BHARATI VIDYAPEETH

(DEEMED TO BE UNIVERSITY)

INSTITUTE OF ENVIRONMENT EDUCATION AND RESEARCH, PUNE

Faculty of Science

Course Outcomes

M.Sc (Environment Science and Technology)

effective from 2020-2021

BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY, PUNE

Course Outcomes

MASTER OF SCIENCE

M.Sc. in ENVIRONMENT SCIENCE AND TECHNOLOGY

(UNDER CHOICE BASED CREDIT SYSTEM)

Effective from the Academic Year 2019-2020

Under

FACULTY OF SCIENCE

The Bharati Vidyapeeth (Deemed to be) University is a multidisciplnary, multicampus University having 32 institutions imparting quality education in varius disciplines. All programs of the Univeristy are approved by the University Grants Commission (UGC) and the respective statutory councils. The University has been re accredited for the thrird time with an 'A+' grade by the National Assessment and Accreditation Council (NAAC) in 2017. The UGC has accorded the 12B status (UGC Act 1956) to the University. The Ministry of Human Resource Development, Government of India has awarded 'A' category to the University in 2012 based on several parameters that include innovative programs, research and infrastructure facilities. The University has mainained its rank in the top hundred universities of India consistenly since 2012 and is presently ranked at 63rd position by the National Institution Ranking Framework (NIRF) by the UGC for the year 2020.

The University is a member of the Association of Indian Universities (AIU) and alos the International Association of Universities.

The Institute of Environment Education and Research of the Bharati Vidyapeeth (Deemed to be) University, is a constituent unit of the Uiversity established in 1993. The Institute is approved by the UGC to conduct post graduate courses in Environment Science, Geoinformatics and Wildlife Conservation Action as well as Docotral programs in Environment Science and Geoinformatics. The Institute has excellent infrastructre and competent faculty who are nationally and internationally known. Through its collaborations with several international universities the Institute offers international student and faculty exchange programs as well as international internships.

BHARATI VIDYAPEETH (DEEMED TO BE) UNIVERSITY, PUNE
FACULTY OF SCIENCE

Course Outcomes of Master of Science
M.Sc. in Environment Science and Technology
(Under Choice Based Credit System)
effective from 2019-2020

INTRODUCTION

The course has a transdisciplinary approach that integrates the science of environmental studies with technical and social issues and includes courses on ecosystem studies, biodiversity conservation, natural resource management, geoinformatics, water and waste water engineering, green technology, environmental lab techniques, sustainable development, urban sustainability and environment and health. The course builds on a candidate's knowledge of chemistry, biology, statistics, computers, engineering, sociology and economics to develop a deeper understanding of applications in the environmental sector. It includes the cognitive aspects and technological skills necessary to further sustainable form of development and rational resource-use management. It trains the candidate in advanced laboratory skills required for pollution monitoring and abatement, to undertake environmental impact assessment(EIA), ecodevelopment, ecorestoration, implement green technology, assess biodiversity, etc. The program addresses environment management from the technical, social as well as the policy aspect to counter the effects of degradation of the ecosystem.

OUTCOMES

At the end of the course, each student will have acquired the following attributes;

1. Disciplinary Knowledge and Interdisciplinarity

Demonstrate disciplinary knowledge from ecological, social, physical, economic, legal fields; Appreciate the ethical, cross cultural and historical context of environmental issues and the links between human and natural systems; Apply systems concepts and methodologies to analyze and understand interactions between social and environmental processes; Demonstrate appropriate and advanced technical skills in investigating, analyzing and synthesizing information, problems, concepts and theories within environment science.

2. Quantitative Competence

Understand essential mathematical and statistical approaches used to analyse environmental data; Accurately comprehend and draw appropriate inferences from numeric data, statistical

analysis and predictive models; Use state-of-the-art software, hardware and analytical techniques to solve problems in environment science and management

3. Critical Thinking

Demonstrate the capability to apply analytic thought to a body of knowledge; analyse and evaluate evidence, arguments, claims and beliefs on the basis of empirical evidence; formulate coherent arguments; critically evaluate practices, policies and theories following the scientific approach to knowledge development.

4. Problem Solving

Identify environmental problems, evaluate problem solving strategies and develop science based solutions; understand the need to integrate relevant social sciences (eg: environmental planning, law, economics) in environmental problem solving; Use acquired knowledge, skills and ingenuity to solve complex problems.

5 . Communication

Clearly communicate complex analyses, interpretations and significance effectively in writing and orally to varied audiences ranging from scientific to policy and the general public; be proficient in contemporary communication tools

6. Multicultural competence

Possess knowledge of the values and beliefs of multiple cultures and a global perspective; capability to effectively engage in a multicultural society and interact respectfully with diverse groups.

7. Moral and ethical awareness/reasoning

Identify ethical issues related to one's work; formulate a position/argument about an ethical issue from multiple perspectives and use ethical practices in their life and career; avoid unethical behavior; adopting objective, unbiased and truthful actions in all aspects of work.

5. Collaboration and Team work

Collaborate in teams with peers and mentors and work with others in diverse group settings, developing flexibility and leadership skills.

6. Lifelong learning

Ability to acquire knowledge and skills, including 'learning how to learn' for meeting changing demands of work place.

SCOPE

Contrary to the popular belief that 'green jobs' exist in specific sectors, green jobs today are found in all sectors as a large number of industries and organizations have today committed or make commitments to sustainability. These jobs have emerged in favor of greener, cleaner and more sustainable occupations. The UNEP Report on green jobs shows that green jobs are being generated in some sectors and economies largely resulting from the need to meet emission reduction targets. This has led to changing patterns of investment flows.

Employment opportunities exist in diverse fields such as in government agencies, industries, manufacturing, energy, food, recycling, agriculture, business, policy, construction, forestry and conservation sectors all of which offer immense opportunities to environmental professionals.

The pace of green job creation is likely to accelerate in the years ahead. A global transition to a low-carbon and sustainable economy has already created a large numbers of green jobs across many sectors of the economy, and has indeed become an engine of development.

Climate deals are also supporting payments to countries for managing forests for their carbon absorption potential opening up new opportunities for green jobs in the forestry sector of the tropics. An agreement by 2010 under the Convention on Biological Diversity on Access and Benefit Sharing of Genetic Resources has triggered similar North-South funding flows with job implications in conservation and natural resource management.

The job profiles in green careers are as diverse as the problems they address. A degree in Environment Sciences definitely sets the pace in building a green career. One can be a researcher, a designer, a planner, an operator of pollution control facilities, a professor, a government regulatory agency official, a manager of programs, or be involved in professional society work. Potential employers can be private consulting engineering firms, universities, private research firms, testing laboratories, government agencies at different levels, or all types of major corporations and private businesses.

ELIGIBILITY FOR ADMISSION TO THE COURSE

Candidates satisfying the following criteria are eligible to apply for the M.Sc. Environment Science and Technology course.

a. The candidate should have passed the Bachelors degree in any Science subject such as Botany, Zoology, Chemistry, Physics, Statistics, Geography, Geology, Geography, Life Sciences, Environment Sciences, Microbiology, Biotechnology, Fisheries, Marine Biology, Horticulture, Agriculture, Computer Science, Data Science, Veterinary Science, Health Sciences or

b. any branch of Engineering

c. any relevant Social Science subjects and Management Studies

d. The candidate should have secured at least 50% or 45 % aggregate marks for open and SC/ST/OBC category respectively at the graduate level.

DURATION OF THE COURSE

The duration of this course is two years consisting of four semesters. The medium of instructions and examination will be only English.