1.1.1 QlM	***Curricula developed and implemented have relevance to the local, national, regional and global developmental needs, which is reflected in the Programme outcomes (POs), Programme Specific Outcomes(PSOs) and Course Outcomes(COs) of the Programmes offered by the University*** Write description in a maximum of 500 words **File Description** • Upload Additional information • Provide Link for Additional information	**20**

TEXT

Following its motto, 'Knowledge for Sustainable Development', and areas of focus of its sponsoring society, TERI (The Energy and Resources Institute), TERI SAS pursues, promotes and propagates research led and socially relevant education in the fields of energy, environment, natural resources and sustainability through teaching, research, publication, outreach and extension.

The teaching activities are spread over 14 Masters and 6 Ph.D. programmes. The programmes are interdisciplinarity in their outlook and designed to engage with cross cutting issues around different aspects of sustainability. Many courses addresses multiple Sustainable Development Goals and Targets, different national policies & missions and national & international schemes, and some does it quite directly.

The M.Sc. (Plant Biotechnology) addresses the objectives under National Mission for Sustainable Agriculture, goals of Swachh Bharat Mission. Some of the courses of M.Tech. (Water Resource Engineering and Management) and M.Sc. (Water Science and Governance) address SDGs on clean water and sanitation, sustainable cities and communities and climate action, besides Atal Bhujal Yojana, Jal Jeevan Mission, Jal Shakti Abhiyan, National Clean Ganga Mission, National Hydrology Project, National Health Mission, National Water Mission, Swachh Bharat Mission-Grameen and Urban.

M.A. (Sustainable Development Practice) and M.A. (Public Policy and Sustainable Development) cover the issues related to eradicating poverty & hunger, promoting food security and improved nutrition through sustainable agriculture, ensure healthy lives, equitable quality education, gender equality & empowering women, sustainable management of water & sanitation, ensuring energy access to all, sustainable economic growth and productive employment, resilient infrastructure & sustainable industrialization, action for climate change and its impacts by incorporating the respective SDGs in the curriculum.

The M.Sc. (Geoinformatics) curriculum includes technologies with the capability to provide consistent and timely information for natural resource management. The courses directly or indirectly deal with SDGs and issues related to Climate action, industry, innovation & infrastructure, life of land, partnership of goals and many more.

The M.B.A. (Infrastructure Management) and M.B.A. (Sustainability Management) programmes cover matters like good health & well being, decent work & economic growth, justice & strong institutions, climate action – among the SDGs—and sustainable finance scheme, AMRUT, Smart Cities Mission, Digital India, PMJDY, FAME-II among the national missions and schemes.

The curriculum in M.Tech. (Renewable Energy Engineering and Management) address energy system planning, energy conservation, renewable energy, clean & affordable energy, energy access & energy security—and addressing many SDGs in the process—and National Solar Mission, National Electricity Policy, PMUDAY, ECBCs, PMKUSUM, UJALA Scheme, Electricity Act and other such.

Courses in the M.Sc. (Economics) offer balanced exposure to conventional economic theories—through courses on growth economics and development economics—and techniques and application of concepts—through courses in econometrics and statistics—to address economic and societal challenges due to ecological/ environmental/ natural resource constraints. It addresses inclusive wealth index, system of environment and economic accounting, numerous SDGs and conflicts between them through its curriculum.

M.Tech. (Urban Development Management) orients students towards variety of national urban development policies and programmes covering National Urban Policy Framework, Smart City Mission, AMRUT, National Urban Housing and Habitat Policy, National Urban Sanitation Policy, National Policy on Urban Street Vendors

and many more such initiatives. Specific courses cover legislations like Real Estate Regulatory Authority legislation, FDI policies in construction sector, UN Habitat Agenda, Affordable Housing policies and Service Level Benchmarking.

Courses in M.Sc. (Environmental Studies and Resource Management) and M.Sc. (Climate Science and Policy) are designed and developed to promote the learning around National Mission for Sustaining the Himalayan Ecosystem, National Skill Development Mission, National Clean Air Programme, National Mission on Education through Information and Communication Technology among others along with corresponding SDGs.

Annexure 2.6.1.A lists all PSOs and Annexure 2.6.1.B. lists all COs. Annexure 1.1.1.A. reproduces Annexure 2.6.1.A. for ease of reference.

1.1.1.A.

Number of programs offered year wise during last five years

Sr. No.	Program Code	Program Name	Year of introduction	Year of offering	Program specific outcomes
1	02020	M Sc (Environmental Science and Resource Management)	2012	2016, 2017, 2018, 2019, 2020	The graduates of the M.Sc. (ESRM) programme would be able to, • Attain knowledge of concepts and methods for a universal understanding of the environment and natural resources and its sustainable use for environmental problem solving • Learn various environmental and policy tools and techniques with cross sectoral overview to effectively converse with all the stakeholders (policymakers, scientists and communities) • Understand the transnational character of environmental problems and ways of addressing them, including interactions between humans and environment across scales and sectors • Reveal aptitude in quantitative methods, qualitative analysis, critical thinking, and written and oral communication needed to conduct work as interdisciplinary scholars and practitioners
2	02013	M Sc (Climate Science & Policy)	2010	2016, 2017, 2018, 2019, 2020	The graduates of the M.Sc. (CSP) programme would be able to, • Gain in-depth knowledge of the scientific foundations of climate change, its impact on social and economic systems, and relevant policy debates and tools. • Receive hands-on experience in applying scientific, methodological, and policy tools, concepts, and data sources towards analysis, appraisal, evaluation, and mitigation of climate-related challenges at different levels of governance and across sectors • Communicate effectively with scientists and policymakers on the subject • Design appropriate methodologies and institutional arrangements for science based climate change governance. • Develop approaches for context specific decision making relevant for adaptation to and mitigation of climate change.
3	02004	M Sc (Geoinformatics)	2008	2016, 2017, 2018, 2019, 2020	• Extensive hands-on expertise: The programme provides extensive hands-on through courses and research projects relevant to the Geoinformatics domain. • Exposure to state-of-the art tools and technologies: This programme provides exposure to cutting-edge tools and technologies such as latest remote sensing technology (e.g.,UAV), programming (e.g.,Python and R), database management like Oracle and MySQL, and other standard COTS and FOSS relevant to the field and other cross-cutting domains. • Conceptual clarity: The programme provides conceptual clarity of the fundamentals to face the continuous technological advancements in the field of Geoinformatics. • Capacity building: Capacity building of the students to face the technological advancements in the field of Geoinformatics and demonstrate

					confidence in undertaking new (unfamiliar) analysis. • Leadership skills: This programme provides leadership skills in their respective field as well as in other cross-cutting domains.
4	02016	M Sc (Economics)	2010	2016, 2017, 2018, 2019, 2020	At the end of pursuing the MSc (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.
5	02005	M Sc (Plant Biotechnology)	2008	2016, 2017, 2018, 2019, 2020	•A research-oriented learning that develops analytical and integrative problem-solving approaches. •Specialized knowledge and practical training to address contemporary problems in academia and industry. • Awareness of ethical issues and regulatory considerations while addressing societal needs for sustainability.
6	02003	M Sc (Water Science & Governance)	2014	2016, 2017, 2018, 2019, 2020	• Gain interdisciplinary understanding of the contemporary water related challenges through experiential learning • Appreciate the social economic, technical, political, and environmental aspects of water management • Get hands on training to develop key transferable skills to be able to execute independent projects
7	03006	MBA (Infrastructure Management)	2007	2016, 2017, 2018, 2019, 2020	At the end of pursuing the MBA (Infrastructure Management) program the students are expected to: • Gain in-depth knowledge of the functional areas of Infrastructure Management domain • Acquire expertise to apply management techniques in the infrastructure sector to lead in a resource-sensitive world amid increasing competition and sustainability concerns • Develop key analytical skills in identification and resolution of issues pertaining to the regulation and management of infrastructure regime • Evolve sustainable domain perspectives for the purpose of planning, implementation, and control of businesses in the infrastructure sector • Develop and apply skills of quantitative and qualitative research for practical evaluation of major policy issues through industry exposures and field visits

					• Accustom to the global perspective towards sustainable business practices in the area of Infrastructure Management
8	03014	MBA (Sustainability Management)	2010	2016, 2017, 2018, 2019, 2020	At the end of pursuing the MBA (Sustainability Management) program the students are expected achieve the following - • Ability to formulate, evaluate and implement crucial business strategies with core facets of Finance, Marketing and Sustainability; • Competence to make ethical business decisions with social and environmental consciousness; • Leadership and teamwork mastery of problem solving in a resource-sensitive world amid increasing competition; • Training in tools, techniques, and frameworks for developing critical thinking & communication skills; • Develop expertise to recognize the need, challenges and ways to approach for sustainable businesses through resource optimization without compromising on profitability and competitiveness; • Gain hands-on experience in applying business, economic, management, legal and sustainability concepts & practice along training in quantitative and qualitative methods of research.
9	05007	MA (Public Policy & Sustainable Development)	2005	2016, 2017, 2018, 2019, 2020	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
10	05018	MA (Sustainable Development Practice)	2009	2016, 2017, 2018, 2019, 2020	By the end of MA 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
11	06015	M.Tech (Renewable Energy Engineering & Management)	2010	2016, 2017, 2018, 2019, 2020	• Undertake design, analysis, resource assessment and management of RE technologies • Apply knowledge of mathematics, economics and engineering for comparative technology evaluation • Analyse and design energy policies • Prepare comprehensive technical reports and technical notes •Apply optimization methods to energy system planning and operation •Carry out feasibility analysis and due diligence of RE opportunities •Carry out energy audit for an entity and identify appropriate energy efficient alternatives
12	06022	M.Tech (Urban Development & Management)	2011	2016, 2017, 2018, 2019, 2020	The graduates of the MTech (UDM) programme would be able to, • Explore, understand and articulate the issues of urban development in the context of developing countries using multidisciplinary frameworks. • Collect city specific information using appropriate qualitative and quantitative methods through fieldwork and stakeholder participation. • Utilise statistical, financial and geoinformation tools for analysing urban development issues, assess available solutions and provide innovative solutions. • Work with diverse teams within and beyond government functionaries towards creating relevant policy recommendations and solutions to pertinent urban issues.
13	06031	M.Tech (Water Resource Engineering & Management)	2014	2016, 2017, 2018, 2019, 2020	• Provide technological solutions to water resources related problems • Ability to benchmark social and economic performance of interventions in water sector. • Capability to simulate alternative “What-if” scenarios and identify appropriate interventions using modeling and geo-spatial technology
14	04030	LLM	2016	2016, 2017, 2018, 2019, 2020	
15	01002	Ph.D in Natural Resource Management	2002	2016, 2017, 2018, 2019, 2020	At the successful completion of the Ph.D. programme, the researchers should be able to: • Have an in-depth understanding and knowledge of the nuances of the problem being researched and the literature surrounding relevant to the topic. • Explore frontiers of fundamental, applied and interdisciplinary research as decided by the chosen field of study • Understand and apply scientific methods, tools and techniques to carry out high quality research work • Independently plan and execute original

					research with high ethical standards • Develop suitable communication and interpersonal skills, critical thinking and problem-solving attitude as appropriate for a Ph.D. student
16	01008	Ph.D in Energy & Environment	2002	2016, 2017, 2018, 2019, 2020	After the completion, Ph.D. students should be able to: • Develop an understanding of research, philosophy and domain knowledge for addressing current research problems and identifying emergent themes in the area of specialization. • Critically apply concepts, methods, and learning to address underlying queries in their discipline of research as well as imbibe the spirit of inquiry and solution-oriented ideas. • Engage in the research of impact in the fundamental discipline or an interdisciplinary research. • Understand and apply scientific methods, tools, and techniques to carry out high quality research work. • To have intellectual independence, creative scholarship and ingenuity in tackling and solving research problems. • Cultivate and demonstrate skills in articulating their research outputs in scientific writing, oral presentation and publishing the results of their research in conferences and journals of repute, maintaining high ethical standards in research and academia. • Demonstrate their skills and knowledge at conceptualizing, planning and executing research independently and/or in team that extends the existing horizons of interdisciplinary research/thematic
17	01014	Ph.D in Business Sustainability	2002	2016, 2017, 2018, 2019, 2020	At the end of their PhD course, students should be able to: • Explore newer frontiers of interdisciplinary teaching & research • Make significant contribution to the corporate world • Comprehend scientific methods and techniques of doctoral research • Develop effective collaboration with allied research partners & industries • Carry out individual research work with wider societal impact • Integrate ethical values in original scientific research • Independent planning and implementation of research
18	01010	Ph.D in Bioresources & Biotechnology	2002	2016, 2017, 2018, 2019, 2020	At the end of Ph.D. programme, the students should be able to: • Have an in-depth understanding of the nuances of the problem being researched and the literature surrounding it • Explore frontiers of fundamental, applied and interdisciplinary research as decided by the chosen field of study

					• Understand and apply scientific methods, tools and techniques to carry out high quality research work • Independently plan and execute original research with high ethical standards • Develop suitable communication and interpersonal skills, critical thinking and problem-solving attitude as appropriate for a Ph.D. student
19	01025	Ph.D in Water Science & Governance	2014	2016, 2017, 2018, 2019, 2020	At the successful completion of the Ph.D. programme, the researchers should be able to: • Have an in-depth understanding and knowledge of the nuances of the problem being researched and the literature surrounding relevant to the topic. • Explore frontiers of fundamental, applied and interdisciplinary research as decided by the chosen field of study • Understand and apply scientific methods, tools and techniques to carry out high quality research work • Independently plan and execute original research with high ethical standards • Develop suitable communication and interpersonal skills, critical thinking and problem-solving attitude as appropriate for a Ph.D. student
20	01012	Ph.D in Policy Studies	2002	2016, 2017, 2018, 2019, 2020	At the completion of the PhD programme, the scholar should be able to: • Explore frontiers of fundamental, applied and interdisciplinary research and teaching under the broad domain of policy and sustainability studies. • Understand and apply scientific methods and techniques to carry out high quality/rigorous research work. • Independently plan, implement original research with high ethical standards. • Develop critical thinking and analytical skills. • Develop effective interpersonal and research communication skills with the ability to communicate to different stakeholders within their fields.
21	01032	Ph.D in Legal Studies	2016	2018, 2019, 2020	At the end of the Ph.D. programme, the students should be able to: • Have an in-depth understanding of the nuances of the problem being researched and the literature surrounding it • Explore frontiers of fundamental, applied, and interdisciplinary research as decided by the chosen field of study • Understand and apply scientific methods, tools and techniques to carry out high quality research work • Independently plan and execute original research with high ethical standards • Develop suitable communication and interpersonal skills, critical thinking and problem-solving attitude as appropriate for a Ph.D. student

22	05007A	PG diploma (Public Policy & Sustainable Development)	2014	2016, 2017, 2018, 2019, 2020	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
23	04025	PG Diploma (Water Science & Governance)	2014	2016, 2017, 2018, 2019, 2020	The PG Diploma programme in WSG has the following outcomes: • Develop an understanding of science, socio-economic, governance and institutional dimensions involved in water resources management. • Develop basic understanding of quantitative and qualitative statistical tools and GIS tools used for analysing water resources and associated issues. • Knowledge to estimate water use in agriculture, households, and industry and perform water audits. • Skill to conduct baseline study prior to implementing water-based projects.
24	04017	PG diploma in Renewable Energy	2009	2016, 2017, 2018	• Assess the potential of harnessing renewable energy resources • Identify appropriate renewable energy technology based on technical and financial parameters • Understand design and development stages involved in a renewable energy project • Analyze sectoral policies and regulations related to the renewable energy sector • Undertake techno-commercial analysis of a renewable energy project using software simulation tools
25	07017	Advanced PG diploma in Renewable Energy	2009	2016, 2017, 2018	• Assess the potential of harnessing renewable energy resources • Identify appropriate renewable energy technology based on technical and financial parameters • Understand design and development stages involved in a renewable energy project • Analyze sectoral policies and regulations related to the renewable energy sector • Undertake techno-commercial analysis of a renewable energy project using software simulation tools
26	13029	Certificate (Water Science	2014	2016, 2017,	The PG certificate course in WSG has the following outcomes:

		& Governance)		2018, 2019	• Develop an understanding of science, socio-economic, governance and institutional dimensions involved in water resources management. • Develop basic understanding of quantitative statistical and GIS tool used for analysing water resources and associated issues.

* 2016 - Academic Year 2016-17