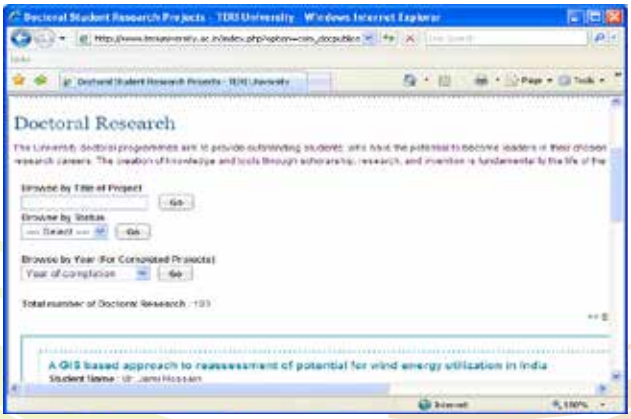
The Library embarks on University wide information literacy efforts, targeting everyone from students to faculty. It proactively engages in scholarly interactions with users and makes digital library resources and services more visible, more used, and better attuned to user needs. The digital library 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.

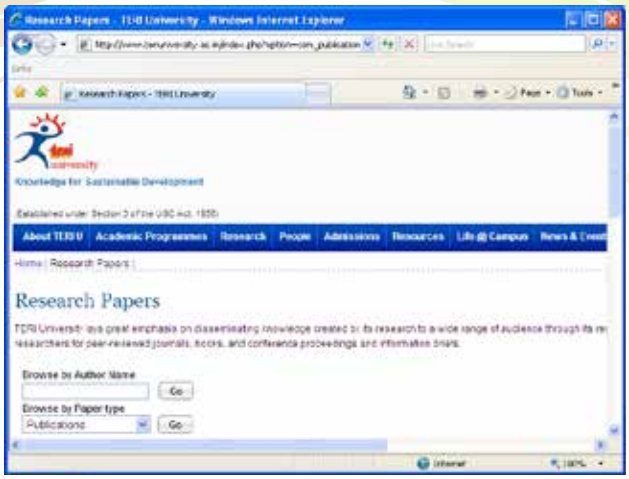
Digital Library Services' development is prioritized according to user needs. The University's specific in-house special collections are integrated in online

Students using digital services

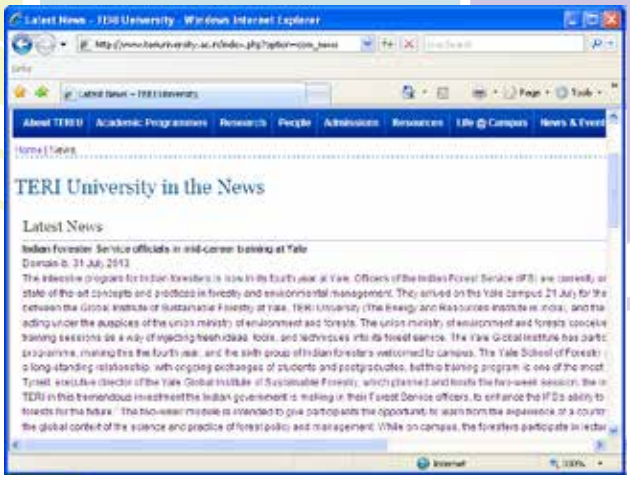
Integrated Information System



TERI University Digital Theses



E-Publications



Digital News Alert Service

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.

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 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 workflow 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 cross-section 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 supports students and faculty through its core services, it also focuses on the student opportunities to help them grow and succeed through national and international events and enables the users to connect and transform their lives.

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 is on a Microsoft platform and is 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 printing service is enabled for faculty and staff members. Access to multiple resources such as the Internet, University Mail and Collaboration Tool, 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. Two different Internet links to build redundancy are available with a total capacity of 24 mbps. 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 and collaboration, 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 25 computers, having various specialized scientific software installed, such as MATLAB, STATA, SPSS, TRANSYS, etc. The Geoinformatics Lab with ARCServe and ARC GIS software is also available for students. Video conferencing facility for distance learning and a media lab is available for recording and streaming of lectures. A content-rich media server is

set up having all the recorded lectures and events organized at the TERI University for further training purpose. Centralized IT Helpdesk staff is present round the clock for addressing IT-related issues at the earliest possible. 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.

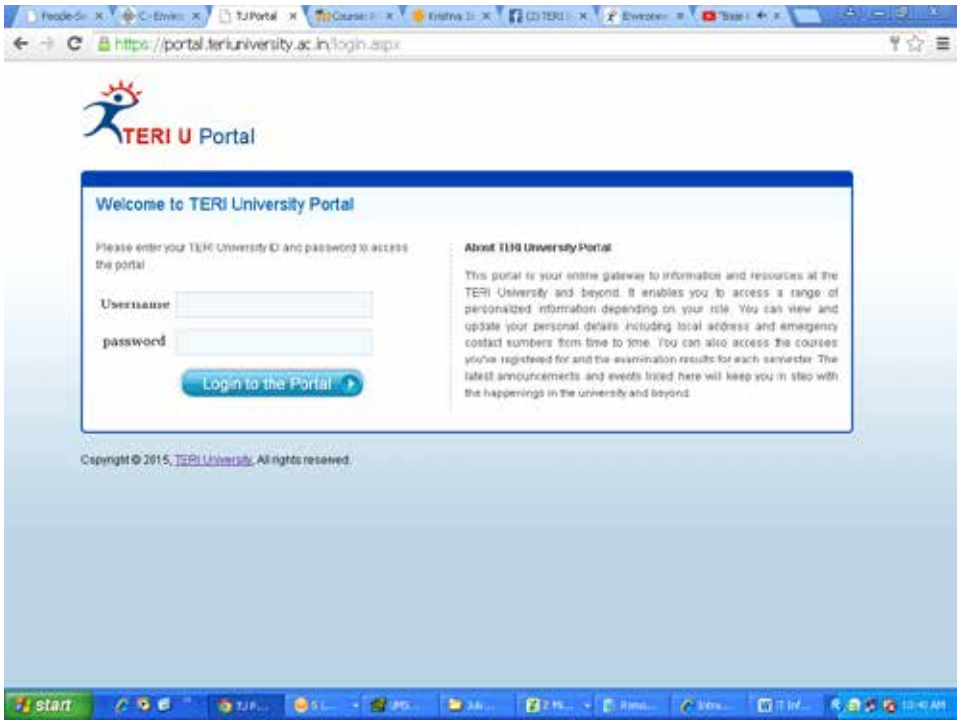
TERI University Media Lab

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 (HD) plasma screens for clear picture view, Sony 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.

Highlights

- Development of e-content for online courses or distance learning
- High-definition video output
- Digital notepad for interactive session
- Archiving of recorded videos for future access

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.

E-learn: Learning Management System

E-learn portal is based on Moodle and is provided to distance learning students. They can access their course material online and are able to participate in discussion forum, news forum, quiz, etc. Chat session with course coordinator or with subject expert can be done as and when required.

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

The 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 façade with aluminium glazing
- Earth air tunnel, thermal mass storage, and variable refrigerant volume 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 sewage treatment plant
- Rainwater harvesting
- Solar rooftop system

TERI UNIVERSITY LABORATORIES (RESOURCES)

The TERI University Laboratories

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

Solar Lighting Laboratory

TERI has established a Solar Lighting Laboratory (SLL) which is a first-of-its-kind laboratory in India and achieved the National Accreditation Board for Laboratories' accreditation as per IEC 62257-9-5 edi 2.0. The laboratory adheres to International Electrotechnical Commission (IEC is 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), Government of India and has sophisticated equipment and test setup that is used for testing lighting products.

The laboratory's facility is available for testing as per IEC and MNRE specifications for various lighting systems (both solar-based lighting and general lighting). The laboratory has also carried out various training programmes for different target groups. So far, SLL has tested more than 170 models of SLS 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 that will help in building consumer confidence towards the solar lighting products. The IFC's Lighting Asia–India programme is working with TERI 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 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 is capable of conducting all kinds of soil, water, and air monitoring experiments required at the master's level. The laboratory has been created with the objective of providing a facility with all basic equipments required for analysis of environmental samples (soil, waste, water, and air). It caters to the interdisciplinary application in research to all the master's students (science-based) of the University. This laboratory facility is common for MSc (ESRM and CSP) programmes and comprises the following equipment: 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 furnace, TSI optical partical sizer, Potable gas analyser, 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, Controlled Cooking Test, and the Indian Standard on Solid Biomass Chulha Specification (BIS India). The hood method is used to capture and quantify the various products of incomplete combustion. The following instruments and support facilities are available in the lab:

- Moisture meter
- Bomb calorimeter
- Equipment to maintain isokinetic conditions
- Aerosol spectrometer and dust monitor
- Low flow air samplers (attached with SKC pump) for collection of bulk aerosols for characterization
- Potable gas analyser
- Digital infrared thermometer.

Geoinformatics Laboratory

The Geoinformatics Laboratory at the TERI University is well equipped with state-of-the-art equipments such as high-end computers (dual processor), scanners, digitizers, printers, plotters, handheld navigation devices (GPS), infra-red thermometers, and others. Digital image processing software like Erdas Imagine 9.3/8.7, LPS 9.3, GIS software like ArcGIS 9.3 Workstation, GMS 6.0, WEAP are some of the advanced support systems available in the laboratory. Also, web publishing tools like ArcGIS advance and ArcIMS servers are available. The lab is also outfitted with open source geospatial softwares. The lab holds a good repository of geospatial information in digital and hard formats. The department has strong network with various research institutions and universities working in the subfields. These facilities support R&D activities in various centres of TERI across the country.

Biotechnology Laboratory

MSc Plant Biotechnology aims to advance and impart knowledge in the field of life sciences, emphasizing research and interaction of science with society. The Biotechnology Laboratory is well equipped with succession of basics and advanced instruments required for research applications such as deep freezers, plant growth room, gas chromatography, biosafety cabinet, microscopy facilities, nanodrop spectrophotometer, an advanced bioinformatics laboratory equipped with work station, and dedicated computer systems enabled with advanced software, such as MATLAB, GCK, PAUP, and MacVector has been assigned for in silico applications.

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 and forced convection, and radiation. The lab is fully equipped with experiments on different heat exchangers. It also provides knowledge of boiling and condensation processes. The lab explores the basics of mechanical engineering and is designed such that the interdisciplinary students are able to acquire knowledge in an easy way.

Biofuel and Waste Utilization Laboratories

The Biofuel and Waste Utilization Laboratories are distributed between the TERI University and TERI Gram at Gual Pahari, Gurgaon. Some basic fuel parameters such as proximity analysis, COD, etc., can be analysed at the TERI University, while experiments on conversion systems such as gasification, biomethanation, and pyrolysis are carried out at TERI Gram.

TERI University has been, and is being, supported in its endeavours by

For support to the MA (Public Policy and Sustainable Development) programme

For setting up a Chair in MBA (Infrastructure)

Deutsche Bank

For scholarships in MBA (Infrastructure)

FORDFOUNDATION

For setting up the Department of Natural Resources

HSBC

The world's local bank

For scholarships in doctoral programmes

SUZLON

For support to the MTech (Renewable Energy Engineering and Management) programme

Coca-Cola

For setting up the Department of Regional Water Studies

SCCF Sindicatum Climate Change Foundation

For scholarships

vkrf V. Kann Rasmussen Foundation

For funding a collaboration with Yale University

MacArthur Foundation

For initiating the MA (Sustainable Development Practice) programme

teri university

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