

1.3.2 Q_nM	<i>Number of value-added courses for imparting transferable and life skills offered during the last five years</i> 1.3.2.1: How many new value-added courses were added during the last 5 years Data Requirement for last five years: (As per Data Template) <ul style="list-style-type: none"> Names of the value added courses with 30 or more contact hours No. of times such courses were offered during the same year Total no. of students completing the course in the year File Description (Upload) <ul style="list-style-type: none"> Any additional information Brochure or any other document relating to the value added courses List of value added courses (Data Template) 	10
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Data template:

2016-17

Name of the value-added courses offered (with 30 or more contact hours) and Course Code	Year of offering	No. of times offered during the same year	Duration of the course	Number of students enrolled in the year	Number of Students completing the course in the year
Biodiversity Assessment and Conservation- M.Sc. (ESRM) (NRE 123)	2016-17	1	15 weeks	41	41
Business communications - MBA (BS) (PPM 101)	2016-17	1	15 weeks	20	20
Climate lab (NRC 107))	2016-17	1	15 weeks	16	16
Dissertation 1 (MPL 103)	2016-17	1	15 weeks	21	21
Dissertation 2 (MPL 104)	2016-17	1	15 weeks	21	21
Energy lab - I (Power system lab and heat transfer lab) (ENR 101)	2016-17	1	15 weeks	24	24
Energy lab-2 (ENR 157)	2016-17	1	15 weeks	31	31
Entrepreneurship Development and Management - MBA (BS) (PPM 199)	2016-17	1	15 weeks	25	25
Field trip 1-M.Sc. & M.Tech. (WSG) (WSW 103)	2016-17	1	15 weeks	18	18
Field trip 2-M.Sc. & M.Tech. (WSG) (WSW 105)	2016-17	1	15 weeks	10	10
Field visits (ENR 103)	2016-17	1	15 weeks	18	18
Independent study – M.Sc. (ESRM)	2016-17	1	15 weeks	36	36
Independent study – M.Sc. (Geo)	2016-17	1	15 weeks	23	23
Independent study (ENR 105)	2016-17	1	15 weeks	36	36
Independent study (NRE 105)	2016-17	1	15 weeks	24	24
International Exposure (PPS 107)	2016-17	1	15 weeks	10	10
Major Project - M.Tech. (REEM)	2016-17	1	15 weeks	24	24
Major Project - MBA (BS) (PPM 102)	2016-17	1	15 weeks	30	30
Major Project - MBA (I)	2016-17	1	15 weeks	26	26
Major Project- M.Sc. (PBT)	2016-17	1	15 weeks	15	15
Major Project (BBP 104)	2016-17	1	15 weeks	8	8
Major Project (BSI 104)	2016-17	1	15 weeks	8	8
Major Project (NRE 104)	2016-17	1	15 weeks	25	25
Major Project (Part 1) (MEU 102)	2016-17	1	15 weeks	24	24
Major Project(Part 2) (MEU 104)	2016-17	1	15 weeks	20	20
Master's thesis, MSc Econ (MPE 108)	2016-17	1	15 weeks	21	21
Minor Project - MBA (BS & I)	2016-17	1	15 weeks	13	13
Minor Project - MBA (I)	2016-17	1	15 weeks	14	14
Minor Project (BSI 102)	2016-17	1	15 weeks	25	25
Minor Project (NRE 103)	2016-17	1	15 weeks	27	27
Minor Project (NRG 107)	2016-17	1	15 weeks	18	18

Minor Project (PPM 100)	2016-17	1	15 weeks	16	16
NGO Attachment (PPS 139)	2016-17	1	15 weeks	10	10
Plant biotechnology laboratory part 1 (BBP 101)	2016-17	1	15 weeks	7	7
Policy lab-1 (PPS 137)	2016-17	1	15 weeks	9	9
Policy lab-2 (PPS 138)	2016-17	1	15 weeks	31	31
Project 2 (WSW 104)	2016-17	1	15 weeks	15	15
Project work report (WSW 106)	2016-17	1	15 weeks	21	21
Social Research Methods (MPD-173)	2016-17	1	15 weeks	20	20
Strategic communication and stakeholder engagement (BSI 103)	2016-17	1	15 weeks	19	19
Summer Internship (ENR 108)	2016-17	1	15 weeks	26	26
Summer Project (PPS 107A)	2016-17	1	15 weeks	27	27
Technical Writing (NRE 101)	2018-19	1	15 weeks	17	17

2017-18

Name of the value-added courses offered (with 30 or more contact hours) and Course Code	Year of offering	No. of times offered during the same year	Duration of the course	Number of students enrolled in the year	Number of Students completing the course in the year
Biodiversity Assessment and Conservation-M.Sc. (ESRM) (NRE 123)	2017-18	1	14 weeks	44	44
Business communications (PPM 101)	2017-18	1	14 weeks	23	23
Business communications - MBA (BS) (PPM 101)	2017-18	1	14 weeks	23	23
Climate lab (NRC 107))	2017-18	1	14 weeks	19	19
Dissertation 1 (MPL 103)	2017-18	1	14 weeks	19	19
Dissertation 2 (MPL 104)	2017-18	1	14 weeks	19	19
Energy lab - I (Power system lab and heat transfer lab) (ENR 101)	2017-18	1	14 weeks	34	34
Energy lab-2 (ENR 157)	2017-18	1	14 weeks	34	34
Entrepreneurship Development and Management (PPM 199)	2017-18	1	14 weeks	23	23
Field trip 1-M.Sc. & M.Tech. (WSG) (WSW 103)	2017-18	1	14 weeks	7	7
Field trip 2-M.Sc. & M.Tech. (WSG) (WSW 105)	2017-18	1	14 weeks	7	7
Field visits (ENR 103)	2017-18	1	14 weeks	34	34
Independent study (ENR 105)	2017-18	1	14 weeks	34	34
Independent study (NRE 105)	2017-18	1	14 weeks	44	44
Independent study (NRG 105)	2017-18	1	14 weeks	10	10
International Exposure (PPS 107)	2017-18	1	14 weeks	16	16
Major Project (BSI 104)	2017-18	1	14 weeks	23	23
Major Project (NRE 104)	2017-18	1	14 weeks	44	44
Major Project - M.Tech. (REEM)	2017-18	1	14 weeks	43	43
Major Project - MBA (BS) (PPM 102)	2017-18	1	14 weeks	23	23
Major Project (BBP 104)	2017-18	1	14 weeks	9	9
Major Project (Part 1) (MEU 102)	2017-18	1	14 weeks	12	12
Major Project(Part 2) (MEU 104)	2017-18	1	14 weeks	12	12
Master's thesis, MSc Econ (MPE 108)	2017-18	1	14 weeks	31	31
Minor Project (BSI 102)	2017-18	1	14 weeks	23	23
Minor Project (NRE 103)	2017-18	1	14 weeks	44	44
Minor Project (NRG 107)	2017-18	1	14 weeks	10	10
Minor Project (PPM 100)	2017-18	1	14 weeks	23	23
Minor Project - MBA (BS & I)	2017-18	1	14 weeks	23	23
NGO Attachment (PPS 139)	2017-18	1	14 weeks	16	16

Plant biotechnology laboratory part 1 (BBP 101)	2017-18	1	14 weeks	19	19
Policy lab-1 (PPS 137)	2017-18	1	14 weeks	16	16
Policy lab-2 (PPS 138)	2017-18	1	14 weeks	16	16
Project 2 (WSW 104)	2017-18	1	14 weeks	7	7
Project work report (WSW 106)	2017-18	1	14 weeks	7	7
Social Research Methods (MPD-173)	2017-18	1	14 weeks	24	24
Strategic communication and stakeholder engagement (BSI 103)	2017-18	1	14 weeks	23	23
Summer Internship (ENR 108)	2017-18	1	14 weeks	34	34
Summer Project (PPS 107A)	2017-18	1	14 weeks	16	16
Technical Writing (NRE 101)	2017-18	1	14 weeks	44	

2018-19

Name of the value-added courses offered (with 30 or more contact hours) and Course Code	Year of offering	No. of times offered during the same year	Duration of the course	Number of students enrolled in the year	Number of Students completing the course in the year
Biodiversity Assessment and Conservation- M.Sc. (ESRM) (NRE 123)	2018-19	1	15 weeks	38	38
Business communications - MBA (BS) (PPM 101)	2018-19	1	15 weeks	16	16
Climate lab (NRC 107))	2018-19	1	15 weeks	9	9
Dissertation 1 (MPL 103)	2018-19	1	15 weeks	23	23
Dissertation 2 (MPL 104)	2018-19	1	15 weeks	23	23
Energy lab - I (Power system lab and heat transfer lab) (ENR 101)	2018-19	1	15 weeks	28	28
Energy lab-2 (ENR 157)	2018-19	1	15 weeks	28	28
Entrepreneurship Development and Management - MBA (BS) (PPM 199)	2018-19	1	15 weeks	16	16
Field trip 1-M.Sc. & M.Tech. (WSG) (WSW 103)	2018-19	1	15 weeks	13	13
Field trip 2-M.Sc. & M.Tech. (WSG) (WSW 105)	2018-19	1	15 weeks	13	13
Field visits (ENR 103)	2018-19	1	15 weeks	28	28
Independent study – M.Sc. (ESRM)	2018-19	1	15 weeks	38	38
Independent study – M.Sc. (Geo)	2018-19	1	15 weeks	17	17
Independent study (ENR 105)	2018-19	1	15 weeks	28	28
Independent study (NRE 105)	2018-19	1	15 weeks	38	38
International Exposure (PPS 107)	2018-19	1	15 weeks	4	4
Major Project - M.Tech. (REEM)	2018-19	1	15 weeks	28	28
Major Project - MBA (BS) (PPM 102)	2018-19	1	15 weeks	16	16
Major Project - MBA (I)	2018-19	1	15 weeks	4	4
Major Project- M.Sc. (PBT)	2018-19	1	15 weeks	7	7
Major Project (BBP 104)	2018-19	1	15 weeks	7	7
Major Project (BSI 104)	2018-19	1	15 weeks	4	4
Major Project (NRE 104)	2018-19	1	15 weeks	38	38
Major Project (Part 1) (MEU 102)	2018-19	1	15 weeks	17	17
Major Project(Part 2) (MEU 104)	2018-19	1	15 weeks	17	17
Master's thesis, MSc Econ (MPE 108)	2018-19	1	15 weeks	21	21
Minor Project - MBA (BS & I)	2018-19	1	15 weeks	16	16
Minor Project - MBA (I)	2018-19	1	15 weeks	4	4
Minor Project (BSI 102)	2018-19	1	15 weeks	4	4
Minor Project (NRE 103)	2018-19	1	15 weeks	38	38
Minor Project (NRG 107)	2018-19	1	15 weeks	17	17
Minor Project (PPM 100)	2018-19	1	15 weeks	16	16
NGO Attachment (PPS 139)	2018-19	1	15 weeks	4	4

Plant biotechnology laboratory part 1 (BBP 101)	2018-19	1	15 weeks	7	7
Policy lab-1 (PPS 137)	2018-19	1	15 weeks	10	10
Policy lab-2 (PPS 138)	2018-19	1	15 weeks	38	38
Project 2 (WSW 104)	2018-19	1	15 weeks	7	7
Project work report (WSW 106)	2018-19	1	15 weeks	7	7
Social Research Methods (MPD-173)	2018-19	1	15 weeks	23	23
Strategic communication and stakeholder engagement (BSI 103)	2018-19	1	15 weeks	23	23
Summer Internship (ENR 108)	2018-19	1	15 weeks	28	28
Summer Project (PPS 107A)	2018-19	1	15 weeks	28	28
Technical Writing (NRE 101)	2018-19	1	15 weeks	16	16

2019-20

Name of the value-added courses offered (with 30 or more contact hours) and Course Code	Year of offering	No. of times offered during the same year	Duration of the course	Number of students enrolled in the year	Number of Students completing the course in the year
Biodiversity Assessment and Conservation-M.Sc. (ESRM) (NRE 123)	2019-20	1	15 weeks	38	38
Business communications - MBA (BS) (PPM 101)	2019-20	1	15 weeks	16	16
Climate lab (NRC 107))	2019-20	1	15 weeks	9	9
Dissertation 1 (MPL 103)	2019-20	1	15 weeks	22	22
Dissertation 2 (MPL 104)	2019-20	1	15 weeks	22	22
Energy lab - I (Power system lab and heat transfer lab) (ENR 101)	2019-20	1	15 weeks	28	28
Energy lab-2 (ENR 157)	2019-20	1	15 weeks	28	28
Entrepreneurship Development and Management - MBA (BS) (PPM 198)	2019-20	1	15 weeks	23	23
Field trip 1-M.Sc. & M.Tech. (WSG) (WSW 103)	2019-20	1	15 weeks	12	12
Field trip 2-M.Sc. & M.Tech. (WSG) (WSW 105)	2019-20	1	15 weeks	12	12
Field visits (ENR 103)	2019-20	1	15 weeks	42	42
International Exposure (PPS 107)	2019-20	1	15 weeks	4	4
Major Project - M.Tech. (REEM)	2019-20	1	15 weeks	42	42
Major Project - MBA (BS) (PPM 102)	2019-20	1	15 weeks	23	23
Major Project- M.Sc. (PBT)	2019-20	1	15 weeks	9	9
Major Project (BSI 104)	2019-20	1	15 weeks	4	4
Major Project (NRE 104)	2019-20	1	15 weeks	41	41
Major project of Geoinformatics (NRG 104)	2019-20	1	15 weeks	11	11
Major Project (Part 1) (MEU 102)	2019-20	1	15 weeks	14	14
Major Project(Part 2) (MEU 104)	2019-20	1	15 weeks	14	14
Master's thesis, MSc Econ (MPE 108)	2019-20	1	15 weeks	33	33
Minor Project - MBA (BS)	2019-20	1	15 weeks	23	23
Minor Project - MBA (I)	2019-20	1	15 weeks	0	0
Minor Project (NRE 103)	2019-20	1	15 weeks	41	41
Minor Project (NRG 107)	2019-20	1	15 weeks	10	10
NGO Attachment (PPS 129)	2019-20	1	15 weeks	4	4
Plant biotechnology laboratory part 1 (BBP 101)	2019-20	1	15 weeks	7	7
Policy lab-1 (PPS 137)	2019-20	1	15 weeks	15	15
Policy lab-2 (PPS 138)	2019-20	1	15 weeks	15	15
Project 2 (WSW 104)	2019-20	1	15 weeks	7	7
Project work report (WSW 106)	2019-20	1	15 weeks	7	7
Social Research Methods (MPD-173)	2019-20	1	15 weeks	24	24
Strategic communication and stakeholder	2019-20	1	15 weeks	0	0

engagement (BSI 103)					
Summer Internship (ENR 108)	2019-20	1	15 weeks	42	42
Summer Project (PPS 107A)	2019-20	1	15 weeks	4	4
Technical Writing (NRE 101)	2019-20	1	15 weeks	45	45

2020-21

Name of the value-added courses offered (with 30 or more contact hours) and Course Code	Year of offering	No. of times offered during the same year	Duration of the course	Number of students enrolled in the year	Number of Students completing the course in the year
Biodiversity Assessment and Conservation- M.Sc. (ESRM) (NRE 123)	2016-17	1	15 weeks	40	40
Business communications - MBA (BS) (PPM 101)	2016-17	1	15 weeks	18	18
Climate lab (NRC 107))	2016-17	1	15 weeks	13	13
Dissertation 1 (MPL 103)	2016-17	1	15 weeks	21	21
Dissertation 2 (MPL 104)	2016-17	1	15 weeks	21	21
Energy lab - I (Power system lab and heat transfer lab) (ENR 101)	2016-17	1	15 weeks	25	25
Energy lab-2 (ENR 157)	2016-17	1	15 weeks	30	30
Entrepreneurship Development and Management - MBA (BS) (PPM 199)	2016-17	1	15 weeks	24	24
Field trip 1-M.Sc. & M.Tech. (WSG) (WSW 103)	2016-17	1	15 weeks	16	16
Field trip 2-M.Sc. & M.Tech. (WSG) (WSW 105)	2016-17	1	15 weeks	10	10
Field visits (ENR 103)	2016-17	1	15 weeks	26	26
Independent study – M.Sc. (ESRM)	2016-17	1	15 weeks	26	26
Independent study – M.Sc. (Geo)	2016-17	1	15 weeks	31	31
Independent study (ENR 105)	2016-17	1	15 weeks	32	32
Independent study (NRE 105)	2016-17	1	15 weeks	19	19
International Exposure (PPS 107)	2016-17	1	15 weeks	8	8
Major Project - M.Tech. (REEM)	2016-17	1	15 weeks	31	31
Major Project - MBA (BS) (PPM 102)	2016-17	1	15 weeks	24	24
Major Project - MBA (I)	2016-17	1	15 weeks	20	20
Major Project- M.Sc. (PBT)	2016-17	1	15 weeks	15	15
Major Project (BBP 104)	2016-17	1	15 weeks	16	16
Major Project (BSI 104)	2016-17	1	15 weeks	13	13
Major Project (NRE 104)	2016-17	1	15 weeks	17	17
Major Project (Part 1) (MEU 102)	2016-17	1	15 weeks	25	25
Major Project(Part 2) (MEU 104)	2016-17	1	15 weeks	17	17
Master's thesis, MSc Econ (MPE 108)	2016-17	1	15 weeks	23	23
Minor Project - MBA (BS & I)	2016-17	1	15 weeks	11	11
Minor Project - MBA (I)	2016-17	1	15 weeks	14	14
Minor Project (BSI 102)	2016-17	1	15 weeks	14	14
Minor Project (NRE 103)	2016-17	1	15 weeks	21	21
Minor Project (NRG 107)	2016-17	1	15 weeks	14	14
Minor Project (PPM 100)	2016-17	1	15 weeks	19	19
NGO Attachment (PPS 139)	2016-17	1	15 weeks	7	7
Plant biotechnology laboratory part 1 (BBP 101)	2016-17	1	15 weeks	19	19
Policy lab-1 (PPS 137)	2016-17	1	15 weeks	7	7
Policy lab-2 (PPS 138)	2016-17	1	15 weeks	36	36
Project 2 (WSW 104)	2016-17	1	15 weeks	10	10
Project work report (WSW 106)	2016-17	1	15 weeks	14	14
Social Research Methods (MPD-173)	2016-17	1	15 weeks	13	13
Strategic communication and stakeholder	2016-17	1	15 weeks	14	14

engagement (BSI 103)					
Summer Internship (ENR 108)	2016-17	1	15 weeks	17	17
Summer Project (PPS 107A)	2016-17	1	15 weeks	18	18
Technical Writing (NRE 101)	2018-19	1	15 weeks	12	12

DVV requirement

Documents Needed

- ☐ List of value-added courses which are optional and offered outside the curriculum of the programs as endorsed by the appropriate authority. [Annexure 1.3.2.A](#).
- ☐ Brochure and Course content or syllabus along with course outcome of Value-added courses offered. Link of brochures: <https://www.terisas.ac.in/brochures.php>. Also [Annexure 1.3.2.B](#).

Specific instruction to HEI

Courses of varying durations (at least 30 contact hours), that are optional, and offered outside the curriculum that adds value to the holistic development of the students.

Avoid the following while uploading data

LL.M. Programme

8	Hazardous Waste Law	Elective	2
9	Biotechnology Law	Elective	2
10	Air and Water Law	Elective	2
	Total		16
Infrastructure and Business Law			
1	Business and Taxation Laws in Infrastructure Projects	Core	3
2	Contracts Law and Management	Core	2
3	Infrastructure Project Finance Law	Core	2
4	Legal Aspects of Bidding and Public–Private Partnership	Core	2
5	Energy Law	Elective	2
6	Urban Infrastructure Law	Elective	2
7	Transport Law	Elective	2
8	Water Resources Law	Elective	2
9	Telecommunication Law	Elective	2
10	Electricity Law, Reforms and Practice	Elective	2
11	Competition Law and Policy	Elective	2

* An elective course will be offered only if a minimum number of students opt for it.

Eligibility Criteria

A candidate having an LL.B. / B.L. Degree from a recognized University.

Selection Process

Admission to the LL.M. programme is made on the basis of an all-India online test and interview conducted by the University. The online test will be one-hour long and will consist of one paper with 100 multiple-choice questions.

The questions will be divided into three sections:

- Proficiency in English
- Analytical reasoning
- Quantitative ability

Wrong answers would invite negative marking.

The online test would be followed by a written

test and an interview of short listed candidates. The written test will be on legal reasoning and basic legal knowledge.

Career Prospects

Infrastructure laws and environmental laws are two emerging and important fields in legal practice. An LL.M. with specialization in either of these fields would open up opportunities in litigation, corporate practice, teaching, and research.

Placement Cell

A placement cell has been formed that will be managed by students for placing the students in suitable positions.

About TERI School of Advanced Studies

Academic programmes at the TERI SAS are focused around the challenges of providing the 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 MSc degree programmes in Environmental Studies and Resource Management, Environmental and Resource Economics, Geoinformatics, Water Science and Governance, Climate Science and Policy, and Plant Biotechnology; MBA programmes in Infrastructure and in Business Sustainability; MTech programmes in Renewable Energy Engineering and Management, Water Science and Governance and Urban Development and Management; and LL.M. programmes in Environment & Natural Resources Law and in Infrastructure & Business Law.

The University offers two MA programmes, one in Public Policy and Sustainable Development, and the other in Sustainable Development Practice. The 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 University 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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February 2018 (100)



Established under Section 3
of the UGC Act, 1956
Accredited by NAAC

LL.M.

One-Year Programme with Specialization in

- **Environment and Natural Resources Law**
- **Infrastructure and Business Law**



www.terisas.ac.in



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.

Programme Overview

Infrastructure laws and Environmental 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 the TERI SAS offers a one-year LL.M. programme with specialization in *Environment and Natural Resources Law and Infrastructure and Business Law*.

Environment and Natural Resources Law

A developing country like India with a large population needs to protect the environment in its process of development. While development will remain a priority in India, the country cannot afford to ignore environmental concerns in the process of development. The environmental concerns need to be integrated into all economic policies and projects. A specialization in *Environment and Natural Resources Law*, therefore, assumes great significance.

The primary focus of LL.M. specializing in *Environment and Natural Resources Law* stream is to understand how the legal framework can reorient economic activity towards sustainability. This reorientation can happen in different ways like prohibiting or regulating environmentally damaging activities, assigning liability for environmental harms, clearly defining property rights 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. This specialization offers a broad range of introductory and specialized courses.

Infrastructure and Business Law

An adequate and robust infrastructure is necessary to promote and sustain economic development. 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. Infrastructure development will thus remain a priority of any government of the day. 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. LL.M. with specialization in *Infrastructure and Business Law* will address the policies and laws relating to major sectors, viz., transport

LL.M. Programme

(including railways and civil aviation), energy, telecommunications, urban infrastructure, and water. The purpose of this specialization stream 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. The programme will address issues relating to public–private partnerships in detail.

Why Study LL.M. at TERI SAS

An LL.M. degree prepares a candidate to become a teacher, researcher, litigating lawyer, or a corporate lawyer. An inter-disciplinary perspective is required at this level and the course curriculum and pedagogy offered by TERI SAS correspond to the needs of such an interdisciplinary learning. The programme draws strength from the Departments of Business Sustainability, Policy Studies, Regional Water Studies and Natural Resource.

TERI SAS has been offering courses in law in various programmes over time. In addition, a number of short-term programmes in law have been successfully organized in the recent past. The research projects at TERI and TERI SAS have focused on legal issues in an interdisciplinary setting. These reports are good starting points for classroom discussions.

Centre for Postgraduate Legal Studies

A Centre for Postgraduate Legal Studies is set up as an interdisciplinary centre of excellence dedicated to legal research and teaching on issues pertaining to society and development. The One Year LL.M. programme is offered under the auspices of the Centre through the Department of Policy Studies. The highlights of this unique LL.M. programme are the following:

Programme Highlights

- Courses designed in consultation with industry and focusing on national and international developments
- Courses aimed at balancing theoretical rigour and practical application
- Wide variety of optional courses taught by legal professionals
- Skills development through research assignments, group work, role play, seminars and workshops

Pedagogical Tools

Pedagogical tools comprise not just classroom lectures but also case studies, role play, seminars, term papers, etc. Considerable emphasis will be placed on writing skills and team work. Guest lectures by eminent practitioners and industry experts would also be a part of the programme.

LL.M. Programme

Programme Outline

Year	Courses	Credits	Duration
Semester I	7 common courses	16	18 weeks
Semester II	2 common courses and 4 specialization-based core courses and 2 electives*	16	18 weeks

Course Details Semester I

No.	Courses		Credits
1	Research Methods and Legal Writing	Core	3
2	Comparative Public Law/Systems of Governance	Core	3
3	Law and Justice in a Globalizing World	Core	3
4	Economic Foundations of Environmental and Infrastructure Law	Core	1
5	Environmental Law and Policy	Core	2
6	Infrastructure Law and Policy	Core	2
7	Dissertation	Core	2
8	Seminar/Clinic on Contemporary Issues in Infrastructure and Environment	Core	Audit
	Total		16

Semester II

No.	Common for Both Streams		Credits
1	Dissertation	Core	3
2	Weekly Seminar/Clinic on Contemporary Issues in Infrastructure and Environment	Core	Audit
Environment and Natural Resources Law			
1	International Environmental Law	Core	3
2	Mining and Mineral Laws	Core	2
3	Environmental Aspects of Business Activities	Core	2
4	Forest Law and Policy	Core	2
5	Energy Law	Elective	2
6	Water Resources Law	Elective	2
7	Climate Change and Law	Elective	2

Selection Process

DoPt sponsored Government candidates: Selection of potential participants from the civil services consists of two stages. In the first, applications will be screened by the Department of Personnel and Training based on appropriate eligibility criteria as defined by the department. In the second stage, a selection committee constituted according to the rules of the TERI SAS (including a nominee of the Department of Personnel and Training), will interview the short-listed candidates. The committee will select up to 30 candidates. The list of the selected candidates will then be forwarded to the Department for processing as necessary.

Other candidates: Applications will be screened, and the shortlisted candidates will be interviewed by the TERI SAS. The total number of candidates for the programme would not exceed 40 in any batch.

Pedagogy & Assessment

Class lectures are combined with discussions, workshops and seminars, field-projects and presentations. The primacy is emphasized on the importance of analytical skills across both oral and written communication. The PPSD Programme follows a system of continuous assessment in terms of the curricular content assessed through the autonomous course-structures. In addition, the other learning factors like the classroom participation etc. will be assessed.

Faculty

The Faculty of the Programme are from the disciplines of Public Policy; Development Studies; Economics; Anthropology; Management and other allied disciplines of Humanities and Social Sciences.

Duration

- One year of coursework on campus (for the PG Diploma Programme)
- Two weeks at a foreign university
- Two weeks at a National/regional level NGOs
- One-year major project at a place of work (for obtaining Master degree)
- Those who opt to be on campus in the second year can attend additional courses

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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.

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1.3.2.9



MA PUBLIC POLICY AND SUSTAINABLE DEVELOPMENT





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. TERI SAS offers education supported by rigorous research.

MA (Public Policy & Sustainable Development)

The MA in Public Policy and Sustainable Development is a two-year Master's programme being offered by TERI SAS, New Delhi since 2006. It is a uniquely designed programme aimed at participants entering the phase of policy-making in their careers. The MA (PPSD) builds a robust theoretical knowledge base in public policy supported by case studies from the Indian context. It is distinct in structure, objectives and pedagogy from other programmes in Public Administration. It is sponsored by the Department of Personnel and Training (DoPT), Government of India.



Programme Structure

MA (PPSD) comprised 66 credits spread over two years (4 semesters)

- The first semester is of 17 credits carried out over 18 weeks of academic work including assessments and field projects. The second semester is of 18 credits carried out over 18 weeks of academic work including assessments and field projects.
- The 66 credits required for completion of the Programme are distributed between Core Courses, Elective Courses, NGO Attachment (2 credits), International immersion (2 credits) and a Major Project (27 credits)
- Two weeks at a foreign university
- Four weeks at a National/regional level NGOs
- The duration does not include mid and end-semester breaks and evaluation schedules (based on major and minor tests and assignments)

Programme Overview

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

Policy decisions by government officials at all levels are required to be increasingly multifaceted especially in the light of economic reforms and the need to ensure that decision-making contributes to sustainability in 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 (1) be trained in the politics and economics of public policy and in sophisticated methods and tools of analysis, and (2) refresh their knowledge of the substantive development issues at hand.

Programme Specific Outcomes

The PP&SD programme offers a unique opportunity to understand public policy-making across sectors such as energy, environment, natural resources, social security and public finance. It assists the participants in experiential learning through the following factors;

- Identify problems and the scope for policy intervention

- Build up strong analytical capabilities that help to evaluate when policy interventions are needed and also their necessary impacts
- Gain an understanding of the normative basis of choice of policy objectives and trade-off
- Analyse policy constraints, design of public institutions, and choice of policy instruments
- Pragmatic assessment of unintended consequences of various policies
- Facilitate formulation of processes of stakeholder consultations and debates

Programme USP:

The TERI SAS was one of the first universities to start a Master's programme in public policy in India. It is the only institute, which offers a comprehensive programme on public policy and sustainable development in the country. The programme started in 2006 with the support of the Department of Personnel and Training, Government of India primarily intended for mid-career civil servants.

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 the effects that policy decisions have on political, economic, social, and environmental aspects in domestic as well as international domain.

The participants have the option of completing the programme in one year after undertaking domestic and foreign component, in which case they would be awarded with a Post Graduate Diploma in Public Policy and Sustainable Development.

As the participants of the programme consist of mid-career civil servants and are from the profit and not for profit sectors, it gives immense opportunities for cross learning.

Programme outline

SEMESTER 1 (CORE)	
Course Title	Course Title
Introduction to Sustainable Development	Industrial Development and Sustainability
Society and Development Policy	Energy Policy and Sustainable Development
Sustainable Consumption and Production	Governance and Law
India and the World	Policy perspectives on Water
Policy Lab-I	Art and Sustainability (Elective)
SEMESTER 2 (CORE)	
Assessing Public Policy: Methods and Measurements	Communities and Conservation
Major Policy Issues : Education, Health and Infrastructure in India	Sustainable Urbanization
Policy Lab-II	Agriculture and Rural Development
Challenges of a Digital Economy	Public Management : Issues and challenges with special reference to India
Public Policy Processes and Institutions	
SEMESTER 3 (CORE)	
International Exposure	Summer Project
NGO Attachment	
SEMESTER 4 (CORE)	
Major Project	

NGOs Attachments of the Past Batches

- ALIG Society, Jamshedpur
- Ankur Society for Alternatives in Education
- HAQ: Centre for Child Rights
- Prayas Juvenile Aid Centre (JAC) Society
- Centre for Women's Development Studies
- Creatnet Education
- Agewell Foundation
- Centre for Social Research
- Indian Institute of Public Administration
- ISKCON
- Indian Water Foundation
- National Institute of Women, Child and Youth Development (NIWCYD)
- Gulmeher Green Producer Company Ltd.
- Shikshit Rojgar Kendra Prabandhak Samiti (SRKPS)
- TERI IHC

This is only an indicative list; the actual list is more comprehensive with credible organizations that have engaged our students in research, development and implementation profiles.

Eligibility

DoPt sponsored Government candidates: The programme is open to officers of All India Services, Central Services (organized & non-organized, technical & non-technical), faculty members of State Administrative Training Institutes and also officers of the State Civil Services (SCS) & Non-State Civil Services (Non-SCS) subject to the following eligibility conditions:

(i) Length of Service: Officers should have completed 5 years of Group 'A' service as on commencement of the programme

(ii) age: The officers should have at least three years remaining service after completion of the programme

(iii) Earlier Training: The officers should not have undergone a training Programme of 12 weeks or more duration in India during 5 years preceding the date of commencement of this programme. Further, the officer should not have undergone a Programme of training abroad of more than 2-weeks in preceding 2-years, more than one month in preceding 3-years or more than six months in the preceding 5-years.

Other Candidates: Graduates with a minimum experience of five years in any of the following sectors: government, regulatory bodies, industry, research/academic institutions, NGOs and donor/consultant organizations.

Internships and Final Placements of the Past Batches

- The Energy and Resources Institute (TERI)
- International Food Policy Research Institute (IFPRI)
- WWF-India
- Population Services International (PSI)
- Pan Himalayan Grassroots Development Foundation
- Centre for Science and Environment
- UNESCO
- Planning Commission of India
- Public Health Foundation of India (PHFI)
- The Environmental Policy Research Centre, Freie University Berlin
- KPMG
- CII-ITC Centre of Excellence for Sustainable Development
- ITC Limited
- Rajasthan Rural Livelihood Project
- American India Foundation (AIF)
- Tata Trust
- Save the Children India
- HCL Foundation
- World Health Organization (WHO)
- Concern India Foundation
- Ernst & Young
- SM Sehgal Foundation
- International Centre for Integrated Mountain Development (ICIMOD)
- MSME Clusters
- Centre for Ecology Development and Research (CEDAR)
- Ministry of Women Affairs (MoWA), Afghanistan
- Centre for Health and Social Justice, Afghanistan

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Who Should Apply?

- Development professionals seeking a complete understanding of sustainable development approaches and wanting to enhance their skills.
- Students and scholars with a passion to work in the field of development, seeking just and effective social change.

Career Prospects

- The course aims to prepare students for employment in varied development organizations, such as national and international NGOs, bilateral and multinational financial institutions, funding foundations and corporations, and social sector initiatives of companies. In addition, some of our alumni also have set startups and have become 'Entrepreneurs'.

Eligibility Criteria

- An undergraduate degree in any discipline, from a recognized institution/university.
- Candidates with prior experience in the development sector would be preferred.



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November 2018 (200)



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3 of the UGC Act, 1956
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M.A. SUSTAINABLE DEVELOPMENT PRACTICE





1.3.2.B.

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.



M.A. (Sustainable Development Practice)

The Master's Programme in Sustainable Development Practice, i.e., M.A. (SDP) seeks to address the critical gap in sustainable development education in the developing regions where such capacity creation is required the most. The programme is designed based up on the recommendation of the global situation analysis of development training, capacity building programmes, undertaken during 2007–08 by the International Commission on Education for Sustainable Development Practice.

Programme Highlights

- Students are taught the latest practices in sustainable development by sector specialists and academicians.
- Pedagogy strongly focusses on problem-based learning, case studies, seminars, and field visits.
- The group practicum summer internship and final various courses, with real-life challenges and enable students to analyse developmental problems holistically.
- Flexibility to opt for electives across departments and programmes depending on the area of interest.
- Students also participate in the 'Global Classroom: Integrated Approaches to Sustainable Development Practice', an interactive course blending online and offline learning led by some of the top experts in the field, globally.

Programme specific outcome

By the end of M.A. SDP programme, the students:-

- Gain in-depth knowledge of development, theories, approaches and practices
- Learn about the latest practices promoting sustainable development from national and international experts (academicians and practitioners), from partner universities, research institutes and development agencies
- Gain experience in real world problem analysis and problem solving through global classroom, minor and major project
- Develop skills for project design and management, development communication, social research, cross-cultural and intercultural adaptation, entrepreneurial and innovative business development
- Get substantive fieldwork experiences through group practicum for integrating knowledge and skills taught in the course



SEMESTER 1	
Course Title	Credits
Perspectives on Development	1
Integrated Approaches to Sustainable Development Practice	3
Applications of Environmental Science	3
Principlesof Economics	3
Quantitative Analysis for Development Practice	3
Social Research Methods	4
Law, Society and Sustainable Development	3

SEMESTER 2	
Integrated Impact Assessment	2
Development Economics	3
Populationand Health: Techniques of Analysis and Policy Perspective	3
Management of Development Organizations	3
Organizational Behaviour and Human Resourcesfor Development Organizations	3
Key Concepts of Cultural and Political Ecology	2
Group Practicum: Community Needs Assessment	4
Principles of Geoinformatics (Elective)	3
Summer Internship - 8 weeks	

SEMESTER 3	
Project Design and Management for Sustainable Development Practice	4
Public Health and Development: Issues and Methods	3
Public Policy Processes and Institutions	3

Programme Structure

M.A. (SDP) is a two-year degree programme that aims to provide graduate-level students with knowledge and skills to better identify and address sustainability challenges, such as poverty, disease, climate change, and ecosystem vulnerability at the local, regional and global levels. The programme has strong practice focus with cross-disciplinary and cross-sectoral orientation.

Electives (Three)	
CourseTitle	Credits
Food Security and Agriculture	3
Governance and Management of Natural Resources	3
Urban Development Policies and Programmes	3
Environmental Law and Policy	3
Application of Quantitative Data Analysis in Development Practice	2
Law and Justice in Globalising World	3
Sustainability Reporting	2
Development Theories and Processes	3
Social Entrepreneurship	2
Health Finance	3
Governance and Climate Change	3
Urban Disaster Management and Climate Resilient Cities	2
Gender, Rights and Equity Perspective for Sustainable Water Management	3

This is an indicative list. Students can opt for electives, across programmes, based on their area of interest. The details are available on the TERISAS website.

SEMESTER 4	
Final project – 20 weeks	16

Global Network of Masters in Development Practice Programme (www.mdpglobal.org)

- BRAC Institute of Governance and Development, BRAC University (Bangladesh)
- Birla Institute of Management Technology (India)
- CATIE (Costa Rica)
- Columbia University (USA)
- Emory University (USA)
- James Cook University (Australia)
- Lund University (Sweden)
- Paris Institute of International Affairs (Sciences Po) France)
- Trinity College Dublinand University College Dublin (Ireland)
- TERISAS (India)
- Tsinghua University (China)
- Universidad de los Andes(Colombia)
- Universidade Federal Ruraldo Riode Janeiro (Brazil)
- Université de Cheikh Anta Diop (Senegal)
- Universiti Sains Malaysia (Malaysia)
- University of Arizona (USA)
- University of Botswana (Botswana)
- University of California, Berkeley (USA)
- University of Florida (USA)
- University of Ibadan (Nigeria)
- University of Minnesota (USA)
- University of Peradeniya (SriLanka)
- University of Waterloo (Canada)
- University of Winnipeg (Canada)

Field Training Partners

- CARE India
- Foundation for Ecological Security (FES)
- Battighar Foundation
- Sevamandir
- Development Alternatives
- TATA Trust
- Syngenta Foundation
- Gramin Vikas Trust
- Tribal Research & Training Centre
- Selco Foundation
- Pradan



Year/Semester	Course Title	Type	Credits
2 nd Semester	Business Laws and Infrastructure projects	Core	2
	Contract Laws	Core	2
	Environmental and Social Laws	Core	1
	Total Credits		20
	Module 1 Strategy and Risk		
	Business Ethics	Core	1
	Strategic planning	Core	2
	Risk analysis and Implementation Management	Core	3
	Project Planning and management	Core	2
	Bidding System Management	Core	1
	Module 2 Operational aspects of Infrastructure		
	Quality Management	Core	2
	Management information systems	Core	2
	Infrastructure organization and HR	Core	3
2 nd Year 3 rd Semester	Logistics and supply chain management	Core	2
	Macroeconomic Environment	Core	3
	Total Credits		23 (17+6)
	Minor Project	Core	6
	Integrated impact assessment	Core	3
	Public Private Partnership	Core	2
	Corporate governance	Core	2
	Innovation and change management for infrastructure projects	Core	2
	Strategic communication and stakeholder engagement	Core	2
	Advanced Logistics and Supply Chain Management	Elective	2
	Accounting and finance for sustainability	Elective	3
	Financial intermediaries, institutions and markets	Elective	2
	Sustainable Urban Transport	Elective	2
	Entrepreneurship	Elective	2
4 th Semester	Urban water supply and waste management	Elective	2
	Business to business marketing	Elective	2
	Total credits		
4 th Semester	Major Project	Core	14

Department of Business and Sustainability

Sustainability issues are fast becoming the focal point of core business strategies worldwide driven by the demands of the stakeholders. The market has also started transforming and aligning to the concerns of sustainability. Recognizing this, the Department of Business and Sustainability was created in 2012 and committed itself to the cause of continued teaching, research and training in sustainability for business. Currently, the department offers two MBA courses, with special focus on Business Sustainability and Infrastructure.

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The University offers two MBA programmes in Infrastructure and in Business Sustainability. The 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 University 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.

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MBA INFRASTRUCTURE





The MBA (Infrastructure) program is designed to equip students with knowledge and skills to meet managerial challenges of the rapidly growing infrastructure sector in the country. There is a huge employment opportunity in planning and development, construction, operations and management and financing of infrastructure. The program has been designed considering current managerial needs of Construction industry, Smart cities and urban development, Transport including Metro Railways, Ports, Logistics and Supply Chain, Management of Container Terminals and Container Freight Stations, Energy and Renewable Energy etc.

Programme Structure



The programme is based on a modular structure including a summer internship and a major project. In the first year, core courses on various aspects like strategy and risk, law and policy, finance and economics, and operations are taught. While the first two semesters comprise basic courses common for all the students, third semester is devoted to the specialized courses. In addition to these courses, students are required to complete a summer project of 6-8 weeks and a major project. These projects provide students an opportunity to put classroom learning into perspective by working in various companies in the Infrastructure sector.



Paedagogical Tools

The choice of paedagogical tools is based on the principle of active learning contingent on strong conceptual understanding. These would comprise classroom lectures, case studies, field visits, term papers, assignments and tutorials, a large number of guest lectures by practitioners and experts, seminars and discussion forums, and role play. In particular, case studies, drawing from real-world management challenges, are designed and integrated into the curriculum. The faculty, along with professionals and development organizations are encouraged to collaborate in the preparation of case studies. These case studies, along with the field exposure planned and the Major Research Project, would provide relevant context to the curriculum in this programme.



Eligibility criteria

1. Bachelor's degree in any discipline with English at 10+2 level.
2. The candidate will be shortlisted based on CAT/MAT/GMAT/CMAT/XAT scores. Candidates who have not appeared for the above exams can take the TERI SAS common entrance test.
3. Candidates with more than 2 years of relevant work experience may be exempted from requirement (2) above, depending on the discretion of the selection committee.

Selection process

Selection from shortlisted candidates will be on the basis of group discussions and interviews conducted by the TERI SAS at New Delhi.

Prospects

- Focus on Developing Specific Skills in Strategy and Risk Management, Operational Aspects, Finance and Economics, Law and Policy etc.
- Training in understanding and managing multi-disciplinary challenges and sustainability impacts (social, economic,

Sponsored candidates

Candidates working in the industry/ government/regulatory bodies/ research/ academic institutions/ donor/consultant organizations are encouraged to apply. All those who satisfy the eligibility criteria may be admitted to the programme based on 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. For sponsored candidates, the possibility of evening and weekend classes can be explored.

- and environmental) of the infrastructure sector
- Placement opportunities in niche areas like transport and logistics, operations management, project planning and implementation, supply chain management, IT infrastructure management etc.

There will be an option for the candidates to apply for specific modules of the programme also.



Placements

The TERI SAS has a dedicated placement cell, which keeps the students informed about different career opportunities. Our students are already working in leading public and private sector organizations, such as:

- Hindustan Petroleum
- ONGC
- India Energy Exchange
- TCS
- Bharat Petroleum
- Oil India Ltd
- Infosys
- IPSOS
- Indian Oil
- L&T
- Wipro
- CLAWS

Programme outline

Year	Courses	Credits	Duration*
First Year			
1 st Semester	Module I - Basics of Infrastructure Business Module II - Law & Policy aspects of Infrastructure	20	8 Weeks
2 nd Semester	Module I - Strategy and Risk Module II - Operational aspects of Infrastructure	20	8 Weeks
Summer Semester	Minor Project	6	
Second Year			
3 rd Semester	17 Core Courses + 6 Electives	23	15 Weeks
4 th Semester	Major Project	14	15 Weeks

Course Details

Year/ Semester	Course Title	Type	Credits
1st Year			
1 st Semester	Total Credits		20
	Module 1 Basics of Infrastructure Business		
	Introduction to Infrastructure Business	Core	2
	Economics of Infrastructure and Pricing Strategies	Core	2
	Infrastructure project finance	Core	2
	Corporate Accounting and Reporting	Core	2
	Corporate Finance	Core	2
	Statistical methods for management	Core	3
	Module 2 Law & Policy Framework for Infrastructure Business		
	Legal & Regulatory aspects of infrastructure	Core	2

Pedagogy

The pedagogy followed here consists of classroom lectures, field visits, term papers, assignments, tutorials, role plays, a large number of guest lectures, seminars, and discussion forums. In particular, case studies on sustainability issues are used.

Eligibility

1. Bachelor's degree in any discipline with English at 10+2 level
2. The candidate will be shortlisted based on CAT/MAT/GMAT/CMAT/XAT scores. Candidates who have not appeared for the above exams can take the TERI SAS common entrance test.
3. Candidates with more than 2 years of relevant work experience may be exempted from requirement (2) above depending on the discretion of the selection committee.

Selection Process

Selection from shortlisted candidates will be on the basis of group discussions and interviews conducted by the Institute at New Delhi.

Sponsored Candidates

Candidates working in the industry/government/regulatory bodies/research/academic institutions/donor/consultant organizations are encouraged to apply for the full-time MBA. All those who satisfy the minimum qualifications 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 Institute, the candidate will be treated as on duty and that he/she will be fully relieved for the period of study for pursuing his/her studies.

Placements

The institute has a dedicated placement cell, which is in constant touch with the industry and keeps students informed about the requirements and developments in different sectors regarding the available career opportunities. It facilitates that students are able to get appropriate career opportunities. Our students are already working in leading public sector and private sector organizations like:

- KPMG
- EY
- Schneider Electric
- HCL
- IPSOS
- GE Energy
- IMRB International

Department of Business and Sustainability

Sustainability issues are fast becoming the focal point of core business strategies worldwide driven by the demands of the stakeholders. The market has also started transforming and aligning to the concerns of sustainability. Recognizing this, the Department of Business and Sustainability was created in 2012 and committed itself to the cause of continued teaching, research and training in sustainability for business. The department is interdisciplinary in its approach with courses focused on three fulcrums of sustainability – social, economic and environmental.

About TERI School of Advanced Studies

The academic programmes at TERI SAS are focused on the challenges of providing the 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 an 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 Plant Biotechnology; MBA programmes in Infrastructure Management and in Sustainability Management; M.Tech. programmes in Renewable Energy Engineering and Management, Water Resources Engineering and Management and Urban Development Management; and LL.M. programmes in Environment & Natural Resources Law and in Infrastructure & Business Law.

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 in a selected 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.

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MBA SUSTAINABILITY MANAGEMENT



www.terisas.ac.in



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 Institute offers education supported by rigorous research.

MBA (Sustainability Management)

Businesses across the globe are realizing the importance of integrating sustainability into business practices. It is evident that the future lies with those companies that integrate sustainability into their business practices.

The MBA (Sustainability Management) intended for both, fresh graduates and mid-career professionals, is an effort to align leadership in both industry and the government to current contexts. In doing so, this programme seeks to enhance the scope and knowledge body of management education in India by imparting conventional management skills to students as also by helping them develop new perspectives related to the integration of sustainable and ethical practices into management education. This is not just an MBA programme; it's an MBA plus programme that combines conventional MBA curriculum with new sustainability challenges that have direct impact on a firm's future performance, financial and otherwise. The programme also leverages The Energy and Resources Institute's (TERI) knowledge capital in sustainable development to deepen the social and ethical consciousness of management education in India. The graduates of this programme will become competent business leaders with a holistic and long-term perspective for a world that demands new skills and attitude.



Programme

During the course, students get an experience of an industry competent curriculum which aims at helping businesses to bridge the gap. The courses, such as Principles and Concepts of Sustainability, Climate Change and Development, Sustainability Reporting and CSR, Sustainable Business Strategy, Business, and Society and Environmental Economics help students recognize the need, challenges, and ways to approach long-term viability of businesses through management and optimization of resources without compromising on profitability and competitiveness.

The programme extends to two years (spread over four semesters) including a minor and major research project. The first year of the programme builds a foundation in traditional areas like general management, marketing, finance, and organizational behaviour. The second year allows students to choose from a variety of electives to specialize in different management areas like finance, marketing and sustainability.

Programme Outline

Year	Courses	Credits	Duration*
First Year			
1 st Semester	9 Core Courses	23	15 Weeks
2 nd Semester	9 Core Courses	21	15 Weeks
Summer Semester	Minor Project	6	6 Weeks at Project Location
Second Year			
3 rd Semester	5 Core Courses + 3 Elective Courses	15	15 Weeks
4 th Semester	Major Project	14	15 Weeks at the Location of the Project

Year/ Semester	Course Title	Type	Credits
1 st Year			
1 st Semester	Total Credits		23
	Principles And Concepts of Sustainability	Core	2
	Business Ethics	Core	2
	Sustainability Reporting	Core	2
	Managerial Economics	Core	3
	Marketing Management	Core	3
	Fundamentals of Management	Core	2
	Business Communication	Core	3
	Statistical Methods for Management	Core	3
	Corporate Accounting and Reporting	Core	3

Year/ Semester	Course Title	Type	Credits
2 nd Semester	Total Credits		21
	Legal Aspects of Business	Core	2
	Qualitative Research Methods in Management	Core	2
	Strategies for Sustainable Business	Core	3
	Macroeconomic Environment	Core	3
	Corporate Finance	Core	3
	Management Information System	Core	2
	Advanced Statistical Methods for Management	Core	2
	Corporate Social Responsibility	Core	2
	Organisational Behavior and Leadership	Core	2
2 nd year			
3 rd Semester	Total Credits		21 (15+6)
	Accounting and Finance for Sustainability	Core	3
	Minor Project	Core	6
	Entrepreneurship	Core	2
	Supply Chain Management	Core	2
	Business, Natural Ecosystems and Community	Core	2
	Health Finance	Elective	3
	Corporate Governance	Elective	2
	Sustainable Consumption and Production	Elective	2
	Financial Intermediaries, Institutions And Regulations	Elective	2
	Integrated Impact Assessment	Elective	4
	Derivatives and Risk Management	Elective	2
	International Financial Management	Elective	2
	Business to Business Marketing	Elective	2
	Urban Governance	Elective	4
	Environmental Management System	Elective	4
	Brand Management	Elective	2
	Security Analysis and Portfolio Management	Elective	2
	Production and Operations Management	Elective	3
	Consumer Behaviour	Elective	2
	Project Design and Management for Sustainable Development Practice	Elective	4
	Social Entrepreneurship	Elective	2
	Design Thinking	Elective	2
4 th Semester	Major Project	Core	14



1.3.2.B.



1.3.2.B.



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M.Sc. (Biotechnology)





There is a growing realization that India must emerge as a knowledge economy. Given the rapid progress in intellectual enterprises worldwide, higher education must benefit from this continuous stream of knowledge generated through biotechnological research. With the goal of creating future leaders capable of tackling problems of global societies, TERI SAS offers a Master's programme in Biotechnology for candidates naturally curious in understanding biological phenomena, and interested in developing innovative and useful technologies while subscribing to the philosophy of Sustainable development.

Background

Biotechnology is an exciting field of modern sciences. The socio-economic impact of biotechnology in diverse contexts as energy, health care, sustainable agriculture, conservation of biological diversity, and abatement of environmental problems is evident. A biotechnologist must have a multidisciplinary vision, possess relevant skills to generate and interpret data objectively, informed by a sound knowledgebase. A biotechnologist has an obligation to communicate scientific outcomes to public in a responsible, free, and transparent manner. With multitudes of organizations (Academia and Industry) dedicated to discoveries and scientific innovations, management of Intellectual Property forms a key aspect of Biotechnology. Furthermore, biosafety and ethics constitute the key foundation of biotechnological applications. Therefore, knowledge in regulatory framework and risk analysis is essential.

M.Sc. (Biotechnology)

M.Sc. in Biotechnology (BT) is aimed at exploring sustainable solutions for agriculture, energy, environment and health sectors. The programme is compliant with the choice-based credit system (CBCS) of UGC, Govt. of India and is aligned to the proposed New Education Policy (NEP) 2020. The programme further aims to contribute to the National missions viz; National Mission for Sustainable Agriculture, National Mission for sustaining the Himalayan Ecosystem and National Water Mission. The end-objective of the programme is to meet the sustainable developmental goals such as zero hunger, good health and well being and imparting quality education.

Specializations offered:

- M.Sc. in Biotechnology (specialization in Plant Biotechnology)
- M.Sc. in Biotechnology (specialization in Microbial Biotechnology)



Programme Structure

- The M.Sc. Biotechnology programme is a two-year programme divided into four semesters. A student is required to complete 75 credits for the completion of the programme and the award of degree.
- The M.Sc. Biotechnology programme provides options for specialization by completing a set of specialisation specific courses. Currently, two specialisations are being offered under the Programme: i) Plant Biotechnology and ii) Microbial Biotechnology.
- The entire M.Sc. Biotechnology Programme is comprised of core courses (51 credits), elective courses (audit only but equivalent to minimum 4 credits), Specialisation specific courses (8 credits) and a Major Project (16 credits). In addition, two courses, i) Technical Writing and Communication Skills and ii) Applied mathematics have been added as compulsory audit courses.
- The specialisation specific courses will be offered during second and third semesters. A student can opt for specialisation specific courses related to only one of the available specialisations.
- The elective courses are to be taken only as audit course only and the grades in those courses will not be considered while calculating the CGPA. A minimum 4 credits equivalent of elective courses need to be completed during the Programme. There is no upper limit for the number and credit equivalent for Elective courses. The Elective courses may be taken in any semester when offered by the concerned Department and provided it doesn't conflict with any other course taken by the student.
- At the start of Semester 2, the students will be required to choose any one of the two specialisations. Maximum of 60% of the total number of students can be allotted a particular specialisation. Allotment of specialisation will be done based on a combination of merit (as per the Semester 1 grades) and preference.
- A strong component of Bioinformatics in the form of hands-on practical equivalent to 3 credits has been included in Semesters 2 and 3. This is in addition to the theoretical orientation on Bioinformatics of 2 credits that will be provided in Semester 1.

Eligibility Criteria: A Bachelor's degree in Sciences/Engineering/Technology.

Selection Procedure

Applications are invited from candidates through advertisements published on TERI SAS website (www.terisas.ac.in) and also in leading national newspapers and social media platforms. Admission to the M.Sc. Biotechnology Programme is made on the basis of a combined entrance examination followed by an interview conducted by a faculty panel from the Department of Biotechnology, TERI SAS.

Pedagogical Tools

The classroom/online lectures are complemented with extensive laboratory practical, case studies, classroom discussions, and guest lectures by experts. During the fourth semester, students are involved in full-time research for their major project.

Programme Outline*

Year	Courses	Credits	Duration
First Year			
1st Semester	7 core courses of 2-7 credits each, and 2 core audit courses	21	15 weeks
2nd Semester	7 core courses of 2-7 credits and 1 course of 2 credits in the area of specialisation**	22	15 weeks
Second Year			
3rd Semester	4 core courses of 2-7 credits and 1 course of 2 credits in the area of specialisation**	16	15 weeks
4th Semester	Major project	16	15 weeks

*In addition to above, a minimum 4 credits equivalent of elective courses (audit only) listed below need to be completed during the Programme which may be taken in any semester when offered by the concerned Department and provided it doesn't conflict with any other course taken by the student. There is no upper limit for the number and credit equivalent for Elective courses.

**Specialisation specific practical component equivalent to 2 credits will be carried out under Biotechnology Laboratory- Part 2 (2nd Semester) and Biotechnology Laboratory- Part 3 (3rd Semester) each

SEMESTER 1

Course No.	Course title	Type	Number of Credits
BBP 101	Biotechnology Laboratory - Part 1	Core	7
NRE 101	Communication Skills and Technical Writing	Audit	2*
BBP 155	Principles of Genetic Engineering and Recombinant DNA Technology	Core	3
NRE 113	Applied Mathematics	Audit and bridge course	0*
BBP 158	Conceptual Foundations of Molecular Biology	Core	2
BBP 154	Principles of Biochemistry and Biophysics	Core	2
BBP 111	Bioanalytical Techniques	Core	3
BBP 121	Plant and Animal Biotechnology	Core	2
BBP 174	Bioinformatics and Computational Biology	Core	2

SEMESTER 2

Course No.	Course title	Type	Number of Credits
TBA	Conservation Genetics and Genomics	Core	2
BBP 102	Biotechnology Laboratory - Part 2	Core*	7
TBA	Introduction to Nanobiotechnology	Core	2
BBP 130	Molecular Microbiology and Immunology	Core	2
BBP 112	Statistics for The Life Sciences	Core	3
BBP 114	Molecular Cell Biology - From Genes to Communities	Core	2
TBA	Genome Organisation and Molecular Marker Techniques	Core	2
BBP 156	Molecular Plant Physiology and Metabolism	Specialisation (Plant Biotechnology)	2
TBA	Microbial Pathogenesis	Specialisation (Microbial Biotechnology)	2

*Specialisation specific practical component equivalent to 2 credits will be carried out under Biotechnology Laboratory- Part 2

SEMESTER 3

Course No.	Course title	Type	Number of Credits
BBP 103	Biotechnology Laboratory - Part 3	Core*	7
BBP 141	Bioethics, IPR and Regulations in Biotechnology	Core	3
TBA	Gene Expression Analysis and Transcriptomics	Core	2
TBA	Proteomics and Protein Engineering	Core	2
TBA	Functional Genomics in Plants	Specialisation (Plant Biotechnology)	2
TBA	Bioprocess Engineering and Environmental Biotechnology	Specialisation (Microbial Biotechnology)	2

*Specialisation specific practical component equivalent to 2 credits will be carried out under Biotechnology Laboratory- Part 3

ELECTIVE COURSES (AUDIT ONLY)

Course No.	Course title	Type	Number of Credits
NRE 131	Environmental Chemistry and Microbiology	Elective	3
NRE 165	Introduction to Sustainable Development	Elective	1
TBA	Nanomaterials: Introduction and Applications	Elective	2
NRE 123	Biodiversity Assessment and Conservation	Elective	3
NRE168	Food Security and Agriculture	Elective	3
NRE 112	Multivariate Data Analysis	Elective	3
NRE 151	Wildlife Conservation and Management	Elective	3

SEMESTER 4**Major Project**

During fourth semester, students work on a research problem/innovative concept broadly related to the programme using an appropriate methodology that may involve interdisciplinary approaches. This is to allow students the greatest scope to explore a wide range of career options. Students may undertake projects in collaboration with industrial, research, governmental, or non-governmental organizations. This project is guided by a TERI SAS faculty member(s) as well as external researcher(s) from TERI or other organizations. Study tours are undertaken to demonstrate the link between biotechnology and sustainable development.

Placement

A placement cell has been formed for exploring placement opportunities for students. The University facilitates placement of students in industry and suitable organizations, both for major project and final placements.

Department of Biotechnology

The Department of Biotechnology at TERI SAS offers both master's and doctoral programmes. The Department is committed to Biotechnology and Sustainable Development through establishment of a rigorous research programme. The aim is to cater to national requirements in basic science as well as energy, agriculture, healthcare and environmental sectors. The MSc programme in Plant Biotechnology was initiated with funding from the Department of Biotechnology, Government of India.

Students opting for master's or doctoral programme can expect an academically stimulating and interdisciplinary environment. Significant emphasis is given on laboratory work, original, critical and creative thinking, and research. Doctoral students may choose to carry out their research in the Department of Biotechnology within the following research areas namely; microbial pathogenesis, plant developmental biology, plant molecular breeding and structural & molecular biology.

About TERI School of Advanced Studies

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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 MSc degree programmes in Environmental Studies and Resource Management, Environmental and Resource Economics, Geoinformatics, Water Science and Governance, Climate Science and Policy, and Biotechnology; MBA programmes in Sustainability Management and Infrastructure Management; MTech programmes in Renewable Energy Engineering Management. Water Resources Engineering and Management and Urban Development Management.

The University offers two MA programmes, one in Public Policy and Sustainable Development, and the other in Sustainable Development Practice. The 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 University 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.

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Sponsored Candidates

Candidates working in the industry/government are encouraged to apply for the full-time MSc programmes. Up to five seats can be reserved in each programme for such candidates. All those who satisfy the minimum qualification requirement may be admitted to the programme after an interview. These candidates are required to submit, at the time of interview, a sponsorship certificate from their employer on a company letterhead, stating 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.

Placement

The students who complete MSc Climate Science and Policy programme possess the requisite confidence and skills to work as research officers, climate consultant and policy analysts in both public and private organizations. Besides this, opportunities in Research organizations and doctoral research can also be explored.

The University has a Placement Cell that helps students find suitable organizations to do their minor and major projects as well as get final placement.

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

- Shakti Sustainable Energy Foundation
- Institute of Rural Management Anand (IRMA)
- International Council for Local Environmental Initiatives (ICLEI)
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
- Federation of Indian Chambers of Commerce and Industry (FICCI)
- Vasudha Foundation
- KBS Certification Services Pvt. Ltd
- Indian Institute of Science (IISC)
- National Institute of Oceanography (NIO)
- Development Alternatives
- Department of Climate Change, Government of Gujarat
- Think Through Consulting
- CTran Consulting
- Ernst & young

Department of Energy and Environment

Given the global depletion of natural resources due to unsustainable consumption pathways societies have adopted, emerging economies like India are at crossroads to choose a trajectory which ensures inter-generational equity, inclusiveness and sustainability in their growth journey. The Department of Energy and Environment (DEE) at TSAS, aims to address the challenges relating to energy and environmental resource management through teaching, research and capacity building. The DEE creates a cadre of trained professionals committed to bring positive change through scientific, technological and policy innovations for strengthening resilience in communities. The DEE offers interdisciplinary post-graduate and doctoral programmes in renewable energy engineering & management, environmental studies & resource management, climate science & policy, and urban development & management to equip students with knowledge and skill sets to create solutions for sustainable development pathways in urban and rural habitats. The Department undertakes research in areas such as renewable energy, energy efficiency, air & water pollution, waste management, energy & environmental modelling, environment & health, sustainable consumption & production, sustainable agriculture, climate adaptation & mitigation, ecosystem management, and smart cities with focus on services, infrastructure & governance. The DEE encourages collaboration with industry, government, academic & research institutions, and multi-lateral organizations to deliver practice informed research and teaching.

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MSc Climate Science and Policy





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Climate Science and Policy

Science has established the existence of climate change as well as related anthropogenic activity as the leading cause. In this context, the need is to understand the science, the implications on various regions, resources, societies, and to study ways of mitigating the impacts as well as further emissions of GHGs. Role of policies and measures are equally important. Therefore, TERI School of Advanced Studies offers a programme leading to the award of M Sc in Climate Science and Policy. This is an intensive four-semester programme intended to imbue scientific and policy issues relevant to climate change. With this MSc Climate Science and Policy students will be equipped to take up job functions associated with local, national and international efforts to deal with climate change, one of the biggest environmental problems of this era.

The subject is so topical and need of the time— national action plan and Paris agreement on climate change driving action and policy formulation, businesses framing agendas keeping Climate change in focus; energy policies geared towards sustainable Energy use, state action plans being formulated, co-benefits and emissions reductions being internalized in energy planning decisions.



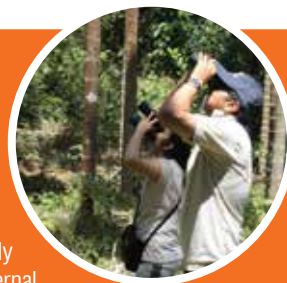
Programme Overview

Climate change is likely to be one of the most challenging issues mankind will face in the 21st century. To involve and educate larger number of people in this area, and to provide professionals with an improved understanding of the subject, the MSc (Climate Science and Policy) programme aims to impart knowledge on mitigation and adaptation strategies.

The Programme, offered by the Department of Energy and Environment, intends to create professional capability in assessing and managing the risks posed by climate change, and provide a sound base in the scientific arena as well as in the economic dimensions of climate change policy, mitigation, and adaptation strategies. Delivered through a diverse range of courses in the two years of study, the Master's degree will also provide a structured route to research and development in the area.

Programme Outline

The two years of the MSc programme are divided into four semesters. The first semester is reserved for compulsory courses, providing a broad overview of both the natural and the policy aspects of climate change. The next two semesters allow specialization on the important topics relevant to climate problem/research by offering elective courses along with 2 credit compulsory minor project. The final semester is fully dedicated to research-based project work which is supervised by external /internal faculty, project can be performed outside the campus or by attaching themselves with internal core faculty member of the university.



Programme Structure

Year	Courses	Credits total credits (70)	Duration*
First Year			
1 st Semester	8 core courses of 1-3 credits each	21	15 weeks
2 nd Semester	4 core courses and minimum 2 electives of 3 credits each	17	15 weeks
Summer	Minor Project	2	8 weeks
Second Year			
3 rd Semester	1 core and minimum 4 electives of 3-4 credits each	15	15 weeks
4 th Semester	Major Project	15	At the location of the project

*Bridge courses are also offered in different subjects to support students coming from cross disciplines.

Semester 1 [21credits]

Course title

Earth System Sciences
Basics of Climate Science
Environmental Law and Policy
Energy: Science, Technology and Policy
Impact of Climate Change
Environmental Statistics
Concepts and Theories of Development
Climate Lab
Technical Writing/Academic Writing

Semester 2 [17credits]

Course title

Research Methodology
Principles of Geoinformatics
Climate Change Vulnerability and Adaptation
Mitigation of Climate Change
Electives (can choose any two)
Spatio Temporal Data Analysis
Climate Change and Water
Introduction to Climate Modelling
Climate Change and Public Health
Open Elective
Environment Health and Risk Assessment
Climate Change and Law

Minor Project [2 credits] At the end of the second semester the students will carry out a Minor research project for two months leading to submission of the Minor Project thesis. The students may conduct this research project either at the University under the supervision of one of the faculty members or through an internship at any organization.

Semester 3 [15credits]

Core Course Seminar Course [3]

Electives (can choose any three from elective bouquet)
Climate Science and Technology
Ecosystem and Climate Change
Advanced Climate Modelling
Aerosol Science
Renewable Energy Technologies
Independent study
Geo-Informatics for Natural resource management
Glacier hydrology
Satellite Meteorology
Energy Systems Modelling
Climate Policy and Development
Climate Change and Disaster Risk Reduction
Economics of Climate Change
Food Security and Agriculture
Independent study
Public Health and Development: Issues and Methods
Accounting and Finance for Sustainability

Note: students can opt electives from other programs as well with the consultation with program coordinator.

Semester 4 [15credits]

Major Project: During the fourth semester students are assigned to major projects in industries and other organizations in areas relevant to the subjects they have learnt in the first three semesters. The student conducts this research under the supervision of a qualified researcher from the host organization. A faculty member from University acts an internal supervisor.

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 interview conducted by the University.

Pedagogical Tools

Apart from usual lectures and practical, the program prepares students to connect and apply their classroom learning to society. Field visits, role playing and experiential learning is part of the curriculum. Discussion on the recent development in the arena of climate change between the teacher and a small group of students occurs on a regular and frequent basis.

Eligibility

1. B.A. (Hons.) / B.Sc. (Hons.) in Economics with 50 % or more marks in aggregate (CGPA of 5.65).
OR
Bachelor degree in any other discipline with at least 60% marks in aggregate (CGPA of 6.75).
2. The applicant must have studied mathematics either at 10+2 level or at Bachelor's level, either as subsidiary or as honours.

Selection Process

Admission to the M.Sc. programmes is made on the basis of an online exam + written exam (subject specific) and interview conducted by the University. The marks secured in the online test is used for shortlisting. Shortlisted candidates are called for an interview.

Shortlisted applicants with Economics (Hons.) are expected to be well-versed in basic quantitative techniques, fundamentals of Microeconomics, Macroeconomics, and Statistics, current Economic Affairs, etc. Other students are expected to be familiar with quantitative techniques and current economic affairs. Candidates must demonstrate motivation for the programme through awareness of the vision and philosophy it represents. Competition in admission is fairly intense.

Placement

Desirous students are provided with placement assistance. Students have obtained placements Indian Statistical Institute, Reserve Bank Of India, Ministry of Finance, KPMG, Boston International, Development Alternatives, NCAER, International Labour Organisation, Greenpeace India, NIPFP, India Infrastructure among others. Some students have also opted for higher studies in academic institutions like Centre for Development Studies, Delhi School of Economics, Jawaharlal Nehru University, Vanderbilt University, University of California Riverside, Yale University, John Hopkins University, and University of Warwick among others.

Department of Policy Studies

The Department aims to promote academic excellence and develop the expertise to influence and contribute to public policy and decision making through teaching, research and training.

The department comprises of a multidisciplinary team of academicians and professionals drawn from fields from Economics, Management, Law, Sociology/Anthropology, Governance, Urban Management etc. The department offers M.A. in Public Policy and Sustainable Development, M.A. in Sustainable Development Practice, M.Sc. in Economics (with specialization in Environmental and Resource Economics), in addition to doctoral and several other short-term programmes targeted for fresh graduates and mid-career professionals.

For getting the detailed insights about the Doctoral programme regulations of the TERI SAS, kindly refer to page no. 57-69 of the student handbook: <https://www.terisas.ac.in/pdf/student-handbook.pdf>

About TERI School of Advanced Studies

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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 MSc degree programmes in Environmental Studies and Resource Management, Environmental and Resource Economics, Geoinformatics, Water Science and Governance, Climate Science and Policy, and Plant Biotechnology; MBA programmes in Infrastructure and in Business Sustainability; MTech programmes in Renewable Energy Engineering and Management, Water Science and Governance and Urban Development and Management; and LL.M. programmes in Environment & Natural Resources Law and in Infrastructure & Business Law.

The University offers two MA programmes, one in Public Policy and Sustainable Development, and the other in Sustainable Development Practice. The 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 University 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.

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M.Sc. (ECONOMICS)

(WITH SPECIALIZATION IN ENVIRONMENTAL AND RESOURCE ECONOMICS)





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.

M.Sc. Economics

The pressure on the non-human component of the ecosystem that we witness today can largely be attributed to the intensified pursuit of material consumption by a growing mass of population in the post-war period. Environment and Resource Economics attempts to recognize, understand, analyse, and evaluate the nature-society exchanges towards their implication on human well-being. Towards addressing this, it aims to design and implement effective policy instruments that assist in sustaining a given quality of life on earth and its enhancement over a longer time horizon.

The M.Sc. (Economics) at the TERI SAS is a two year programme targeted at students who are interested to specialize in this field. It involves rigorous grounding in standard economic theory and techniques and a simultaneous exposure to a wide variety of economic challenges due to the ecological / environmental / natural resource constraints. All students are expected to demonstrate their understanding and aptitude in this field through a scrupulously supervised Master's thesis.

Programme Specific Outcome

At the end of pursuing the M.Sc. (Economics) with specialization in Environment and Resource Economics program the students are expected to:

- Gain in-depth knowledge of the concepts and theories of Economics with core aspects of ecological, environmental, and natural resource economics.
- Receive hands-on experience in applying economic concepts, theories, and methods towards analysis, appraisal and evaluation of a wide range of economic problems and policies.
- Develop analytical and writing skills through preparation of critical review, literature survey, research proposal and Masters' Thesis.
- Develop and apply quantitative skills including numerical, statistical and econometric analysis using packages such as STATA and R.



Field Trip

Programme Structure

Year	Courses	Credits	Duration*
First Year			
Semester I	4 core courses of 4 credits	16	15 weeks
Semester II	4 core courses of 4 credits	16	15 weeks
Second Year			
Semester III	3 core course of 4 credits + Electives courses of 8 credits	20	15 weeks
Semester IV	Master's Thesis	20	15 weeks

Course Details

1 st Year		Credits 32
1 st Semester	2 nd Semester	
Probability and Statistics	Econometrics	
Mathematical Methods for Economics	Environment and Economic Development	
Macroeconomics	Growth Economics	
Microeconomics	Development Economics	

2 nd Year		Credits 40
3 rd Semester		
Methods of Research in Economics		
Environmental Economics		
Natural Resource Economics		
Elective Courses*		
4 th Semester		
Master's Thesis		

NOTE: Students are also allowed to fulfill their elective credit requirement wholly or partly with courses offered in other programmes, subject to the approval of the programme coordinator

***Elective courses offered in the M.Sc. Economics programme are as follows:**

Indian Agricultural Development: Contemporary Issues

Economics of Health and Environment

Trade, Development and Environment

Time Series and Regression Analysis

Advanced Econometrics

Master's Thesis

The Master's Thesis is mandatory, if not the most important component of the programme. It provides a hands-on opportunity to the students to apply economic concepts, theories, and methods towards analysis, appraisals, and evaluation of a wide range of environmental problems and policies so as to demonstrate their ability as research professionals. All students are supervised by one or more faculty members and every thesis is reviewed extensively by a panel of experts to ensure quality, originality and rigour.

The quality of the dissertations has been appreciated in various forums including national and international conferences. Some of these dissertations have also resulted in publications in peer-reviewed journals.



MSc (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 MSc 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:

- United Nations Development Programme (UNDP)
- World Wide Fund (WWF)
- Shakti Sustainable Energy Foundation
- Emergent Ventures
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ)
- Ashoka Trust for Research in Ecology and the Environment (ATREE)
- Ernst & Young
- HCL Foundation
- HCL Technologies
- IL&FS
- IORA Ecology
- International Water Management Institute (IWMI)
- National Institute of Hydrology (NIH)
- Tata Trust

Department of Energy and Environment

Given the global depletion of natural resources due to unsustainable consumption pathways societies have adopted, emerging economies like India are at crossroads to choose a trajectory which ensures inter-generational equity, inclusiveness and sustainability in their growth journey. The Department of Energy and Environment (DEE) at TSAS, aims to address the challenges relating to energy and environmental resource management through teaching, research and capacity building. The DEE creates a cadre of trained professionals committed to bring positive change through scientific, technological and policy innovations for strengthening resilience in communities. The DEE offers interdisciplinary post-graduate and doctoral programmes in renewable energy engineering & management, environmental studies & resource management, climate science & policy, and urban development & management to equip students with knowledge and skill sets to create solutions for sustainable development pathways in urban and rural habitats. The Department undertakes research in areas such as renewable energy, energy efficiency, air & water pollution, waste management, energy & environmental modelling, environment & health, sustainable consumption & production, sustainable agriculture, climate adaptation & mitigation, ecosystem management, and smart cities with focus on services, infrastructure & governance. The DEE encourages collaboration with industry, government, academic & research institutions, and multi-lateral organisations to deliver practice informed research and teaching.

About TERI School of Advanced Studies

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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 MSc degree programmes in Environmental Studies and Resource Management, Environmental and Resource Economics, Geoinformatics, Water Science and Governance, Climate Science and Policy, and Plant Biotechnology; MBA programmes in Infrastructure and in Business Sustainability; MTech programmes in Renewable Energy Engineering and Management, Water Science and Governance and Urban Development and Management; and LL.M. programmes in Environment & Natural Resources Law and in Infrastructure & Business Law.

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MSc

ENVIRONMENTAL STUDIES AND RESOURCE MANAGEMENT



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MSc (Environmental Studies and Resource Management)



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 programme

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 skillsets to deal with scientific and policy aspects related to environment and resource management.

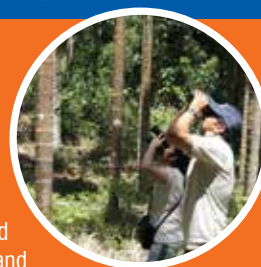
The theoretical concepts acquired through classroom session and seminars are complemented by the exposure to the real-world scenarios through various field visits during the two years programme. Students also get opportunities to be part of ongoing research projects in the university and enhance their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



MSc (Environmental Studies and Resource Management)

Programme Outline

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.



Course Details

Semester 1	
Course title	Course title
Ecology	Introduction to Sustainable Development
Environmental Chemistry and Microbiology	Environmental Monitoring Laboratory
Applied Mathematics	Environmental Geosciences
Technical Writing (Communication Skills and Technical Writing)	Environmental Statistics
	Environmental Law and Policy

Semester 2	
Course title (Core Courses)	Course title Elective Courses
Water Quality Management	Biodiversity Assessment and Conservation
Solid and Hazardous Waste Management	Hydrology
Air Quality Management	Principles of Geoinformatics
Research Methodology	Basic Course in Environmental and Resource Economics
	Environment Health and Risk Assessment

Minor Project

As part of summer internship, students undertake a minor project for 8 weeks with a relevant industry or organization. The minor project is supervised by a professional/researcher in the industry/organization. The project carries credits and is assessed and graded.

Semester 3	
Course title (Elective Courses)	Course title (Elective Courses)
Industrial Ecology	Seminar Course in Global Change
Wildlife Conservation and Management	Food Security and Agriculture
Environmental Management System	Multivariate Data Analysis
Geoinformatics for Resource Management	Groundwater Hydrology and Management

MSc (Environmental Studies and Resource Management)

Semester 3	
Environmental Economics	Water and Wastewater Treatment Processes and Design
Environmental Modelling	Integrated Watershed Management
Governance and Management of Natural Resources	Aerosol Science
Independent Study	Satellite meteorology
Integrated Impact Assessment	

Semester 4	
Major Project	



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.

About the Programme



With increasing energy crisis and global climate change issues, renewable energy has occupied a prominent position in industry and international relations in recent years. This has resulted in an increased demand for specialists and engineers in renewable energy with adequate knowledge of managing the renewable energy. There are very few institutions in India that offer structured programme to cover the diverse range of issues to meet this demand. The MTech (Renewable Energy Engineering and Management) programme at

TERI SAS are intended to fill this gap and provide the much needed human resource capacity in renewable energy technology and management. The programme, offered by the Department of Energy and Environment, is designed to train students not only in renewable energy technology and implementation but also in equally important synergetic areas of energy infrastructure, energy economics, and energy conservation. The programme will lead to a specialization in Renewable Energy Engineering and Management.

About TERI School of Advanced Studies

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MTech (Renewable Energy Engineering and Management)



Renewable Energy Engineering And Management

There is now a growing realization that India has to 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 the TERI SAS is attempting to do through all its programmes, for the benefit of not only Indian citizens but also students from other countries, who would pass through the portals of this institution. This University offers education supported by rigorous research.

Human existence, survival, and development are dependent on the quality and quantity of available natural resources. Human development is dependent on the efficient utilization of resources. This is true even in the case of fossil fuels. Even the slightest imbalance in resource extraction and conservation may lead to disasters, some of which humankind has already witnessed in the form of landslides, floods, water depletion, and, above all, climate change.

Energy is vital for improving the quality of human life of every nation. Growing scarcity of conventional fuels and their adverse ecological and environmental impacts have raised global interest in harnessing various renewable energy sources. Renewable energy technologies are emerging as the source of sustainable energy, which will be very important

for future energy supply strategies of the entire world. Availability of adequate manpower and appropriate resources is crucial for success in these endeavours. Providing renewable energy education at all the required levels in an efficient and effective manner is a challenging task. Adding 175 GW by the year 2022 to the total electricity generation through renewable energy sources is an ambitious target set by Government of India. This enforces that academia and industry must work together for adequate capacity building.

With an objective to provide complete education in the field of renewable energy focussed on technology and management, TERI SAS offers a fulltime programme, MTech (Renewable Energy Engineering and Management). This programme is structured to provide theoretical, practical, as well as professional knowledge to the students.

Placements

After the completion of MTech (Renewable Energy Engineering and Management) programme, students gain enough confidence to work as a research professional, policy analyst, or technical solution provider in the field of renewable energy in both public and private sector organizations.

The university has a fully functional placement cell that helps students find suitable organization as per their interest and specialization for their summer internship, major project, and final placement. Our potential recruiters have shown keen interest in hiring our students at different levels. Some of the organizations where the students have been successfully placed in the past are listed below:

- Suzlon Energy Limited
- Larsen & Toubro Power
- Idam Infrastructure
- GE (General Electric) Energy
- The Climate Group
- Shakti Sustainable Energy Foundation
- Emergent Ventures
- Faber Capital
- Infosys
- Tata Power
- Azure Power
- Inox Wind
- Enzen Global
- IT Power Consulting Private Limited

Programme Outline

The objective of the MTech (Renewable Energy Engineering and Management) programme is to prepare the students in theoretical, practical, as well as professional knowledge of renewable energy technologies and energy management. The programme is structured to enable them to deal with real-time problems of design and development for industrial applications and to pursue the academic research. The curriculum consists of core courses, elective courses, field visits, summer training, and major project spread over four semesters. The summer training at the end of second semester and major project during fourth semester is carried out at industry or institution outside the university.

Semester 1

- Fundamentals of thermal and electrical engineering
- Renewable energy resource characteristics
- Power system engineering
- Heat transfer
- Conventional energy and environmental implications
- Technical Writing (Communication skills and technical writing)
- Energy conservation and management
- Introduction to management techniques – I
- Energy Lab – I (Power system lab and Heat transfer lab)

Semester 2

Core Courses

- Field visits / exposure to RE plants
- Solar technologies
- Wind, small hydro and RE hybrid systems
- Biomass and other renewable technologies
- Renewable energy policy and regulations
- Optimization techniques for energy management and planning
- Renewable energy project management
- Energy lab – II

Elective Courses

- Fluid mechanics and wind turbine models
- Applied numerical methods

Semester 3

Core Courses

- Energy economics
- Energy simulation laboratory
- Summer internship/minor project

Elective Courses

- Introduction to management techniques – II
- Solar photovoltaic power generation
- Solar thermal power generation
- Wind power generation
- Biofuels and decentralized energy systems
- Building energy and green building
- Grid integration of renewable energy
- Energy audit and management
- Waste to energy
- Independent study
- Smart grid

Semester 4

Major Project

Students carry out 4 to 6 months of major project in any industry/organization outside the university under the joint supervision of a faculty member from TERI SAS and the host organization.

About Department of Energy and Environment

Given the global depletion of natural resources due to unsustainable consumption pathways societies have adopted, emerging economies like India are at crossroads to choose a trajectory which ensures inter-generational equity, inclusiveness and sustainability in their growth journey. The Department of Energy and Environment (DEE) at TSAS, aims to address the challenges relating to energy and environmental resource management through teaching, research and capacity building. The DEE creates a cadre of trained professionals committed to bring positive change through scientific, technological and policy innovations for strengthening resilience in communities. The DEE offers interdisciplinary post-graduate and doctoral programmes in renewable energy engineering & management, environmental studies & resource management, climate science & policy, and urban development & management to equip students with knowledge and skill sets to create solutions for sustainable development pathways in urban and rural habitats. The Department undertakes research in areas such as renewable energy, energy efficiency, air & water pollution, waste management, energy & environmental modelling, environment & health, sustainable consumption & production, sustainable agriculture, climate adaptation & mitigation, ecosystem management, and smart cities with focus on services, infrastructure & governance. The DEE encourages collaboration with industry, government, academic & research institutions, and multi-lateral organisations to deliver practice informed research and teaching.

Pedagogical Tools

Pedagogical tools consist of lectures, tutorials, and practical. We also take students to industry/field visits along with demonstration/experiments on in-house solar roof top power plant. Trainings on relevant state-of-the-art softwares are also part of the curriculum. A number of experts from industry are invited to deliver lectures on special topics.

Eligibility

A Bachelor's degree in any branch of engineering or MSc with a minimum cumulative grade point average of 6.75 on a 10-point scale or equivalent or 60% marks in aggregate.

Selection Process

Admissions will be based on a written test and interview. Preference will be given to GATE/NET qualified candidates.

Sponsored Candidates

Candidates working in the industry/ government organizations are encouraged to apply for the programme. An NOC (No Objection Certificate)/sponsorship letter from the employer will be required at the time of interview.



MTech (Urban Development Management)

Pedagogical Tools

The choice of pedagogical tools is based on the principle of 'active learning based on strong conceptual understanding'. These tools comprise classroom lectures, case studies, field visits, term papers, assignments, tutorials, lectures by practitioners and experts, seminars and discussion forums, and engagement with institutions/agencies working in urban development and related areas. In particular, case studies drawn from real-world urban development management challenges are designed and integrated into the curriculum.

Internships and Placements

A Placement Cell exists for exploring placement opportunities for students. The University facilitates placement of students in industry and suitable organizations, both for major projects and final placements.

Students undertake intensive internship with municipal corporations and parastatals and urban development consulting organizations.

Some of the key recruiters are Housing and Urban Development Corporation Ltd (HUDCO), National Institute of Urban Affairs (NIUA), WRI, IIT Delhi, NIUA, IPE Global, Tata Trusts, Centre for Economic and Social Studies, Centre for Environment Education, Consortium for DEWATS Dissemination (CDD) Society, Five M Energy Private Limited, GEM Enviro Management Pvt. Ltd, ICLEI South Asia, Indo-German Energy Forum (IGEF)—Deutsche, Gesellschaft für Internationale Zusammenarbeit (GIZ), GmbH, Intercontinental Consultants and Technocrats Pvt. Ltd, IPE Global, KPMG, Mehta & Associates, Nagrika Policy Research Foundation, NK Buildcon, SaciWATERS, Simplex Infrastructures Ltd, TERI, and Urban Management Center.

Department of Energy and Environment

Given the global depletion of natural resources due to unsustainable consumption pathways societies have adopted, emerging economies like India are at crossroads to choose a trajectory which ensures inter-generational equity, inclusiveness and sustainability in their growth journey. The Department of Energy and Environment (DEE) at TERI SAS, aims to address the challenges relating to energy and environmental resource management through teaching, research and capacity building. The DEE creates a cadre of trained professionals committed to bring positive change through scientific, technological and policy innovations for strengthening resilience in communities. The DEE offers interdisciplinary post-graduate and doctoral programmes in renewable energy engineering & management, environmental studies & resource management, climate science & policy, and urban development & management to equip students with knowledge and skill sets to create solutions for sustainable development pathways in urban and rural habitats. The Department undertakes research in areas such as renewable energy, energy efficiency, air & water pollution, waste management, energy & environmental modelling, environment & health, sustainable consumption & production, sustainable agriculture, climate adaptation & mitigation, ecosystem management, and smart cities with focus on services, infrastructure & governance. The DEE encourages collaboration with industry, government, academic & research institutions, and multi-lateral organisations to deliver practice informed research and teaching.

About TERI School of Advanced Studies

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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 MSc degree programmes in Environmental Studies and Resource Management, Environmental and Resource Economics, Geoinformatics, Water Science and Governance, Climate Science and Policy, and Biotechnology; MBA programmes in Infrastructure and in Business Sustainability; MTech programmes in Renewable Energy Engineering and Management, Water Resources Engineering and Management and Urban Development Management.

The University offers two MA programmes, one in Public Policy and Sustainable Development, and the other in Sustainable Development Practice. The 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 University 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.

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August 2021



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MTech (Urban Development Management)





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MTech (Urban Development Management)

Programme Overview

India is projected to add 300 million new urban residents by the year 2050 to the already existing large base of 377 million urban residents. The management of such a great magnitude of population growth in urban areas is a challenge which comprises of a constant struggle of coping up with the crumbling urban infrastructure, deficiencies in urban services, financial woes at municipal level, governance issues and an unprecedented impact on environment.

These complexities of urban growth and its management from the perspective of sustainable development requires a multi-disciplinary approach and expertise. There is a severe shortage of professionals having the required technical and managerial skills for such tasks and their demand is increasing rapidly. In addition, the existing urban institutions and governance of cities require extensive capacity building to provide for urban development which is sustainable, equitable and enhances the liveability of urban residents. India has moved to the paradigm of smart cities where the government is investing vast amount of financial resources into the urban infrastructure which makes the need for skilled manpower much more pertinent.

The MTech programme in Urban Development Management (UDM) at the TERI SAS was launched in July 2013 with all the above-mentioned requirements in perspective. Therefore, the programme focuses on sustainable urban development with a distinctive multi-disciplinary approach. It equips the students with cutting-edge technical skills like data modelling, managerial capabilities, and understanding of socio-economic, environmental, and legal issues associated with urban development and its three major components namely housing, infrastructure and environment.

The uniqueness of the programme is in promoting learning through research-based teaching, engagement of practitioners, and a diverse pedagogy ranging from classroom teaching, tutorials, discussions about various case studies, and most importantly field work. Apart from classroom teaching the programme also exposes students to urban local bodies, parastatals and urban development consultants through two intensive internships. Overall the programme helps in building capacities for understanding the real-world urban development management problems and identifying solutions for sustainable urban development.

Programme Structure

The two-year programme offers 73 credits through course work at the TERI SAS, 12 weeks of internship with municipal corporations and parastatals, and one full semester of internship with international organizations, consulting firms, financial institutions, research organizations, or urban local bodies.



Semester 1			
Course No.	Course title	Type	Number of credits
MEU 175	Introduction to GIS	Core	1
MEU 161	Theories of Urbanisation	Core	3
MEU 163	Sustainable Provision and Management of Urban Services	Core	3
MEU 123	Urban Finance	Core	3
MEU 167	Urban Development Policies and Programmes	Core	3
MEU 143	Urban Governance	Core	3
MEU 173	Stochastic Modelling	Core	4
NRE 165	Introduction to Sustainable Development	Core	1
NRE 101	Technical Writing (Communication Skills and Technical Writing)	Core	0

Semester 2			
Course No.	Course title	Type	Number of credits
MEU 154	Regeneration and City Competitiveness	Core	2
MEU 176	Research Methodology	Core	2
MEU 152	City and Regional Planning and Management	Core	3
MEU 172	Geoinformatics for Urban Development	Core	3
MEU 184	Real Estate Development	Core	3
MEU 121	Urban Ecology and Environment	Core	3
NRG 103	Project Management	Core	3

Semester 3			
Course No.	Course title	Type	Number of credits
MEU 183	Urban Systems Modelling	Core	2
MEU 168	Urban Housing Policy and Practice	Elective	2
MEU 112	Energy Efficient Buildings	Elective	2
MEU 144	Sustainable Urban Transport	Elective	2
MEU 162	Urban Disaster Management and Climate Resilient Cities	Elective	2
MEU 102	Major Project Part 1	Core	12

Semester 4			
Course No.	Course title	Type	Number of credits
MEU 104	Major Project Part 2	Core	15

Eligibility

A Bachelor's degree B.E./B. Tech in any branch/discipline, B. Arch., B. Planning, OR Masters or equivalent degree in Science.

Selection Process

Admissions will be based on an online test and interview.

Sponsored Candidates

Sponsored candidates from government departments, urban local bodies, parastatals (owned or controlled wholly or partly by the government), consultancy and real estate development firms, community-based organizations, and non-government organizations with BE/BTech in any branch/discipline, B Arch, B Planning, or Master's or equivalent degree in any discipline, and a minimum of three years of work experience in urban development or 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

Pedagogical Tools

The pedagogical tools comprise not just classroom lectures but also case studies, field visits, term papers, assignments and tutorials, guest lectures by practitioners and experts, seminars, and discussion forums. Group and individual projects involves analysis of diverse spatio-temporal datasets to demonstrate solution to specific issues of environment and social sciences.

Placement

The students who complete MSc Geoinformatics possess the requisite confidence and skills to work as GIS engineers, geo-database managers, and remote sensing specialists in both public and private organizations. It will also be a structured route to doctoral research work. The Placement Cell of TERI SAS is committed to aid placement of its students. Some of the organizations where our past students are currently working are given below:

- Indian Space Research Organisation (ISRO)/ Regional Remote Sensing Centre (RRSC)
- ESRI India (NIIT GIS Ltd)
- RMSI
- WWF-India
- Development Alternatives
- Yale School of Environment and Forestry
- Indian Agricultural Statistics Research Institute (IASRI)
- Tata Consultancy Services
- Pitney Bowes India
- Digital Globe

Department of Natural Resources

The Department of Natural Resources aims to create excellence, in the fields of Geoinformatics, conservation science, and resource management. It aspires to impart knowledge on geospatial technology that is widely used for management of environment and natural resources. The Department engages in developing an environment for implementing niche specialization, training, and research programmes that challenge and prepare students, faculty, and practitioners to become innovative, environmentally and socially responsible, and accountable leaders. The students and faculty constantly explore issues related to managing natural resources in partnership with local groups, state agencies, and national and international organizations. Research is the backbone of the Department where all the faculty members and doctoral scholars work collectively to create new knowledge, and communicate to policy-makers and to the general public.

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MSc (Geoinformatics)





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Geoinformatics

The new millennium has brought access to vast, continuous, and well-calibrated stream of spatial data on natural and socio-economic systems dynamics. The availability of data is increasing at exponential rate through technological advances in space-based and field based earth observations. It allows monitoring and management of environmental processes across a wide range of spatial and temporal scales. Full exploitation of the potentialities requires integration of such datasets in the geo-enabled data processing, mining, analysis, assimilation, interpretation, and visualization environment. It has great social and national relevance and can support preparing sustainable development strategies, enabling enterprises to manage business processes efficiently and bring geographical knowledge to citizens.

With time, we need a sound knowledge base in the state of art of Remote Sensing and GIS technology and their applications not just for bringing benefits of information system to country but also help in formulating efficient national development efforts in cross-cutting issues of environment, climate change, infrastructure development, and even in homeland security cooperation. Thus TERI SAS has been offering an MSc Geoinformatics since 2008 to enable budding professionals and researchers to address these pressing issues.



Programme Overview

Spatial and non-spatial datasets are crucial for studies on environmental and sustainable development planning. Also, the emerging need of geo-spatial technology has created an unprecedented demand of trained manpower, who can contribute to production and analysis of these datasets. In order to fulfil the need of such trained professionals, the MSc in Geoinformatics offers training in cutting-edge technology, which has the potential of providing consistent and timely information required for natural resource management.

The Programme, offered by the Department of Natural Resources, is intended to educate students and professionals about Remote sensing/Geographical information system/Global Navigation Satellite System and spatial modelling techniques. It also offers elective courses that help students in understanding the interdisciplinary applications of this leading technology. Students who complete this programme will possess the confidence and skills to attract a wide range of potential employers in both public and private organizations. This Master's degree provides a structured route to research and development in the area.

Programme Outline

The Programme comprises a set of core courses taught during the first and second semesters. This is followed by a minor project to be completed during the summer through internship. A set of advanced courses and elective courses, taught in the third semester allows students to gain in-depth knowledge in this field and specialize in a theme of interest. In the third semester, student is also required to take up an independent study. It encourages students to conduct independent research to get the feel of real-time research project experience. In the final semester, the student must carry out a semester long research project preferably in a company or organization outside the University to gain exposure to professional experience to real-life situations.



Semester 1

- Principles of Cartography
- Principles of Remote Sensing
- Principles of GIS and GNSS
- Environmental Statistics
- Fundamentals of Computers and Programming
- Applied Mathematics
- Technical Writing
- Fundamentals of Physics

Semester 2

- Photogrammetry
- Multivariate Data Analysis
- Spatial Data Modelling and its applications
- Digital Image Processing and information extraction
- Programming in Geoinformatics
- Law and Policy for Maps and Remote sensing
- Project Management
- Research methodology and thesis writing

Minor Project

As a part of summer internship, students undertake a minor project for 8 weeks with a relevant industry or organization. The minor project is supervised by a professional/researcher in that industry/organization. The project carries credits and is assessed and graded.

Semester 3

Core Courses

- Advances in remote sensing: Thermal, Hyperspectral, Microwave, LIDAR and UAV
- Advances in GIS and current trends
- Applications of Geoinformatics for Land Resources
- Applications of Geoinformatics for Water Resources
- Applications of Geoinformatics for Atmosphere

Elective Courses

- Geocomputation
- Integrated Watershed Management
- Wildlife Conservation and Management

In addition students can choose electives from other disciplines as well.

Semester 4 (Major Project)

In the final semester, students carry out a structured major project (MSc dissertation) in an industry or organization. The major project is carried out under the joint supervision of a professional/researcher in the industry and a faculty member at the TERI SAS. The project carries credits and is assessed and graded.

Eligibility Criteria

A Bachelor's degree in Science/Engineering/B. Arch/ Economics/Mathematics/Statistics/ Geology/Geography.

Selection Procedure

Admission to the M Sc programmes is made on the basis of an online test and interview conducted by the University. Applications are invited from the candidates by advertising the programmes in some leading newspapers every year. The online test one-hour long and consists of one paper with 100 multiple-choice questions.

The questions are divided into three sections:

- Proficiency in English
- Analytical reasoning
- Quantitative ability

There is negative marking for wrong answers. The written exam is followed by an interview.



About the Programme



The Coca-Cola Department of Regional Water Studies set up in 2014 with the support of The Coca-Cola Foundation is engaged in capacity building to deal with a multitude of issues in water and related sectors. The M.Tech (Water Resources Engineering and Management) and M.Sc (Water Science and Governance) programs of the department have been designed

with an approach to look at water-related issues in a comprehensive and holistic manner transcending technical, social, economic, political and legal, perspectives. The unique blend of coursework, field trips and internships equips the students with the practical know-how to deal successfully with work-related challenges.

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TERI SAS offers Doctoral Programme as well as MSc degree programmes in Environmental Studies and Resource Management, Environmental and Resource Economics, Geoinformatics, Water Science and Governance, Climate Science and Policy, and Plant Biotechnology; MBA programmes in Infrastructure and in Business Sustainability; MTech programmes in Renewable Energy Engineering and Management, Water Science and Governance and Urban Development and Management; and LL.M. programmes in Environment & Natural Resources Law and in Infrastructure & Business Law.

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A NEW ERA OF CAREER OPPORTUNITIES



M.Tech in Water Resources Engineering & Management
M.Sc in Water Science and Governance

Career opportunities In Water Sector

The United Nations World Water Development Report, 2016, estimates that over one billion jobs - representing more than 40% of the world's total active workforce - are heavily water-dependent. Such jobs are found in agriculture, forestry, inland fisheries, mining and resource extraction, power generation, water supply, sanitation, manufacturing, and construction and transportation industries. The water management linked skills in India have traditionally been taught in institutions offering Civil Engineering and allied post-graduate programs where students are trained to view water predominantly from a technical lens. However, in the present scenario when water issues are multi-dimensional, employers need water professionals that have collective skill sets- technical, institutional, economic and social, to tackle the challenges in a holistic manner.

The Department of Regional Water Studies at TERI SAS offers a multi-track program on Water Science and Governance which has a sound blend of theory and practical sessions. The format of the entire program is flexible and caters to fresh graduates as well as working professionals who desire to upgrade their skills/qualifications. The taught courses focus on cross cutting issues of water resources and encompass science, engineering, legal, socio-economic and institutional dimensions. The programme is aimed for students from SAARC nations and Africa.

“Thus, a student undergoing these programmes is sure to have a first mover advantage just as people who opted for learning computers in the early 90s had”.

Placements

The water market is on the brink of change, and the push for greater water security and sustainability has increased over the past decade. Emerging markets are investing heavily in water sector and companies are realizing that sustainable water use is not only good for the environment - it's also good for their bottom line. The students of this programme are moulded and equipped to take up jobs in corporate houses, water industry, government departments, donor agencies, NGOs and research institutions, or join the band of entrepreneurs passionately working for the cause of water availability, affordability and accessibility. Thus, a student undergoing these programmes is sure to have a first mover advantage just as people who opted for learning computers in the early 90s had.

Programme Outline

M.Tech (Water Resources Engineering and Management)

The M. Tech program integrates engineering and technological principles with socio-economic perspectives. Interdisciplinary in its scope and objectives, the program aims to train young graduates and professionals into water leaders who can provide with multi-faceted perspectives on water related issues rather than just technical ones, thereby contributing to development of both technical insights and policy prescriptions along with effective implementation. The major focus topics covered in this program include:

- Design of Water Supply and Sanitation Systems,
- Industrial Pollution Control,
- Optimization Techniques for Water Management,
- Advanced Hydraulics,
- Advanced Geoinformatics for Water Resources,
- Applied Hydrology and Meteorology,
- Water Quality Monitoring Methods, Analysis and Applications

apart from key management aspects like

- Water Planning and Management,
- Water Security and Conflict Management,
- Gender, Rights and Equity Perspective for Sustainable Water Management,
- Irrigation Water and Drainage Management

M.Sc (Water Science and Governance)

The M.Sc. program is an interdisciplinary program with special emphasis on development of social, economic, institutional and governance perspectives. The objective of the programme is to create water professionals equipped to examine water issues in a trans-boundary and cross-cultural framework transcending environmental, social, economic and legal discourses. The major focus topics covered in this program include:

- Aquatic Eco-System Management,
- Water Audit and Demand Management
- Industrial Pollution Control
- Integrated Watershed and River Basin Management

apart from key socio-economic and governance aspects like

- Water Resource Economics
- Water Supply and Sanitation
- Water Law
- Integrated Impact Assessment
- Water Resources Institutions and Governance
- Gender, Rights and Equity Perspective for Sustainable Water Management

Eligibility Criteria

Our Programmes encourage fresh graduates as well as working professionals from diverse background. Depending upon the eligibility of a candidate and his/her interest, a student can choose a two year M.Tech/M.Sc. degree or can exit after the first semester with a PG certificate or can exit after one year with a PG Diploma.

M.Tech in Water Resources Engineering & Management

Graduate or equivalent from any branch of Engineering or Postgraduate or equivalent in Environmental Science, Physics, Mathematics, Statistics, Chemistry, Geology, Atmospheric Science, Economics, Geography, Agricultural Science.

M.Sc Water Science and Governance

Graduate or equivalent from any branch of Engineering, Environmental Science, Physics, Mathematics, Statistics, Chemistry, Geology, Atmospheric Science, Economics, Geography, Zoology, Botany, Anthropology, Agricultural Science.

