

M.Sc. (Environmental Studies and Resource Management)

Sponsored candidates

Candidates working in the Industry/Government are encouraged to apply for the full-time M.Sc. programmes. Upto five seats can be reserved in each programme for such candidates. All those who satisfy the minimum qualifications, mentioned in the above para may be admitted to the programme on the basis of an interview. These candidates are required to submit, at the time of interview, a sponsorship certificate from their employer on a proper letterhead, stating that for the period of his/her study at the University, the candidate will be treated as on duty with usual salary and allowances and that he/she will be fully relieved for the period of study for pursuing his/her studies. Sponsored candidate's application will be accepted only from those on the pay rolls of & sponsored by a registered company. Such applications would need to be accompanied by the audited balance sheet of the company and last year's income tax return of the applicant indicating the salary received from the company.

Placement

The students who complete M.Sc. ESRM programme possess the requisite confidence and skills to work as efficient environmental researchers, project managers and policy planners in both public and private organizations. It will also be a structured route to doctoral research work. The University has a Placement Cell that helps students find suitable organizations to do their minor and major projects as well as final placement.

Some of the organizations where the students have been placed in the past are given below:

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| • United Nations Development Programme (UNDP) | • International Water Management Institute (IWMI) |
| • United Nations Environment Programme (UNEP) | • National Institute of Hydrology (NIH) |
| • World Wide Fund for Nature (WWF) | • Ernst & Young |
| • Shakti Sustainable Energy Foundation | • HCL Foundation |
| • Emergent Ventures | • Ultratech Cement |
| • Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) | • Arabesque |
| • Ashoka Trust for Research in Ecology and the Environment (ATREE) | • IORA Ecology |
| | • Tata Trust |
| | • KPMG |
| | • IHS Markit |
| | • RMS |
| | • Chola MS |
| | • Prism Johnson |

Department of Natural and Applied Sciences

Quality of life depends on the quality and quantity of natural resources available for use to human race. The world today faces an unprecedented challenge of sustainability. Finding a balance between meeting the needs of human population and maintaining integrity of nature around us is the foremost question of our times. It is imperative to understand how natural processes and systems work around us and how to best use them in pursuit of this balance. The Department of Natural and Applied Sciences (DNAS) at TERI SAS is established to impart training for engaging with the questions of natural resource management in a scientifically rigorous manner. It houses faculty members from a diverse disciplinary academic background with a focus on applied research for informed decision making.

DNAS offers four distinct interdisciplinary masters programs in Biotechnology, Climate Science and Policy, Environmental Science and Resource Management, and Geoinformatics; and two transdisciplinary Ph.D. Programs in Bioresources and Biotechnology, and Natural Resource Management.

Students pursuing their Master's / Doctoral programme at DNAS are exposed to an academically rigorous and interdisciplinary learning environment with a significant emphasis on laboratory work and engagement with contemporary debates, emphasizing exploration and creative thinking and application as essential ingredients of originality in research and learning.

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About TERI School of Advanced Studies

Academic programmes at the TERI SAS are focused around the challenges of providing the advanced studies rising global population with a limited and degraded natural resource base. In moving towards sustainability, the implicit understanding is that there is no panacea or straight road, with recognized and established methodologies, tools or specializations leading to such development.

The solutions therefore do not lie in a specific subject discipline, but must be appropriate and relevant to the context or the practical problem being addressed. Developing such an understanding among its students is best achieved through exposure to a variety of subjects, tools, and methodologies offered in interdisciplinary mode. This has been the guiding philosophy behind the programmes offered by the TERI SAS and is practised by building a theoretical understanding in courses covering a variety of traditional disciplines, such as ecology, natural and social sciences, governance, policy, law, and engineering.

Over a period of two years, students converge upon a few areas of focus 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 his environment.

Apart from doctoral research, the TERI SAS offers M.Sc. degree programmes in Environmental Studies and Resource Management, Environmental and Resource Economics, Geoinformatics, Water Science and Governance, Climate Science and Policy, and Biotechnology; MBA in Sustainability Management; and M.Tech. programmes in Renewable Energy Engineering and Management, Water Resources Engineering and Management and Urban Development Management.

The institute offers two M.A. programmes, one in Public Policy and Sustainable Development, and the other in Sustainable Development Practice. TERI SAS is one of a select group of 22 institutions chosen worldwide by the MacArthur Foundation, USA, to run the Sustainable Development Practice programme. The institute uses modern pedagogical tools, richly supplemented by field visits, live industry projects, and hands-on applications. It provides the very best in equipment and instruments, which includes state-of-the-art computer facilities, well-equipped laboratories, video-conferencing facilities, and access to South Asia's most comprehensive library on energy and environment.

TERI SAS has established excellent partnerships and collaborative arrangements with a number of institutions overseas, including Yale University, USA; The Freie University of Germany; Utrecht University, The Netherlands; North Carolina State University, USA; and University of Technology, Australia.

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

M.Sc.

ENVIRONMENTAL STUDIES AND RESOURCE MANAGEMENT



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Of late there has been a growing realization that India should emerge as an economy driven by knowledge. Given the rapid progress that intellectual enterprises are making worldwide, higher education must benefit from a continuous accretion of knowledge through research. This is what TERI SAS is attempting to do through all its programmes, for the benefit of not only Indian citizens but people from other countries as well who would pass through the portals of this institution. This University offers education supported by rigorous research.

About the rogramme

There is an urgent need for efficient utilization and management of resources to ensure sustainable development. Such efforts require a deeper understanding of the development process, the driving factors and the interlinkages within the system.

The M.Sc. ESRM lays foundation for the students from diverse backgrounds to understand the interdisciplinarity of environmental and resources management and learn various tools and techniques. The programme is designed to build a cadre of professionals who are equipped with the knowledge and skill sets to deal with scientific and policy aspects related to environment and resource management.

The theoretical concepts acquired through classroom session and seminars are complemented by the exposure to the real-world scenarios through various field visits during the two years programme. Students also get opportunities to be part of ongoing research projects in the university and enhance their knowledge. This unique degree programme fosters young professionals towards innovative and independent career goals.



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Programme

The curriculum has been designed by integrating the concept of sustainable development in an inter-disciplinary framework with an optimal blend of theory and practical components. The programme comprises of a set of core and elective course spread across the first, second and third semesters. The core courses focus on building the foundation for the students within the subject area and the elective courses allows the students to gain in-depth knowledge and proficiency in a preferred domain. A minor research project during the summer at the end of the second semester and a major research project during the fourth semester allows the students to apply their learnings in understanding real-life scenarios.

Programme Outline

Year	Courses	Credits	Duration*
First Year			
1st Semester	7 core courses of 3-4 credits each 1 compulsory audit of 1 credit equivalent	21	15 weeks
2nd Semester	1 core courses of 2 credits minimum 5 electives of 3 credits each	17	15 weeks
Summer	Major project	2	8 weeks
Second Year			
3rd Semester	1 core course of 4 credits minimum 3 electives of 3-4 credits each	15	15 weeks
4th Semester	Major project	15	At the location of the project

*Does not include mid and end-semester breaks and evaluation schedules (based on major and minor tests and assignments)

Year/Semester	Courses Title	Courses	Credits
First Year			
1st Semester	Ecology	Core	3
	Environmental Chemistry and Microbiology	Core	3
	Applied Mathematics	Core	0
	Communication Skills and Technical Writing	Core	2
	Introduction to Sustainable Development	Core	0
	Environmental Monitoring Laboratory	Core	3
	Environmental Geosciences	Core	3
	Environmental Law and Policy	Core	3
	Environmental Statistics	Core	4

Year/Semester	Courses Title	Courses	Credits
First Year			
2nd Semester	Water Quality Management	Elective	3
	Solid and Hazardous Waste Management	Elective	3
	Air Quality Management	Elective	3
	Research Methodology and Thesis Writing	Core	2

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	Biodiversity Assessment and Conservation	Elective	3
	Hydrology	Elective	3
	Principles of Geoinformatics	Elective	3
	Basic Course in Environmental and Resource Economics	Elective	3
	Multivariate Data Analysis	Elective	3
	Environment Health and Risk Assessment	Elective	3
	Advanced Geosciences	Elective	3
	Soil Science	Elective	2

Year/Semester	Courses Title	Courses	Credits
Second Year			
3rd Semester	Minor Project	Core	2
	Environmental Management System	Elective	4
	Geoinformatics for Resource Management	Elective	4
	Environmental Economics	Elective	3
	Environmental Modelling	Elective	4
	Governance and Management of Natural Resources	Elective	3
	Independent Study	Elective	3
	Integrated Impact Assessment	Core	4
	Climate Change and Disaster Risk Reduction	Elective	3
	Seminar Course in Global Change	Elective	3
	Food Security and Agriculture	Elective	3
	Groundwater Hydrology and Management	Elective	3
	Glacier Hydrology	Elective	3
	Water and Wastewater Treatment Processes and Design	Elective	4
	Integrated Watershed Management	Elective	3
	Wildlife Conservation and Management	Elective	3
	Aerosol Science	Elective	3
	Satellite Meterology	Elective	3
4th Semester	Major Project	Core	15

Eligibility Criteria

A Bachelor's degree in Science/Engineering/Economics/Mathematics/Statistics/Geology/ Geography with a minimum cumulative grade point average of 6.75 on a 10 point scale or equivalent, as determined by TERI SAS, wherever letter grades are awarded, or 60% marks in aggregate, wherever marks are awarded. For candidates with bachelor's degree in Humanities (e.g. Economics/ Geography), a relaxation of 5%/ 0.75 Cumulative Grade Point Average could be allowed.

Selection Procedure

Admission to the MSc programme is made on the basis of an online test and an interview conducted by the University.

Pedagogical Tools

The learner centric pedagogy comprises of classroom lectures enriched by case studies, field visits, term papers, assignment and tutorials, guest lectures by practitioners and experts, seminars and discussion forums.



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