1.3.1:

Details of University syllabus containing integration of cross cutting issues relevant to Environment & sustainability &, Human Values & Professional ethics into the curriculum.

S.No.	Description of critical issues	Subject & Subject Code of the course wherein this issue is addressed	Unit/Chapter no.	Remarks
1.	Universal Human Values and Professional Ethics	KVE301/ KVE 401/ KVE 301H/ KVE 401 H Universal Human Values and Professional Ethics	UNIT 1. Course Introduction - Need, Basic Guidelines, Content and Process for Value Education Understanding the need, basic guidelines, content and process for Value Education, Self-Exploration–what is it? - its content and process; 'Natural Acceptance' and Experiential Validation- as the mechanism for self exploration, Continuous Happiness and Prosperity- A look at basic Human Aspirations, Right understanding, Relationship and Physical Facilities- the basic requirements for fulfillment of aspirations of every human being with their correct priority, Understanding Happiness and Prosperity correctly- A critical appraisal of the	

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			current scenario, Method to fulfil the above human aspirations: understanding and living in harmony at various levels.	
2.	Universal Human Values and Professional Ethics	KVE301/ KVE 401/ KVE 301H/ KVE 401 H Universal Human Values and Professional Ethics	UNIT-2 Understanding Harmony in the Human Being - Harmony in Myself Understanding human being as a co-existence of the sentient 'I' and the material 'Body', Understanding the needs of Self ('I') and 'Body' - Sukh and Suvidha, Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer), Understanding the characteristics and activities of 'I' and harmony in 'I', Understanding the harmony of I with the Body: Sanyam and Swasthya; correct appraisal of Physical needs, meaning of Prosperity in detail, Programs to ensure Sanyam and Swasthya.	
3.	Universal Human Values and Professional Ethics	KVE301/ KVE 401/ KVE 301H/ KVE 401 H Universal Human Values and Professional Ethics	UNIT-3 Understanding Harmony in the Family and Society- Harmony in Human-Human Relationship Understanding harmony in the Family- the basic unit of human interaction , Understanding values in human-human	

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			relationship; meaning of Nyaya and program for its fulfillment to ensure Ubhay-tripti; Trust (Vishwas) and Respect (Samman) as the foundational values of relationship, Understanding the meaning of Vishwas; Difference between intention and competence, Understanding the meaning of Samman, Difference between respect and differentiation; the other salient values in relationship, Understanding the harmony in the society (society being an extension of family): Samadhan, Samridhi, Abhay, Sah-astitva as comprehensive Human Goals, Visualizing a universal harmonious order in societyUndivided Society (AkhandSamaj), Universal Order (SarvabhaumVyawastha)- from family to world family!.	
4.	Universal Human Values and Professional Ethics	KVE301/ KVE 401/ KVE 301H/ KVE 401 H Universal Human Values and Professional Ethics	UNIT-4 Understanding Harmony in the Nature and Existence - Whole existence as Co-existence Understanding the harmony in the Nature, Interconnectedness and mutual fulfillment among the four orders of nature- recyclability and self-regulation in	

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			nature, Understanding Existence as Co-existence (Sah-astitva) of mutually interacting units in all-pervasive space, Holistic perception of harmony at all levels of existence.	
5.	Universal Human Values and Professional Ethics	KVE301/ KVE 401/ KVE 301H/ KVE 401 H Universal Human Values and Professional Ethics	UNIT-5 Implications of the above Holistic Understanding of Harmony on Professional Ethics Natural acceptance of human values, Definitiveness of Ethical Human Conduct, Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order, Competence in Professional Ethics: a) Ability to utilize the professional competence for augmenting universal human order, b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies and management models, Case studies of typical holistic technologies, management models and production systems, Strategy for transition from the present state to Universal Human Order: a) At the level of individual: as socially and ecologically responsible engineers,	

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			technologists and managers, b) At the level of society: as mutually enriching institutions and organizations.	
6.	ENVIRONMENT AND ECOLOGY	BAS104 / BAS204: ENVIRONMENT AND ECOLOGY	Unit-1 Environment: Definition, Types of Environment, Components of environment, Segments of environment, Scope and importance, Need for Public Awareness. Ecosystem: Definition, Types of ecosystem, Structure of ecosystem, Food Chain, Food Web, Ecological pyramid. Balance Ecosystem. Effects of Human Activities such as Food, Shelter, Housing, Agriculture, Industry, Mining, Transportation, Economic and Social security on Environment, Environmental Impact Assessment, Sustainable Development.	
7.	ENVIRONMENT AND ECOLOGY	BAS104 / BAS204: ENVIRONMENT AND ECOLOGY	Unit-2 Natural Resources: Introduction, Classification. Water Resources; Availability, sources and Quality Aspects, Water Borne and Water Induced Diseases, Fluoride and Arsenic Problems in Drinking Water, Mineral Resources; Material Cycles;	

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			Carbon, Nitrogen and Sulfur cycles. Energy Resources; Conventional and Non conventional Sources of Energy. Forest Resources; Availability, Depletion of Forests, Environment Impact of forest depletion on society.	
8.	ENVIRONMENT AND ECOLOGY	BAS104 / BAS204: ENVIRONMENT AND ECOLOGY	Unit-3 Pollution and their Effects; Public Health Aspects of Environmental; Water Pollution, Air Pollution, Soil Pollution, Noise Pollution, Solid waste management.	
9.	ENVIRONMENT AND ECOLOGY	BAS104 / BAS204: ENVIRONMENT AND ECOLOGY	Unit-4 Current Environmental Issues of Importance; Global Warming, Green House Effects, Climate Change, Acid Rain, Ozone Layer Formation and Depletion, Population Growth and Automobile pollution, Burning of paddy straw.	
10.	ENVIRONMENT AND ECOLOGY	BAS104 / BAS204: ENVIRONMENT AND ECOLOGY	Unit-5 Environmental Protection; Environmental Protection Act 1986, Initiatives by Non Governmental Organizations (NGO's), Human Population and the Environment: Population growth, Environmental Education, Women	

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			Education.	
11.	AIR & NOISE POLLUTION CONTROL	KCE 057 AIR & NOISE POLLUTION CONTROL	Unit 1 Air pollution: composition and structure of atmosphere, global implications of air pollution, classification of air pollutants: particulates, hydrocarbon, carbon monoxide, oxides of sulphur, oxides of nitrogen and photochemical oxidants. Indoor air pollution. Effects of air pollutants on humans, animals, property and plants.	
12.	AIR & NOISE POLLUTION CONTROL	KCE 057 AIR & NOISE POLLUTION CONTROL	Unit 2 Air pollution chemistry, meteorological aspects of air pollution dispersion; temperature lapse rate and stability, wind velocity and turbulence, plume behavior, dispersion of air pollutants, the Gaussian Plume Model, stack height and dispersion.	
13.	AIR & NOISE POLLUTION CONTROL	KCE 057 AIR & NOISE POLLUTION CONTROL	Unit 3 Ambient air quality and standards, air sampling and measurements. Control of particulate air pollutants using gravitational settling chambers, cyclone separators, wet collectors, fabric filters (Bag-house filter),	

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			electrostatic precipitators (ESP)	
14.	AIR & NOISE POLLUTION CONTROL	KCE 057 AIR & NOISE POLLUTION CONTROL	Unit 4 Control of gaseous contaminants: Absorption, Adsorption, Condensation and Combustion, Control of sulphur oxides, nitrogen oxides, carbon monoxide, and hydrocarbons. Automotive emission control, catalytic convertor, Euro-I, Euro-II and Euro-III specifications, Indian specifications.	
15.	AIR & NOISE POLLUTION CONTROL	KCE 057 AIR & NOISE POLLUTION CONTROL	Unit 5 Noise pollution: Basics of acoustics and specification of sound; sound power, sound intensity and sound pressure levels; plane, point and line sources, multiple sources; outdoor and indoor noise propagation; psychoacoustics and noise criteria, effects of noise on health, annoyance rating schemes; special noise environments: Infrasound, ultrasound, impulsive sound and sonic boom; noise standards and limit values; noise instrumentation and monitoring procedure. Noise indices. Noise control methods.	
16.	ENVIRONMENTAL ENGINEERING	KCE 603 ENVIRONMENTAL ENGINEERING	Unit 1 Fresh water, water demands, variation in demands, population	

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			forecasting by various methods, basic needs and factors affecting consumption, design period. Transmission of water: Various types of conduits, capacity and sizes including economical sizes of rising main, structural requirements; laying and testing of water supply pipelines; pipe materials, joints, appurtenances and valves; leakages and control.	
17.	ENVIRONMENTAL ENGINEERING	KCE 603 ENVIRONMENTAL ENGINEERING	Unit 2 Storage and distribution of water: Methods of distribution, pressure and gravity distribution systems, Concept of service and balancing reservoirs. Capacity of distribution reservoirs: general design guidelines for distribution system.	
18.	ENVIRONMENTAL ENGINEERING	KCE 603 ENVIRONMENTAL ENGINEERING	Unit 3 Physical, chemical and bacteriological examination of water and wastewater: Temperature, pH, colour and odour, solids, nitrogen and phosphorus, chlorides, toxic metals and compounds, BOD, COD etc. quality requirements, standards of water and waste water, disposal of wastewater on land	

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			and water bodies.	
19.	ENVIRONMENTAL ENGINEERING	KCE 603 ENVIRONMENTAL ENGINEERING	Unit 4 Objectives of water treatment: unit operations, processes, and flow sheets. Water treatment: screening, sedimentation, determination of settling velocity, efficiency of ideal sedimentation tank, design of settling tanks, grit chamber. Primary sedimentation and coagulation, filtration: theory of filtration; hydraulics of filtration; slow sand, rapid sand and pressure filters, backwashing; design of slow and rapid sand filters. Disinfection: requirements of an ideal disinfectant; various disinfectants, chlorination and practices of chlorination, water softening and ion-exchange process	
20.	ENVIRONMENTAL ENGINEERING	KCE 603 ENVIRONMENTAL ENGINEERING	Unit 5 Objectives of waste water treatment: unit operations, processes, and flow sheets. Secondary and tertiary treatment: secondary sedimentation and theory of organic matter removal. Working of activated sludge process, trickling filters; aerated lagoons, waste stabilization ponds, oxidation	

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			ditches, rotating biological contactors (RBC). Anaerobic digestion of sludge: design of low and high rate anaerobic digesters and septic tank. Working of up flow anaerobic sludge blanket (UASB) reactor and other emerging technologies for wastewater treatment	
21.	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801 RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	Unit 1 Rural Planning & Development: Concepts of Rural Development, Basic elements of rural Development, and Importance of Rural Development for creation of Sustainable Livelihoods, An overview of Policies and Programmes for Rural Development-Programmes in the agricultural sector, Programmes in the Social Security, Programmes in area of Social Sector.	
22.	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801 RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	Unit 2 Rural Development Programmes: Sriniketan experiment, Gurgaon experiment, marthandam experiment, Baroda experiment, Firkha development scheme, Etawa pilot project, Nilokheri experiment, approaches to rural community development: Tagore,	

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			Gandhi etc	
23.	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801 RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	Unit 3 Panchayati Raj & Rural Administration: Administrative Structure: bureaucracy, structure of administration; Panchayati Raj Institutions Emergence and Growth of Panchayati Raj Institutions in India; People and Panchayati Raj; Financial Organizations in Panchayati Raj Institutions, Structure of rural finance, Government & Non-Government Organizations / Community Based Organizations, Concept of Self help group.	
24.	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801 RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	Human Resource Development in Rural Sector: Need for Human Resource Development, Elements of Human Resource Development in Rural Sector Dimensions of HRD for rural development-Health, Education, Energy, Skill Development, Training, Nutritional Status access to basic amenities - Population composition.	
25.	RURAL DEVELOPMENT: ADMINISTRATION AND PLANNING	KHU701/ KHU801 RURAL DEVELOPMENT: ADMINISTRATION	Unit 5. Rural Industrialization and Entrepreneurship: Concept of Rural	

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		AND PLANNING	Industrialization, Gandhi an approach to Rural Industrialization, Appropriate Technology for Rural Industries, Entrepreneurship and Rural Industrialization Problems and diagnosis of Rural Entrepreneurship in India, with special reference to Women Entrepreneurship; Development of Small Entrepreneurs in India, need for and scope of entrepreneurship in Rural area.	

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Picture- Tree Plantation Drives

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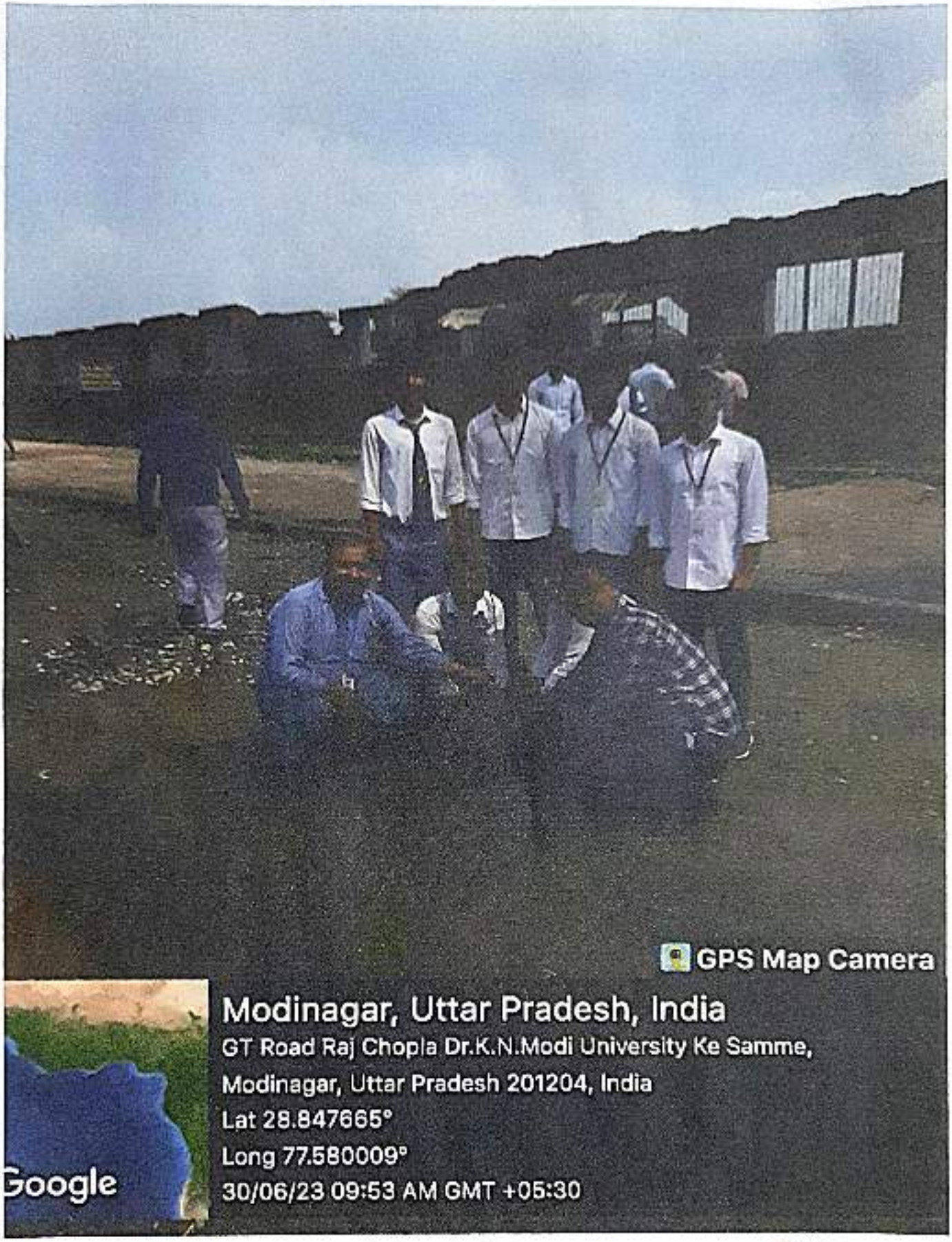

Picture- Tree Plantation Drives

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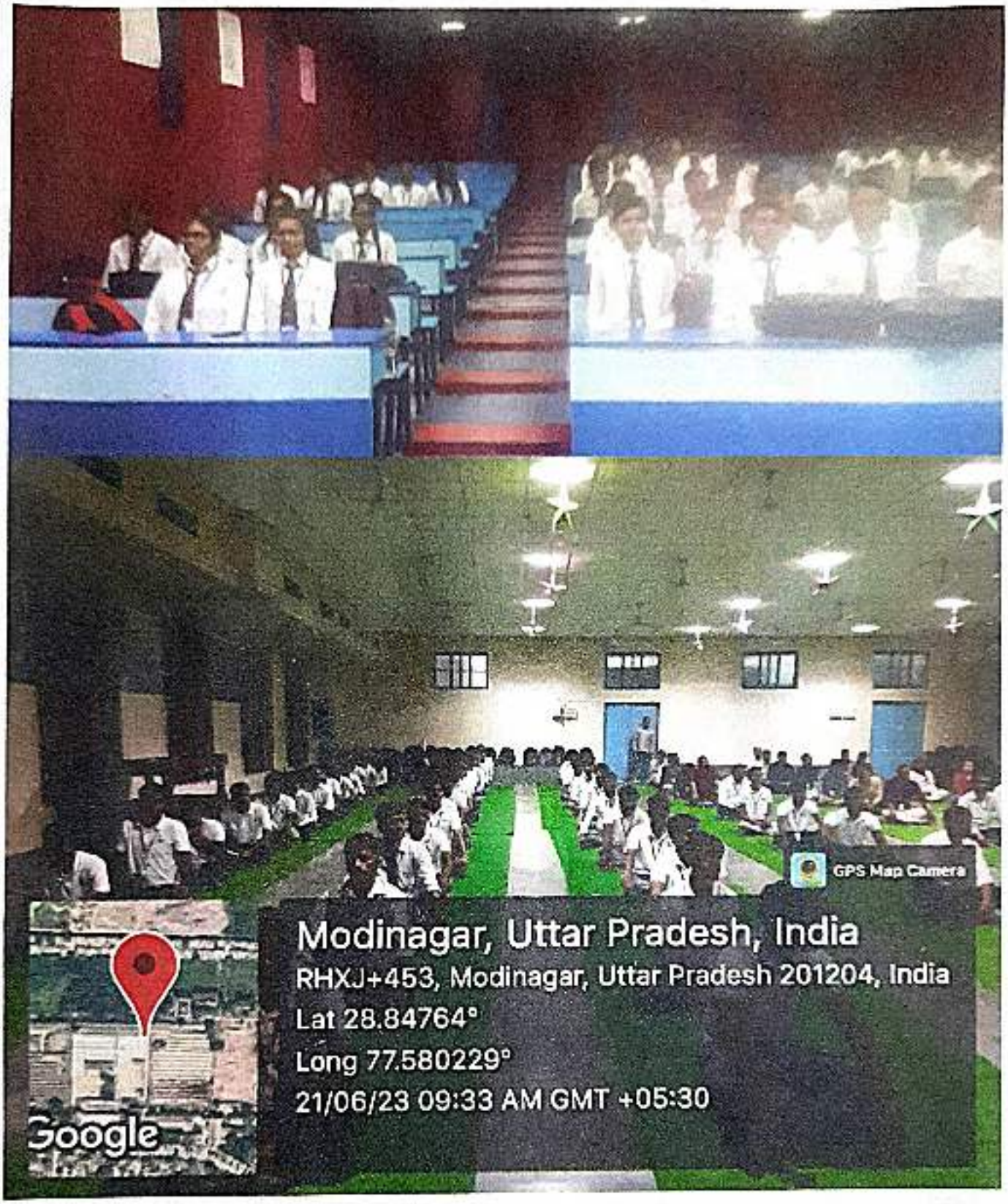

Yoga day celebration.

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1.3.1 Institute integrates cross cutting issues relevant to professional ethics, gender, human values, environment and sustainability into the curriculum.

Picture - Workshop by ICC on Sexual Harassment of Women at Workplace Prevention, Prohibition and Redressal on 28 March, 2023.

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