AMITY UNIVERSITY HARYANA

NAAC 'A' GRADE ACCREDITED UNIVERSITY

REPORT ON
SUSTAINABLE DEVELOPMENT GOAL

YEAR 2021-22

Preamble

Sustainable Development Goal 6 aims to ensure availability and sustainable management of water and sanitation for all. Water and sanitation are critical to the health of people and the planet. SDG 6 not only addresses the issues relating to drinking water, sanitation and hygiene, but also the quality and sustainability of water resources worldwide. Improvements in drinking water, sanitation and hygiene are essential for progress in other areas of development too, such as nutrition, education, health and gender equality. SDG 6 relates widely to other SDGs - safe water and sanitation are key foundations for good health (SDG3). By managing our water sustainably, we are also able to better manage our production of food and energy (SDG6 and SDG7) and contribute to decent work and economic growth (SDG8). Moreover, we can preserve our water ecosystems, their biodiversity (SDG14), and take action on climate change (SDG13).

Amity University Haryana contributes to clean water and sanitation by creating awareness through teaching and learning, through research and minimizing water consumption by adapting water conservation policies and recycle & reuse the waste water on campus.

Teaching and Learning

Programs related to Sustainable Development Goal (SDG) 6, which focuses on clean water and sanitation, are crucial in Amity University, as in any educational institution, for several reasons, Amity University can play a significant role in educating students, faculty, and staff about the importance of clean water and sanitation. The university can raise awareness about the global water crisis and the importance of access to clean water and sanitation facilities by offering relevant courses, seminars, and workshops. Amity University can facilitate research projects related to SDG 6, contributing to the development of new technologies and solutions for improving water quality, sanitation systems, and water resource management. The university offers programs to train students and professionals in the field of water and sanitation. This can help build a skilled workforce to address the challenges associated with water and sanitation access. Amity University can lead by example by implementing sustainable water management practices on its campus. This includes reducing water wastage, promoting water recycling, and ensuring proper sanitation facilities for students and staff. Amity University can engage with local communities to address water and sanitation issues in the surrounding areas.

Programes	School/ Institute
B.Sc. (Hons) - Earth Sciences	ASEES
M.Sc. - Environmental Sciences & Management	
B.Tech (Civil Engineering)	ASET
M.Tech (Civil Engineering)	
Bachelor of Planning	ASAP
Master of Planning (Urban and Regional)	
Bachelor of Architecture	

This can involve initiatives such as providing clean water access, sanitation facilities, and hygiene education to underserved communities. By incorporating SDG 6 into its

curriculum and institutional policies, Amity University can contribute to a holistic approach to sustainable development. It can ensure that students are well-versed in the interconnectedness of different SDGs and how clean water and sanitation underpin many other aspects of development. By emphasizing the significance of SDG 6, Amity University can foster a sense of responsibility towards the global community and the planet.

Research and Collaborations

Research plays a crucial role in advancing progress toward Sustainable Development Goal 6 (SDG 6), which focuses on ensuring clean water and sanitation for all. At Amity University Haryana we thrive to do Research that provides policymakers, governments, and organizations with the necessary information and data to make informed decisions about water and sanitation management. It helps identify gaps, assess needs, and develop evidence-based strategies and policies to achieve the goal.

Faculty members are involved in various cutting edge research related to water purification and conservation. Some of the research topics are as follows:

- Influence of Geogenic vs Anthropogenic Pollutants on Ground Water Quality in Igneous Aquifer in Dalton Ganj, Jharkhand, India (Tentative)
- Ground Water Quality Assesment over Selected Sites of West Bengal (Tentative)
- Development & Characterization of Mixed Micellar Lipid Formulation for Bioavailability Enhancement of Poorly Water Soluble Hepatoprotective Phytoconstituent
- Revisiting Ground Water Laws in India for Sustainable Resource Management.
- Integrated Urban Water Management System for Smart City, Case Study – Gwalior-Urban Water Resource Planning and Management Approaches – A Case Study of Gondia District (MHS)
- Synthesis, Characterization and application of Cobalt Zinc nanoferrites in water purification.
- Development and evaluation of Chitosan-based polyelectrolyte complexes as coagulants for simulated industrial paint wastewater treatment.
- Synthesis and characterization of calcium and cobalt doped mG-zN ferrites for water purification.
- Use of Modified Rice Husk: A Potential Matrix for Water Purification.
- Study of Groundwater Contamination in Manesar and its Effect on Health.
- A comparative study for heavy metal removal efficiency of nanoparticle and nanocomposite from wastewater
- Nanobiocomposite and piezophotocatalyst for remediation of chromium and organic pollutants from Tannery wastewater.

The faculty members have collaborations with leading research labs and institutions for conducting the research work at AUH. Some of our collaborators are:

- Dr. Syed Hamim Jeelani, Assistant Professor, Department of Civil Engineering, Koneru Lalshmaiah Education Foundation, Deemed to be University, Vaddeswaram-522502, Andhra Pradesh
- Dr. Neeraj Kumar Sethiya, Associate Professor, DIT University, Dehradun, Uttarakhand
- Prof (Dr) Bharti Kumar, Director, Centre for

Some of the high impact research publications are listed below:

1. Joshi T, Parkash O, Krishan G. CFD modeling for slurry flow through a horizontal pipe bend at different Prandtl number. Int J Hydrogen Energy 2022;47(56):23731-23750.
2. Punia P, Aggarwal RK, Kumar R, Dhar R, Thakur P, Thakur A. Adsorption of Cd and Cr ions from industrial wastewater using Ca doped Ni–Zn nanoferrites: Synthesis, characterization and isotherm analysis. Ceram Int 2022;48(13):18048-18056.
3. Fadnavis S, Chavan P, Joshi A, Sonbawne SM, Acharya A, Devara PCS, et al. Tropospheric warming over the northern Indian Ocean caused by South Asian anthropogenic aerosols: Possible impact on the upper troposphere and lower stratosphere. Atmos Chem Phys 2022;22(11):7179-7191.
4. Gupta A, Kumar M, Ghosh P, Swati, Thakur IS. Risk assessment of a municipal extended aeration activated sludge treatment plant using physico-chemical and in vitro bioassay analyses. Environ Technol Innov 2022;26.
5. Sonbawne SM, Fadnavis S, Vijayakumar K, Devara PCS, Chavan P. Phase-Resolved Lockdown Features of Pollution Parameters Over an Urban and Adjoining Rural Region During COVID-19. Front Environ Sci 2022;10.
6. Thakur P, Chahar D, Thakur A. Visible light assisted photocatalytic degradation of methylene blue dye using Ni doped Co-Zn nanoferrites. Adv Nano Res 2022;12(4):415-426.
7. Parkash O, kumar A, Sikarwar BS. CFD modeling of slurry flow erosion wear rate through mitre pipe bend. Proc Inst Mech Eng Part C J Mech Eng Sci 2022;236(5):2256-2267.
8. Singh R, Kumar N, Mehra R, Walia A, Kumar H, Sharma K, et al. Colorimetric assay for visual determination of imidacloprid in water and fruit samples using asparagine modified gold nanoparticles. J Iran Chem Soc 2022;19(2):599-607.
9. Thakur A, Punia P, Dhar R, Aggarwal RK, Thakur P. Separation of cadmium and chromium heavy metals from industrial wastewater by using Ni-Zn nanoferrites. Adv Nano Res 2022;12(5):457-465.
10. Khan AA, Pant NC, Joshi R, Devara PCS. Chemical and isotopic variability of Bhagirathi river water (Upper Ganga), Uttarakhand, India. Ecological Significance of River Ecosystems: Challenges and Management Strategies; 2022. p. 133-146.
11. Ghosh D, Kumari S, Majumder S. Role of Graphene Oxide Based Nanocomposites in Arsenic Purification from Ground Water. Eng Mater 2022:369-388.
12. Sharma K, Vaya D, Prasad G, Surolia PK. Photocatalytic process for oily wastewater treatment: a review. Int J Environ Sci Technol 2022.
13. Yadav R, Chundawat TS, Rawat P, Rao GK, Vaya D. Photocatalytic degradation of malachite green dye by ZnO and ZnO–β-cyclodextrin nanocomposite. Bull Mater Sci 2021;44(4).
14. Photocatalytic degradation of malachite green dye by using β-cyclodextrin based nanocomposites. AIP Conference Proceedings; 2021.

15. Kumar V, Srivastava S, Thakur IS. Enhanced recovery of polyhydroxyalkanoates from secondary wastewater sludge of sewage treatment plant: Analysis and process parameters optimization. Bioresour Technol Rep 2021;15.

16. Verma M, Mitan M, Kim H, Vaya D. Efficient photocatalytic degradation of Malachite green dye using facilely synthesized cobalt oxide nanomaterials using citric acid and oleic acid. J Phys Chem Solids 2021;155.

17. Thapa R, Sai K, Saha D, Kushwaha D, Aswal VK, Ghosh Moulick R, et al. Synthesis and characterization of a nanoemulsion system for solubility enhancement of poorly water soluble non-steroidal anti-inflammatory drugs. J Mol Liq 2021;334.

18. Dhingra D, Behera K, Bhawna, Pandey S. Formation of water-in-oil microemulsions within a hydrophobic deep eutectic solvent. Phys Chem Chem Phys 2021;23(17):10629-10635.

19. Parkash O, Kumar A, Sikarwar BS. CFD Modeling Of Slurry Pipeline At Different Prandtl Numbers. J Therm Eng 2021;7(4):952-969.

20. Bouarroudj T, Aoudjit L, Djahida L, Zaidi B, Ouraghi M, Zioui D, et al. Photodegradation of tartrazine dye favored by natural sunlight on pure and (Ce, Ag) co-doped ZnO catalysts. Water Sci Technol 2021;83(9):2118-2134.

21. Tripathy G, Goswami S, Das PP. Late Permian species diversity of the genus Glossopteris in and around Himgir, Ib River Basin, Odisha, India, with a clue on palaeoclimate and palaeoenvironment. Arab J Geosci 2021;14(8).

22. Srivastava AK, Bhoyar PD, Kanawade VP, Devara PCS, Thomas A, Soni VK. Improved air quality during COVID-19 at an urban megacity over the Indo-Gangetic Basin: From stringent to relaxed lockdown phases. Urban Clim 2021;36.

23. Reddy BS, Narayana PL, Maurya AK, Gupta V, Reddy YH, Alrefaei AF, et al. Modeling cyclic volatile methylsiloxanes removal efficiency from wastewater by ZnO-coated aluminum anode using artificial neural networks. J King Saud Univ Sci 2021;33(2).

24. Punia P, Bharti MK, Chalia S, Dhar R, Ravelo B, Thakur P, et al. Recent advances in synthesis, characterization, and applications of nanoparticles for contaminated water treatment- A review. Ceram Int 2021;47(2): 1526-1550.

25. Chahar D, Taneja S, Bisht S, Kesarwani S, Thakur P, Thakur A, et al. Photocatalytic activity of cobalt substituted zinc ferrite for the degradation of methylene blue dye under visible light irradiation. J Alloys Compd 2021;851.

26. Bhardwaj R, Sharma A, Ghosh S, Mani N, Kumar K. Time Period of the Vibration of the Circular Plate with Circular Variation Both in Thickness and Density. Math Probl Eng 2021;2021.

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ASSESSMENT OF FLUORIDE AND NITRATE CONTAMINATION PROBLEM IN THE GROUNDWATER OF MANESAR, GURUGRAM, HARYANA, INDIA: A CASE STUDY

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Abstract

It is impossible to survive without water . Around 80 percent of the world's wastewater is dumped directly in the groundwater which goes back to the environment polluting rivers, lakes, and oceans unsafe drinking water kills more people as compared to any other epidemic.It is said that less than 1 % of earth fresh water is actually assessable to us .In the present study ,the physico – chemical characteristics (Fluoride, Nitrate) of the groundwater of Manesar area of District Gurgaon, Haryana, India were assessed for its consumption for drinking purposes. A total of 30 samples were taken from near about 12 sampling sites all the samples were from borewells, tubewells. Water samples were tested in lab for the following physcio- Chemical parameters like(TDS) Total Dissolved Solids,(EC)(Electrical conductivity, Fluoride, Nitrate. The results were compared with the Standards prescribed by(WHO) and Bureau of Indian Standards (BIS) . Standard deviation and Standard Error calculation is also being done on the sample concentration of Fluoride and Nitrate . (EC) Electrical conductivity in all samples was found above 400 u/cm and (TDS) value in all samples was found above 500 mg/l. Fluoride concentration found in few village samples of Manesar area is found to be above 1.5 mg/l (limit prescribed by WHO . Where as some of the other villages like have fluoride concentration in their groundwater samples with in limit prescribed by WHO (1.5mg/l) . Nitrate concentration found in the ground water samples some of the village found to be above (45 mg/l) (limit prescribed by WHO) where as in groundwater samples of few village samples were found to be having nitrate concentration between 40 to 45 mg/l (limit prescribed by WHO) . It is advised to community to use ground water only after properly treating it to avoid getting affected by Diseases caused by the contamination of Drinking water.

Introduction

Ground water contamination commonly occurs when man made products like gasoline, oil, road salts among other harmful wastes makes their way into the groundwater making it unsafe for drinking purpose.

In general the two major contributors of groundwater containments are industrial activities and landfill sites. When the contaminants from these mentioned activities reaches aquifer recharge zones it gets mixed up with groundwater thus making unfit for human use. Studies haves shown that when the contaminant water with Fluorides and Nitrates is consumed for a longer duration it affects human health. Some of the common disease like Fluorosis, Arsenicosis and methemoglobinemia occurs with the excess of consumption of Fluoride, Nitrate and Arsenic present in the ground water.

Fluoride contamination is common all around the world. Some of the main sources of fluoride in ground water are from Fluorapatie, a common mineral,, by-products from oil refining, steel manufacturing and brick

Research Article

Groundwater Contamination and its effect on health: Survey study of the Farmers in Manesar Industrial area,India.

Priyanka Yadav, Deepika Pandey

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Abstract

The present study evaluated the effect of groundwater pollution on the health of the people specially farmers living near industrial area of Manesar. Several studies have shown the presence of contaminants in groundwater of many districts of Haryana state. Manesar is

Governance & Mandates

Amity University Haryana has implemented a comprehensive set of preventative measures to avoid water pollution and ensure the safety of its water system. These practices contribute to maintaining a clean and sustainable environment.

The procedures mentioned are summarized as follows:

Regular cleaning of all buildings' overhead water tanks and water coolers.

- Regular maintenance is crucial to prevent the buildup of contaminants.

Ensuring that all above water tank covers are correctly closed and latched.

- Proper sealing of tanks is essential to keep out pollutants.

Minimizing the use of chemicals for cleaning water tanks.

- Reducing chemical usage helps maintain water quality.

Advising locals to avoid pouring fat and grease down the drain and to use phosphate-free detergent and dish-cleaner.

- Reducing harmful substances in wastewater is important for water quality.

Proper medical waste disposal at AUH.

- Safely managing medical waste helps prevent contamination.

Informing residents not to flush anything down the toilet.

- Avoiding flushing non-biodegradable or harmful items into the sewage system.

Employing organic farming methods and refraining from using pesticides and herbicides.

- Reducing the introduction of chemicals into the environment.

Sending all effluents to an Effluent Treatment Plant (ETP), including waste from the kitchen, laundry, and labs.

- Proper waste management ensures contaminants are treated before release.

Recycling all wastewater through sewage treatment and effluent treatment plants with regular quality tests.

- Ensuring safe and clean water through thorough treatment and monitoring.

Conducting daily in-house RO treated water quality testing and periodic external quality testing.

- Regular quality assessments help maintain safe drinking water.

Using CPVC pipelines to prevent bacterial growth in drinking water.

- Choosing suitable materials helps maintain water quality.

Conducting regular inspection of water pipelines to prevent leaks and damage.

- Preventing physical damage to infrastructure helps maintain water quality.

Conducting awareness campaigns, seminars, workshops, and street plays to promote a pollution-free campus.

- Educating and involving the community in pollution prevention.

These measures collectively demonstrate a strong commitment to water quality and environmental sustainability at Amity University Haryana. They are crucial for ensuring the health and well-being of the university's campus and its surrounding environment.

STP Plant at Amity University Haryana

RO Plant

Drinking Water Facility

Water Conscious Building Standards

The approach taken by the AUH in maintaining zero water discharge campuses is commendable and aligns with sustainable and environmentally conscious practices. The recycling and treatment of water for various purposes like horticulture and sanitation instead of discharging it outside the campus, helps in conserving water resources and reducing environmental impact.

Conducting annual internal audits is a good practice to ensure that the water treatment facilities such as Sewage Treatment Plants (STPs), Reverse Osmosis (RO) Water Plants, and Effluent Treatment Plants are functioning effectively. Regular inspection helps identify

any issues, maintain compliance with regulation and ensure the quality and efficiency of the water treatment processes.

Moreover, the restoration of groundwater suitable for drinking and utilizing government-supplied water from plants also contributes to sustainability and responsible water management. This comprehensive approach not only reduced water wastage but also promotes a self-sustaining system within the campus. Consistently monitoring, maintenance and adherence to such practices not only benefits the immediate environment but also serves as a model for other institutions aiming to implement sustainable water management systems.

An outline of every technique described is provided below:

1. Encourage water-saving techniques to achieve zero water wastage: This is an important step in raising awareness and fostering a culture of water conservation among students, faculty, staff, and the broader university community. This could involve educational campaigns, workshops, and promoting individual responsibility for water conservation.

2. Maintain a close eye on and reduce the university's water usage: Regular monitoring of water consumption is crucial for identifying areas where improvements can be made. Tracking water usage data can help the university set targets for reduction and assess the impact of conservation efforts.

3. Native plants are planted to conserve water: Using native plants in landscaping and green spaces can significantly reduce the need for irrigation. Native plants are adapted to local conditions and generally require less water, making them a sustainable choice for landscaping.

4. Encourage the planting of native trees near and around the university to save water: Native trees, like native plants, can help in reducing the water requirements for landscaping. Trees also provide additional benefits such as shade and improved air quality, which can enhance the overall sustainability of the campus.

5. Evaluates potential locations on campus where alternative water systems could be installed on a regular basis: This involves assessing the feasibility of alternative water sources or systems, like greywater recycling, stormwater harvesting, or water-efficient irrigation. Identifying suitable locations for such systems is a proactive step toward sustainable water management.

6. Continue using cutting-edge water-saving technologies like rainwater collection, water reusing, etc.: Implementing advanced technologies, such as rainwater collection and water reuse systems, can significantly reduce the demand for fresh water and lower utility costs. These technologies are at the forefront of water conservation efforts and can make a substantial impact on sustainability.

Overall, the university's approach seems comprehensive and aligned with best practices in water efficiency and sustainability. It's important to continually monitor and evaluate the effectiveness of these methods and make adjustments as needed to achieve long-term water conservation goals.

Throughout the aforementioned interventions, the campus continues to support student, faculty, and staff initiatives to establish sustainable water usage systems. Additionally, the National Building Standard Code 2005–2016's building standards to minimize water use is utilized.

Amity University Haryana (AUH) is clearly committed to water conservation and sustainability through a range of initiatives and practices. The main water-saving strategies and actions that AUH has implemented are outlined below:

1. Continuous Water Availability: AUH ensures that water is available round-the-clock for various purposes, including drinking, which discourages unnecessary water storage during a crisis.

2. Diversified Water Sources: The university utilizes water from multiple sources, including wells, bore wells, rainwater, and recycled water. This reduces the institution's dependence on a single water source.

3. Rainwater Harvesting: All units on campus, including academic buildings, dormitories, faculty/staff housing, and the military training complex, are designed to facilitate groundwater recharge through rainwater collection. Stormwater is channeled into rain pits designed for this purpose, preventing waterlogging and wastage.

4. Leak Detection and Maintenance: AUH promptly addresses water leaks and conducts regular maintenance to minimize water loss.

5. Laundry Services: The university provides laundry services for both residents and workers, with wastewater from laundry operations being recycled for further use.

6. Canteen and Mess Practices: Utensils from canteens and mess facilities are cleaned in batches to conserve water.

7. Student Awareness: AUH conducts awareness programs and displays posters to educate students about responsible water usage, particularly during activities like brushing, shaving, and bathing.

8. Automated Water Tanks: The university has installed sensor-based, automated water tanks with 24-hour monitoring of water levels. This system ensures efficient water management and helps prevent overflow.

Overall, AUH has taken comprehensive measures to minimize water consumption and maximize water reuse, reducing the burden on local water sources and promoting sustainable water practices on its campus.

Water Harvesting at AUH

University Infrastructure

Amity University Haryana uses subterranean bore wells, to extract all the water required for domestic and drinking purposes on campus. Recycled water is used for irrigation, gardening, chiller plant cooling towers, and civil construction projects.

An overview of campus water consumption and management is provided below:

Water Source: The University primarily relies on underground bore wells to extract water for domestic and drinking purposes on its campus. Water from these bore wells is stored in six underground water tanks, each with a capacity of 50,000 liters. The university extracts approximately 3 lac (300,000) liters of water daily from these bore wells.

Recycled Water: In addition to bore well water, recycled water is used for purposes such as flushing, gardening, cooling towers for chiller plants, and civil construction projects. This is a sustainable practice to reduce the demand on fresh groundwater.

Water Usage: The university uses approximately 3 lakh (300,000) gallons of water each day, with the majority of this water coming from the bore wells. The total water usage includes water for domestic, drinking, and other campus needs.

Overhead Tanks: The overhead tanks on campus are equipped with sensors that detect when water levels are low and automatically refill them with water from the bore wells. This ensures a continuous and reliable supply of water for the university's 4653 people, including staff, faculty, housekeepers, and students.

Efficient water management is crucial, especially in regions where groundwater resources are relied upon for daily needs. Monitoring water usage, promoting recycling, and installing water meters are all steps in the right direction to conserve and manage water resources responsibly.

Types of Wastewater & its Treatment

Amity University campus is committed to implementing a sustainable water consumption system. Using sewage treatment plants (STPs) and effluent treatment plants (ETPs) to treat wastewater is a responsible and environmentally friendly approach.

Types of Wastewaters

Drainage water: This likely includes wastewater from sinks, showers, and other sources that do not contain hazardous chemicals.

Effluent water from laboratories, laundries, and cafeterias: This type of wastewater may contain more contaminants and chemicals due to its source.

Wastewater Treatment

Sewage Treatment Plants (STPs): These are designed to treat sewage and other types of wastewaters, typically from residential and industrial sources. In this context, they are likely used to treat drainage water and possibly other wastewater streams.

Effluent Treatment Plants (ETPs): ETPs are specifically designed to treat industrial effluents, which can contain various pollutants and chemicals. In this case, ETPs are used to treat wastewater from laboratories, laundries, and cafeterias.

Water Reuse

The treated water from the STPs and ETPs is reused in various areas, including horticulture, farm irrigation, and toilet flushing. This is a sustainable practice that reduces the demand for fresh water and minimizes environmental impact.

Capacity: The combined daily capacity of the STP is 9 lac litres (assuming "lac" represents 100,000, this would be 900,000 litres or 900 cubic meters). The ETP has a daily capacity of 50,000 litres (or 50 cubic meters).

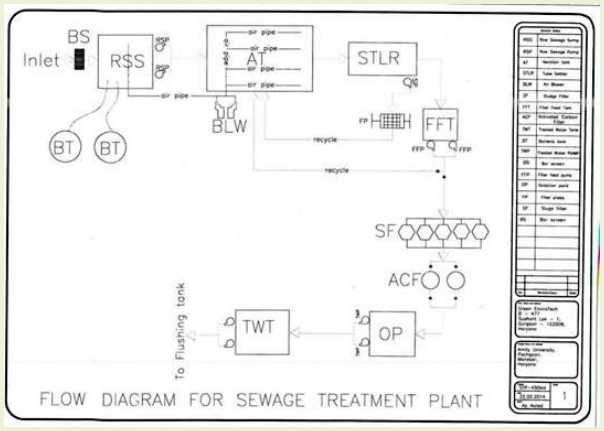
ETP

ETP Laundry

Pump Room

Oxidation Pond

These initiatives not only promote water conservation but also contribute to reducing the environmental footprint of the campus. It's important to continue monitoring and maintaining these systems to ensure their effectiveness and long-term sustainability.



Preventing Water System Pollution

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Provide Free Drinking Water

AUH goes above and beyond to ensure that visitors, employees, and students have free

access to clean, safe drinking water. 47 water coolers can be observed on campus, dispersed among the residence halls, AIMC, academic buildings A, B, C, and D, and other locations.

Providing free drinking water in university is a positive and essential service for several reasons, as it contributes to the well-being and sustainability of the campus community.

Hydration and Health: Access to free drinking water is crucial for the health and well-being of students, faculty, and staff. Proper hydration supports cognitive function, concentration, and overall physical health.

Sustainability: Offering free drinking water encourages the use of reusable water bottles and reduces the consumption of single-use plastic bottles. This aligns with sustainability goals and reduces plastic waste on campus.

Inclusivity: Providing free drinking water is an inclusive measure. It ensures that everyone, regardless of their financial situation, has access to a basic necessity.

Convenience: Accessible water fountains and filling stations make it convenient for people to stay hydrated throughout the day, which is particularly important in academic and work settings.

Promotion of Healthy Habits: Encouraging the consumption of water over sugary beverages is part of promoting a healthy lifestyle. This can contribute to a culture of wellness on campus.

Reduced Environmental Impact: Reducing the use of single-use plastic bottles and promoting the use of refillable containers can significantly reduce the university's environmental footprint.

Events and Social Outreach

Plantation Drive under the campaign of "MISSION GREEN"

On the occasion of 75th Independence Day, Plantation Drive at AUH Campus was conducted by Amity School of Earth and Environmental Studies in collaboration with the Horticulture Department. The event was conducted to create awareness towards the importance and benefits of environmental conservation and plantation including use of each parts of neem plants in our daily life. Faculty discussed the urgency of latest techniques that would benefit mankind by by creating solution which is beneficial to both environment and society and expressed concerns for environmental restoration, Green Energy, and environmental conservation.

Through the MISSION GREEN we motivate our youth to protect the environment and hope that we will be successful. The First Phase of plantation has been successfully completed on August 15, 2021 under the supervision of Prof. I.S. Thakur & Dr. Viveak Ballyan and Second Phase was be scheduled on August 27, 2021. Under the plantation drive, 150 trees (Neem, Papri, Alstonia (Chitvan) and Jamun) were planted at along the boundary wall from Gate No. 3 towards Hostel Backside and up to STP Plant and also along the boundary wall from Gate No. 2 towards Amity Dog Academy total 75 trees were planted. Team members of the Environmental and Consumer Protection Foundation (ECPF) (approx. 20 numbers) and the faculties, staff members and students participated in plantation drive and they were highly interested to become part of the Green mission.

Plantation Drive at Amity University Haryana

Environment Consciousness Program conducted in collaboration with Garg Foundation, Noida

प्यास: A Social Welfare Drive

Students of Amity of School of Liberal Arts Amity University Haryana organized a social welfare drive, " " on 22nd May 2022 to provide bottled mineral water and bottled soda water to the people working on construction sites. Mehak Chopra, Akshat Srivastava, Jayshree Kaushik, Siddharth Mittal and Jatin Dhanda, students of B.A.(H) English visited various places near Gurgaon and interacted with workers working in the hot weather and scorching summer. During this drive,they got to know the plight of these people and about their strong will power to work beyond their capabilities so that they can make both ends meet and feed their families. Along with the bottled water, these students talked to them to bring a smile on their faces and promised to come back next month with some new initiatives for these people.

A social welfare drive, ''प्यास'' on 22nd May 2022 to provide bottled soda water to the people working on construction sites.

A social welfare drive, "प्यास" on 22nd May 2022 to provide bottled water to the people working on construction sites.

A social welfare drive to provide Clean Water and Food to Children at Construction Site

Guest Lecture "Nanotechnology: A prospective towards cleaner environment", conducted on 24th Sept 2021

The Guest Lecture "Nanotechnology: A prospective towards cleaner environment" was conducted on 24-Sep-2021 by Amity School of Science Engineering and Technology. To let students, scholars know how can nanoparticles, nanomaterials be used as a remedy in treating day to day problems like water treatment, chemical oxygen demand, mutagenicity, impacting photosynthesis, inhibiting plant growth etc. Nanocomposites are intelligent to eliminate bacteria, viruses, and inorganic and organic pollutants from wastewater due to precise binding action. Water purification methods are the focus and attention of the many scientist and governmental agencies.

Innovation Strategy for Universities to Create Opportunities of Entrepreneurship in Mitigating Environmental Issues on National Pollution Control Day 02-12th -2021

Amity School of Earth and Environmental Sciences (ASEES), Amity University Haryana along with Institute Innovation Council (IICs), takes the opportunity to celebrate National Pollution Control Day on 2 December 2021 by organizing an online webinar and panel discussion with eminent Keynote Speaker Dr. B K Sahu, Regional Manager & Head, NRDC - Intellectual Property and Innovation Centre, Innovation Valley, Vishakhapatnam, GoI on the "Topic: Innovation Strategy for Universities to Create Opportunities of Entrepreneurship in Mitigating Environmental Issues".

Webinar on "Green Technologies for mitigation of Global Warming & Climate Change" on 4th April 2022

The Department of Civil Engineering, Amity School of Engineering Department (ASET) coordinated a Webinar on "Green Technologies for mitigation of Global Warming & Climate Change" The theme was on increasing trend of average temperature of the air near Earth's surface, the threat of global warming appears to be true. Research and Scientific studies have revealed that the global atmosphere concentrations of Carbon Dioxide, (CO_2), Methane (CH_4) and Nitrous Oxide (N_2O) have increased due to anthropogenic activities. These gases are called Green House Gases (GHGs) responsible for increasing global average temperature and causes adverse effects on ecosystem. The coordinators were Dr HRP Yadav, Professor and Head, Civil Dept. Ms Sakshi Gupta, Assistant Professor and Dr Tanvi Gupta, Assistant Professor, Department of Civil Engineering, ASET

Society Outreach Program or Awareness Program (Role play and Plantation drive)- Jamia Public School, Pataudi

Global warming and excessive raise in Earth temperature is the biggest problem in present times. We are lacking in protecting the sources of water and Poor hand hygiene leading to many water borne diseases in children. So with this inspiration B.Sc Nursing IV sem students from Amity College of Nursing were planned to conduct Mass awareness programme in Jami Public school, Bhiwadi.

On the occasion of WHO Day, 18 students from B.Sc Nursing IV sem, Amity College of Nursing, ACON were conducted mass awareness programme on Save water & Hand Hygiene at Jamia Public school located in Pataudi. Role play was organised and conducted systematically for primary school students on the following topics:

- Importance of water
- Hand Hygiene
- Water borne diseases and its prevention
- Plantation drive

Mr. Abdul Khalid, Head master of Jamia Public school was a convener of this event and coordinated with nursing students and helped to convey the message of school children.

... हम सभी के लिए स्वास्थ्य, पहली प्राथमिकता

अटल हिंद संवाददाता

पटौदी । हम सभी के लिए स्वास्थ्य रहना पहली प्राथमिकता होनी चाहिए। सही मायने में हमारा अपना स्वास्थ्य ही सबसे बड़ा धन है। यह एक ऐसा धन है, जो एक बार हाथ से निकल गया दोबारा से प्राप्त करना बहुत बड़ी चुनौती बन जाता है। स्वस्थ व्यक्ति ही स्वस्थ समाज और स्वस्थ राष्ट्र निर्माण में अपना योगदान प्रदान करता है। हम अपनी दिनचर्या और खानपान में सावधानी रखते हुए अपने आप को पूरी तरह से स्वस्थ रख सकते हैं। यह बात अमेटी कॉलेज ऑफ नर्सिंग टीम के सदस्यों के द्वारा पटौदी के जामिया अलह सुन्नत मदरसा में यहां पढ़ने वाले छात्र छात्राओं एक नाटक के माध्यम से समझाई गई।

अमेटी कॉलेज ऑफ नर्सिंग की टीम की तरफ से कॉलेज के प्रिंसिपल डॉ तमिल सेल्वी, सहायक प्रोफेसर नवीन झा, अंजना चंद्रन व अन्य ने इस मौके पर मदरसा परिसर में पढ़ने वाले छात्र छात्राओं के सहयोग से विभिन्न प्रकार के पौधे भी लगाए। पौधे लगाने के साथ ही मदरसा के छात्र छात्राओं को बताया गया कि पेड़ पौधों का हमारे अपने जीवन में और पर्यावरण को शुद्ध रखने में कितना महत्वपूर्ण योगदान है। इसी मौके पर बच्चों को इस बात के लिए प्रेरित किया गया कि जो पौधे बच्चों के द्वारा लगाए गए हैं, बड़े होने तक इन पौधों की देखभाल भी अवश्य करें । इसी मौके पर मदरसा के छात्र छात्राओं को पानी के महत्व के विषय में भी जानकारी दी गई । पानी के दो ही स्रोत हैं , भूमिगत जल और बरसात । पानी को अनावश्यक रूप से बिल्कुल भी बर्बाद नहीं करना चाहिए । पानी की एक-एक बूंद बहुत कीमती है। पानी के बिना इंसान और जीव दोनों का जीवन बहुत लंबे समय तक नहीं चल सकता। पानी के सीमित संसाधनों को ध्यान में रखते हुए पानी की अधिक से अधिक बचत करने की बचपन से ही आदत डालना जरूरी है ।

Role play on Save water by Amity College of Nursing students news published in Newspaper

(Date: 8th April 2022)

Amity College of Nursing students and faculty inaugurated plantation drive

Plantation by Nursing students

Amity College of Nursing students with Jami Public School, Patuadi children and Teaching faculties during the stage programme

Creating Awareness through News & Social Media

Dr Kushagra Rajendra, HoD, Amity School of Earth and Environmental Sciences actively participate in creating awareness about the impact of festivals in India, Governmental policies on the environment through interviews conducted by News Channels and through Social media. Some of the links to these news reports are listed below:

- Kushagra Rajendra (2022) पर्यावरणीय अंर्तसंबंधों के अंर्तजाल की अनदेखी, हस्तक्षेप, राष्ट्रीय सहारा, 04/06/2022.
  http://rashtriyasahara.com/imageview_21193_131437090_4_9_04-06-2022_0_i_1_sf.html
  http://rashtriyasahara.com/imageview_21194_131438330_4_9_04-06-2022_2_i_1_sf.html
- Kushagra Rajendra (2021) जलवायु कूटनीति के आईने में भारत, हस्तक्षेप, राष्ट्रीय सहारा, 30/10/2021.
  http://rashtriyasahara.com/imageview_14104_98394556_4_9_30-10-2021_1_i_1_sf.html
  http://rashtriyasahara.com/imageview_14105_98435264_4_9_30-10-2021_2_i_1_sf.html
- Kushagra Rajendra (2021) नये नजरिए की जरूरत?, हस्तक्षेप, राष्ट्रीय सहारा, 28/08/2021.
  http://rashtriyasahara.com/imageview_43635_98604084_4_9_28-08-2021_3_i_1_sf.html
- Kushagra Rajendra (2021) प्रकृति सम्मत विकास की सीख, हस्तक्षेप, राष्ट्रीय सहारा, 14/08/2021.
  http://rashtriyasahara.com/imageview_42307_91056288_4_9_14-08-2021_4_i_1_sf.html

Unnat Bharat Abhiyan-Society Outreach Research Project funded by Ministry of Human Resource Development

Ministry of Human Resources Development (MHRD), Government of India has launched the national program called Unnat Bharat Abhiyan (UBA), with the vision to involve professional and higher educational institutions in the development process of rural areas in the country to achieve sustainable development and better quality of life. Indian Institute of Technology, Hauz Khas, New Delhi has been designated to be the National Coordinating Institute by the Ministry. Amity University Haryana has been selected to participate in UBA as a Participating Institute (PI) by MHRD. Under the UBA program AUH has selected the following five villages to conduct developmental activities:

1. Chandla 2. Fazalwas 3. Gwalior
4. Kukrola 5. Fakharpur

Household Survey to know the condition of their daily life and activities was conducted, Sanitation and water condition was an important aspect covered under the project and solutions for better conditions were proposed.

Village Survey Conducted by AUH at five selected villages under UBA

The survey was conducted to identify the availability clean water in the villages and the steps taken to bring portable water to every household by the local administration. The UBA team demonstrated the various ways of purifying water and how to keep the waterbodies clean and healthy. The team also emphasized the need of keeping the surroundings clean to prevent water and soil pollution.

Amity University Haryana is fully committed to achieving the Sustainable Developmental Goals though its meticulously designed Environmental friendly policies, Innovative Teaching Learning Pedagogy, Research and Collaborations. AUH takes the responsibility to educate the local people in the nearby villages through community engagement programs undertaken by faculty and students across all schools.

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