REPORT ON
SUSTAINABLE DEVELOPMENT GOAL

4 QUALITY EDUCATION

YEAR 2021-22

PREAMBLE

Sustainable Development Goal 4 aims to ensure inclusive and equitable education and promote lifelong learning opportunities. UNESCO the world education leaders have been laying stress on environmental education; and promoting cultivation of the 21st century skills amongst students which encompasses three key domains: Learning, Literacy and Life skills for enabling individuals to lead fulfilling and balanced lives; crucial for success in the modern world as a well-rounded, adaptable, & socially responsible individuals.

At Amity University Haryana we contribute to SDG-4 through:

1. Teaching and learning activities.

2. Cutting edge research activities

3. Institutional practices

4. Various collaborations and partnerships with eminent national and international organizations and institutions.

Amity University Haryana's 'Quality Education Programs' pursue the vision of providing "Education, not just for a living but contributing to the progress of humanity through excellence in society relevant research and extension activities.". The University's Quality Education programs follow the vision as mentioned above. AUH is a research and innovation driven university which has actively responded to local, national, and international challenges by nurturing and practicing innovative methods in maintaining core activities of teaching, research and service to the community. The university proactively focuses on continuing what is needed to achieve the long-term sustainability goals. It gives a central place to education for the realization of human rights, culture of peace, harmony, non-violence, sustainable development, health and education awareness, sustainable lifestyles and promotes global citizenship for regional, national, international understanding and practice living in harmony in the lap of nature.

TEACHING AND LEARNING

Amity University Haryana is committed to providing quality education to the students and foster andragogical training to its faculty members. The various programs offered at various UG and PG levels are related to educating students on sustainability besides the core subjects. The curriculum development review committee maps the courses in the programs for the various SDGs to encourage lifelong learning for the students. The students are made aware of the sustainability elements such as gender equality, clean water, energy efficiency, climate change etc through various workshops & guest lectures. Various departments offer many core courses with sustainability foundations integrated across the undergraduate and post graduate programs.

COURSES ON SUSTAINABILITY AND SDGS

Sl. No.	Name of Programme	Course Code	Course Name	SDGs Mapped with the course
1	Bachelor of Business Administration	MGT2404	Business Information & Data Base System	SDG1, SDG4, SDG8, SDG11, SDG17
2	Master of Business Administration	MGT4101	Management Process & Organizational Behavior	SDG4, SDG5, SDG8, SDG9, SDG10, SDG17
3	Master of Business Administration (Banking & Finance)	MBF4210	Business Analytics	SDG1, SDG4, SDG8, SDG11, SDG17
4	Master of Business Administration (Executive for Working Professionals)	MWP4411	Environmental Governance and Sustainability	SDG3, SDG4, SDG6, SDG8, SDG9, SDG11, SDG16
5	Master of Business Administration (Executive for Working Professionals)	MWP4428	Predictive Analytics-I Machine Learning using R	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
6	Master of Business Administration (Executive for Working Professionals)	MWP4429	Predictive Analytics-II Machine Learning using Python	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
7	Master of Business Administration (Sustainability Management)	MSM4102	Business & Environmental Legislation	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG17
8	Master of Business Administration (Sustainability Management)	MSM4105	Sustainable Marketing Concepts	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG17
9	Master of Business Administration	MSM4207	Sustainable Development & Sustainability	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
10	Master of Business Administration	MSM4302	Sustainable Development & Climate Change	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
11	Master of Business Administration (Sustainability Management)	MSM4303	Sustainability Reporting & CSR	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
12	Master of Business Administration (Sustainability Management)	MSM4304	Human Dimensions of Sustainability	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
13	Master of Business Administration (Sustainability Management)	MSM4401	Management in Action-Social, Economic & Ethical Issues	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17
14	Master of Business Administration (Sustainability Management)	MSM4404	Creativity and Innovation in Designing Sustainable Solutions	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
15	Master of Business Administration (Sustainability Management)	MSM4405	Green Marketing & Environmental Product Design	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
16	Bachelor of Hotel Management	HMC2205	Food Science & Nutrition	SDG3, SDG4, SDG6, SDG8, SDG9, SDG11, SDG12, SDG14, SDG15, SDG17
17	Bachelor of Hotel Management	HMC2305	Food Safety & Hygiene	SDG3, SDG4, SDG6, SDG8, SDG9, SDG11, SDG12, SDG14, SDG15, SDG17
18	Bachelor of Tourism & Travel Management	TRM2601	Eco-Tourism & Sustainable Tourism	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17
19	Master of Social Work	SCW4204	Community Organization & Social Action	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17

COURSES ON SUSTAINABILITY AND SDGS

Sl. No.	Name of Programme	Course Code	Course Name	SDGs Mapped with the course
20	Bachelor of Technology (Civil Engineering)	CIV2601	Environmental Engineering-I	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
21	Master of Technology (Civil Engineering)	CIV4102	Sustainable Constructions	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
22	Master of Technology (Civil Engineering)	CIV4103	Disaster Mitigation and Management	SDG3, SDG4, SDG6, SDG8, SDG9, SDG11, SDG12, SDG14, SDG15, SDG17
23	Master of Technology (Civil Engineering)	EVE4213	Environmental Chemistry	SDG3, SDG4, SDG6, SDG8, SDG9, SDG11, SDG12, SDG14, SDG15, SDG17
24	Master of Technology (Civil Engineering)	EVE4311	Water Reclamation and Reuse	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
25	Master of Technology (Civil Engineering)	EVE4312	Air and Water Quality Modelling	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17
26	Master of Technology (Mechanical Engineering)	IPE4302	Computer Aided Metrology & Inspection	SDG3, SDG4, SDG6, SDG8, SDG9, SDG11, SDG12, SDG14, SDG15, SDG17
27	Master of Technology (Data Science)	DSE4205	Big Data Technologies	SDG1, SDG4, SDG8, SDG11, SDG17
28	Master of Technology (Solar & Alternate Energy)	SAE4203	Solar Energy Storage Systems	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17
29	Master of Technology (Solar & Alternate Energy)	SAE4402	Green Buildings	SDG1, SDG4, SDG8, SDG11, SDG17
30	Bachelor of Science (Hons.) (Chemistry)	CHY2408	Green Chemistry	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
31	Bachelor of Science (Hons.) (Chemistry)	CHY2409	Agricultural Chemistry	SDG1, SDG4, SDG8, SDG11, SDG17
32	Master of Science (Chemistry)	CHY4313	Industrial Waste and Water Treatment	SDG1, SDG4, SDG8, SDG11, SDG17
33	Master of Science (Chemistry)	CHY4321	Environmental Chemistry	SDG1, SDG4, SDG8, SDG11, SDG17
34	Master of Science (Environmental Science & Management)	ENV4103	Environmental Biology	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
35	Master of Science (Environmental Science & Management)	ENV4201	Pollution Control and Management	SDG1, SDG4, SDG8, SDG11, SDG17
36	Bachelor of Science (Hons.) (Biotechnology)	BTH2108	Food Biotechnology	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
37	Master of Science (Biotechnology)	BTH4204	Environmental Biotechnology	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
38	Master of Science (Data Science)	DSC4311	Weather Prediction	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17

COURSES ON SUSTAINABILITY AND SDGS

Sl. No.	Name of Programme	Course Code	Course Name	SDGs Mapped with the course
39	Bachelor of Interior Design	IND2502	Revitalization of Arts & Crafts	SDG1, SDG4, SDG8, SDG11, SDG17
40	Bachelor of Interior Design	IND2610	Sustainable Interior Design & Materials	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
41	Bachelor of Interior Design	IND2611	Sustainable Interior Renovation	SDG1, SDG4, SDG8, SDG11, SDG17
42	B.A., LLB (Hons.)	LAW2702	Environmental Law	SDG1, SDG4, SDG8, SDG11, SDG17
43	Bachelor of Science (Dietetics & Applied Nutrition)	DAN2102	Nutritional Biochemistry	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
44	Bachelor of Optometry	OPT2310	Medical Law and Ethics	SDG4, SDG5, SDG8, SDG9, SDG16
45	Master of Science (Dietetics & Applied Nutrition)	DAN4205	Dietetic Technique and Patient Counseling	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
46	Master of Science (Dietetics & Applied Nutrition)	DAN4403	Nutrition for Health and Fitness	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
47	Master of Optometry	OPT4306	Environmental Optometry	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
48	Master of Public Health	PUH4204	Environmental Health Sanitation	SDG1, SDG4, SDG8, SDG11, SDG17
49	Bachelor of Science (Nursing)	ELEC505	Sports Health	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
50	Bachelor of Pharmacy	BP603T	Herbal Drug Technology	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
51	Bachelor of Architecture	ARC2519	People Culture & Built Environment-I	SDG1, SDG4, SDG8, SDG11, SDG17
52	Bachelor of Architecture	ARC2520	Ecology, Environment & Sustainable Development-I	SDG1, SDG4, SDG8, SDG11, SDG17
53	Bachelor of Architecture	ARC2620	People Culture & Built Environment-II	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
54	Bachelor of Architecture	ARC2621	Ecology, Environment & Sustainable Development-II	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
55	Bachelor of Architecture	ARC2721	People Culture & Built Environment-III	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
56	Bachelor of Architecture	ARC2722	Ecology, Environment & Sustainable Development-III	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
57	Bachelor of Planning	PLN2511	Ecology, Environment and Resource Development & Management	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
58	Bachelor of Planning	PLN2514	Eco-Tourism	SDG1, SDG4, SDG8, SDG11, SDG17
59	Bachelor of Planning	PLN2715	Environmental Impact Assessment and TOD	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17

COURSES ON SUSTAINABILITY AND SDGS

Sl. No.	Name of Programme	Course Code	Course Name	SDGs Mapped with the course
60	Environmental Studies (OE)	ENV2152/ ENV2252	Environmental Studies	SDG4, SDG8, SDG9, SDG11, SDG15, SDG17
61	Environmental Health & Climate (OE)	AST2452	Air, Water and Soil Pollution, Environmental Health Professions	SDG1, SDG4, SDG8, SDG11, SDG17
62	Physical Education and Sports Management (OE)	PED2151	Health Education and Sports SDG9, SDG11, SDG16, SDG17	SDG4, SDG6, SDG7, SDG8,
63	Physical Education and Sports Management (OE)	PED2251	Human Anatomy and Exercise	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17

VALUE-ADDED COURSES:

The university also offers value-added courses for the benefit of students that are directly related to the SDGs. The undergraduate students must study Foreign Languages, Behavioral science, Environmental Studies, Communication skills, critical thinking, creativity, teamwork, problem solving skills. Leadership and conflict resolution ability through Military training course. These skills play a pivotal role in a variety of occupational arenas.

Course Code	Value Added Course Name	SDGs Mapped with the course
ENV2351	Environmental Pollution and Waste Management	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
ENV2451	Environmental Management and Industrial Safety	SDG1, SDG2, SDG3, SDG4, SDG5, SDG8, SDG9, SDG10, SDG12, SDG17
ENV2551	Environmental Economics and Globalization	SDG3, SDG4, SDG6, SDG8, SDG9, SDG11, SDG16
ENV2651	Sustainable Development Practices	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
MGT2152	Orientation Programme in Entrepreneurship	SDG1, SDG4, SDG8, SDG11, SDG17
MGT2252	Exploring Business Opportunity,	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
MGT2452	Translating Business Model into Startup	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17
LAW2252	Systems, Organizations and Instruments of Human Rights	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
PSY2151	Introductory Psychology	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17
PSY2551	Psychometric Testing	SDG3, SDG4, SDG8, SDG11, SDG16, SDG17
PSY2252	Optimism and Success	SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
DSM2151	Introduction to Disaster Management	SDG1, SDG3, SDG4, SDG6, SDG7, SDG8, SDG9, SDG11, SDG16, SDG17
DSM2551	Climate Change Adaptations and Sustainable Development	SDG1, SDG4, SDG8, SDG11, SDG17
GEN2051	Military Training Foundation	SDG-4

The quality of education imparted at the university is testimony to above 88% of students placed in reputed organizations including Fortune 500 companies such as-Amazon, Cisco, E&Y, TCS, Infosys, HashedIn by Deloitte etc. The university also has many industrial partnerships for catering to internship opportunities for students.

The university promotes the principles of sustainability into several academic disciplines to cater to emerging global challenges w. r. t. to the SDGs. The quality education imparted at the university accelerates the research ecosystem and enhances the capability of students to think out of box and develop new entrepreneurial ideas and innovative products. It also facilitates preparing students to contribute to a more sustainable, inclusive, and equitable future.

"The Journey of Quality Education and Innovative Practices in sync with sustainable elements continues at Amity ....

INFRASTRUCTURE AND SUPPORT

- **Learning Management System**

  The robust Learning Management System provides a unique platform to interact with faculty and utilize educational resources, e-library services, digital notes, lectures and other reading materials, campus facilities and equipment. Virtual labs and practical's in simulation have also been offered to the students to promote extensive learning.

- **The Centre of Innovation in Education:** The Academic Staff College at the University through its various public lectures, seminars, webinars, workshops, FDPs provides an opportunity for lifelong learning to the students, faculty and community.

- **Learning activities:** The faculty representatives in the various students' club are deeply engaged in a plethora of outreach educational activities and services for local community, and other stakeholders to impart education, awareness on important issues pertaining to health, education, environment, entrepreneurship, role of information and communication technology, digitization of e-commerce activities and safety. 24*7 activities are conducted for students for meaningful engagement to promote constructive thinking for holistic development.

  The students are challenged with a final year project and social awareness projects as a part of their curriculum to address and resolve sustainability issues on air quality, gender equity, solar power, no plastic in community & campus, waste management etc.

The 110 acres LEED platinum certified green campus is rich in diverse flora and fauna and herbal plants to promote students learning in-house in lap of nature for fostering the ability of students to think of sustainability as a living reality.

The students are trained to practice the value of contributing to the societal development by giving back what they have learnt. The university implements this practice by conducting classes, awareness programs for the marginalized and uneducated adults in the villages adopted by various clubs such as UDAAN and SAAKAR to achieve basic level education and AMICON to promote environmental. The Mission Green plantation drive is successfully lead by the students' clubs Amicon and Amigreen. Every year on 5th June World Environment Day students faculty are involved in planting saplings in and around the campus. They also organize activities for farmers and school children of the neighboring community to engage in various environmental activities on themes such as biodiversity, growing herbal plants & microgreens, ecology, compositing recycling and sustainable

agricultural practices. Education is an important medium that helps in reducing the pervasiveness of extreme poverty, communal conflicts, ignorance about the conservation of the environment and unawareness of sustainability. The university education system focuses on inculcating the spirit of patriotism, and love for mankind, and driving sustainability development goals by implementing various practices.

https://www.amity.edu/gurugram/classrooms

https://www.amity.edu/gurugram/virtualtour/index.html

- **Institutional facilities:**

1. **Innovation ecosystem and Entrepreneurship:** The University provides an excellent opportunity for setting-up start-ups and facilitate in nurturing the innovation culture of the university and act as an accelerator of commercialization of the research outcomes of the University and also be advantageous for the entrepreneurs to connect them with industry, society and government entities and achieve maximum efficiency in the development of companies. The ecosystem of research, innovation and entrepreneurship in the University consisting of following:

a. Innovation, Incubation and startup Policy for faculty, staff and students to promote entrepreneurship and innovation ecosystem in the university.

b. **PRE-INCUBATION FACILITY:** Entrepreneurship Cell (E-Cell) Institution's Innovation Council (IIC) E-Cell and IIC are actively involved in organizing entrepreneurial events & activities, motivating students in creating pipelines of business ideas for incubation support.

c. INCUBATION CENTRE: Amity Incubation Centre is supported by Ministry of Electronics and Information Technology under MeitY Startup Hub TIDE 2.0 G3C Incubation Centre to encourage and incubate technology based new enterprises with innovative products and services in the thrust areas of ICT, Environment & Health Care, Agribusiness, Biotechnology and Nanoscience, Artificial Intelligence & Robotics. The incubator center has supported a startup "Kulyantran Global SHA" recently resulting in more than 25 start-ups in the above thrust areas.

2. **Amity Skill Institute:** The skill institute recognizes that learning is a lifelong learning endeavour and the need of the hour is to enhance skill development for the youth and provide vocational education, information technology training for their lifelong learning opportunities. The university focuses on capacity building and offers a basket of skill tracks and minor degrees to the students so that they are decently employed and can become entrepreneurs, and job creators.

The skill institute collaborated with Commonwealth Educational Media Centre

for Asia to provide a 'Two months Certification Course in Lean Six Sigma Foundation'.

3. **Air Quality monitoring system at AUH:** The LEED platinum certified campus is a facilitator in fostering environmental awareness amongst all stakeholder through the establishment of the following monitoring systems by Prof. Dr. P.C.S. Devara and his ACOAST team.

a) **FACILITY: AIR QUALITY MONITORING STATION (AQMS)**

THEME: Round-the-clock monitoring and analysis of primary and secondary air pollutants using Modelling of Air Pollution and Networking (MAPAN) with synchronous surface-level meteorological parameters.

Parameters
Particulate Matter (PM)
(i) PM1 (Superfine)
(ii) PM2.5 (Fine)
(iii) PM10 (Coarse)
(iv) SQ
(v) O3
(vi) NOx
(vii) NO
(viii) NO
(ix) NH$_3$
Volatile Organic Compounds (VOCs)
(x) Benzene
(xi) Ethyl Benzene
(xii) Toulene
(xiii) Xylene
(xiv) m&p Xylene
(xv) CO
(xvi) CO2
Surface Meteorology
(xvii) Wind Speed
(xviii) Wind Direction
(xix) Temperature
(xx) Humidity
(xxi) Pressure and
(xxii) Rainfall

(AUH-IITM NATIONAL NETWORK PROJECT)

At AUH we have a multi-disciplinary and multi-institutional Climate Research Laboratory (CRL) facility and an Amity Air Quality Monitoring Station (AAQMS), a MAPAN (Modeling of Air Pollution and Networking (MAPAN) system, an overshoot of SAFAR (System of Air-Quality Forecasting and Research), established in collaboration with the Indian Institute of Tropical Meteorology (IITM-MoES), Pune.

In addition, the SAFAR / MAPAN system has been providing the real-time, high-resolution data relating to more than a dozen air pollutant levels which will be used not only for developing the mitigation processes but also to model forecast of the pollution levels in the study region. Moreover, the scroll data on display-board that depicts the time-varying concentration levels of PM1, 2.5, 10, Ozone, CO, CO_2, NOX, NO, NO_2, NH_3, SO_2, Volatile Organic Compounds (VOCs), viz., Benzene, Toluene, Xylene, and meteorological parameters which are being used for public awareness about the quality of air and its safe level. In this context, other world-class experimental facilities such as NASA-AERONET Sun-Sky Soar Radiometer, Polar Nephelometer and New-Generation Aethalometer have also been providing the short-scale as well as large-scale states of the atmosphere and their interactions with air quality, health, weather, and climate.

The findings of the air quality/air pollution campaigns conducted by AUH during the festive epochs such as Diwali, Holi etc., and Phases of the Odd-Even Scheme, implemented by the Delhi Government, impact of stubble burning on regional and transboundary pollution etc. These studies play an important role in short-term influences on environmental and human health. The salient results of these studies carried out at AUH have been published in various National and International journals.

b) FACILITY: NASA-AERONET CE318-T RADIOMETER

THEME: Optical, Microphysical, Radiative and Chemical States of the Atmosphere (AUH-NASA-AERONET, USA Using Sun-Sky-Moon Dual-Pol Multi-band Radiometer for 24x7 measurements

➢ Multi-spectral Aerosol Optical Depth (340, 380, 440, 500, 675, 870, 1020nm)
➢ Aerosol Size Distribution
➢ Single scattering albedo
➢ Asymmetry Parameter
➢ Phase Function
➢ Total, Fine and Coarse-mode fractions
➢ Water vapor
➢ Aerosol Refractive Index
➢ Ozone optical Depth
➢ MODIS-Aqua and Terra AOD
➢ HYSPLIT Airmass Trajectories
➢ TOMS/OMI TCO

(AUH-NASA Global Network Project, FIRST OF ITS KIND IN INDIA)

c) FACILITY: MULTI-SPECTRAL AETHANOMETER AE-33

THEME: Investigations of Carbonaceous Aerosol and Biomass Burning using AE-33 Multi-Beam Aethalometer

(AUH-IITM FIRST KIND IN HARYANA STATE)

d) FACILITY: POLAR NEPHELOMETER AQUA 4000

THEME: Atmospheric Turbidity and Air Quality using Polar Nephelometer.

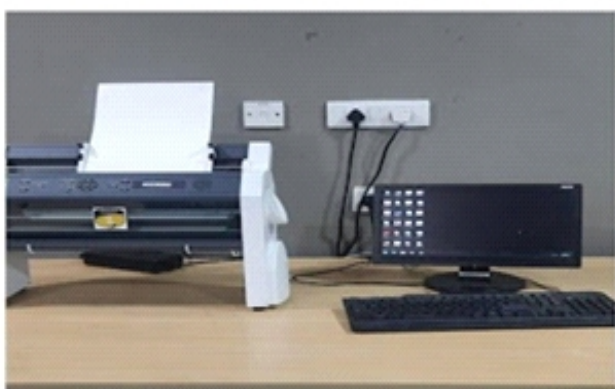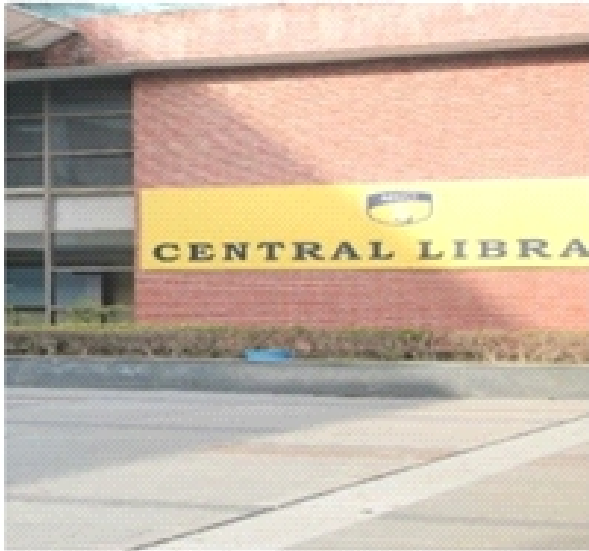(AUH-M/s Ecotech Pty Ltd., Australia, ACADEMIA-INDUSTRY COLLABORATIVE PROJECT)

4. Public Resources Lifelong Learning

The university is in a rural- urban place therefore, it provides access to its facilities such as library, laboratories, computer labs, studios, herbal garden under the supervision of faculty members. All participants are from nearby schools, other universities, research labs and community to access the available resources freely.

5 Access to Central Library: . Resource sharing with other Libraries through DELNET

The central library is well equipped with textbooks, reference books, journals, magazines, e-resources, newspapers, etc. The library building is in D-Block. The total area of the library is 50,000 sq. ft. and fully automated / computerized with Open-Source Library Management Software (LMS) "KOHA". All the books are classified with the Dewey Decimal Classification (DDC) International Classification Scheme and bar-coding. In addition, there are some departmental libraries—law library, architecture library, pharmacy library, and nursing library—that are well equipped according to council norms like BCI, PCI, COA, INC, AICTE, etc. DELNET login: http://164.100.247.26

A Glimpse of the library building in D-Block with modern infrastructure

RFID and self-check-in Check out the KIOSK machine and modern braille facility.

Certificate of DELNET Membership-2023

Law Library e-legal database: Supreme Court Cases & Lexis Advance e-legal database For
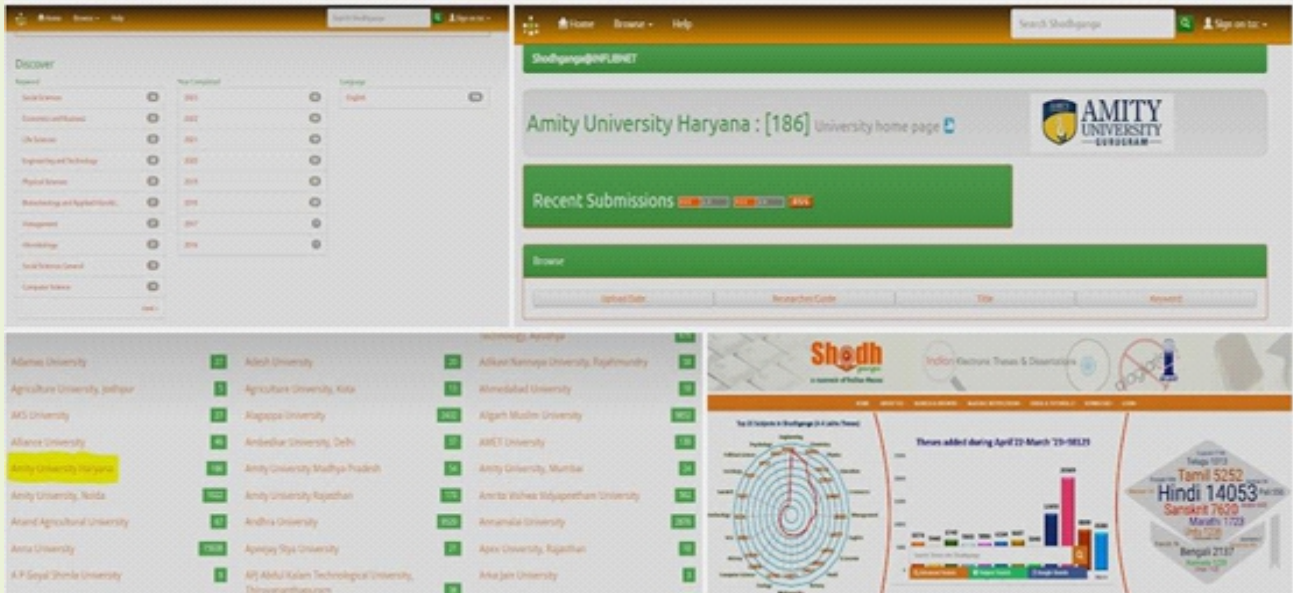
Research Scholars: Information Library Network (INFLIBNET), Gandhi Nagar, Gujrat Online Thesis Portal link: AUH Online Thesis
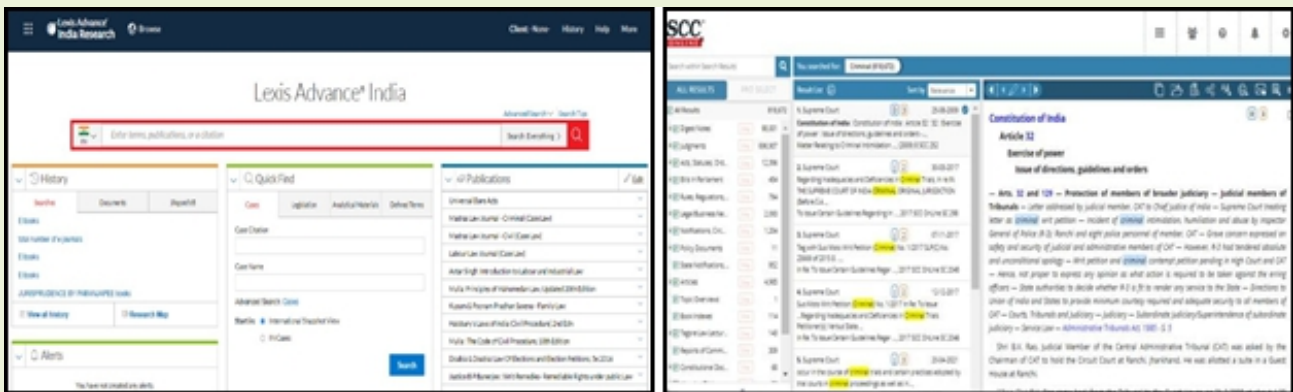
AUH-Library web-OPAC

Library Orientation program/Awareness Program for User – Community

§ Central Instrumentation Research Facility (CIRF) was established in September 2019. The purpose of this facility is to provide the scientific community (within Amity University and external researchers, both from the academia and industry) with state-of-the-art analytical cutting-edge access to Microscopy, Flow Cytometry, Centrifuge, Chromatography and Spectrophotometric techniques for imaging, cell analyzing, separation, identification, and quantification of biomolecules like protein, organic compound, drugs, food, and pesticide etc. CIRF is working as Analytical Research and Development Division and provides a comprehensive, qualitative, and quantitative profiling of biomolecular species, organic samples with high sample throughput using FTIR, UV-Vis, Fluorescence spectrometric technologies, Chromatographic, Imaging, Flow-cytometric, DLS, DSC, Modular Spectrometer and Centrifugation technique. The center helps in experimental design, analysis, and data interpretation. It promotes the skill training to students/ researchers/ industries on general principles of imaging, cell analysing, separation, identification and quantification through workshops organized at the regular intervals throughout the year with the full support of industries. The development of new analytical methods for different types of sample analysis to explore new dimensions of technology enabled R&D.

https://www.amity.edu/gurugram/central-instrument-research-facility.aspx

Amity Lipidomic Research Facility (ALRF) was established in 2018, with funding from Department of Science and Technology (DST-FIST) Gov. of India and Amity University, Haryana. The purpose of establishing this facility is to provide the scientific community with state-of-the-art mass spectrometric techniques for separation, identification, and quantitation of biomolecules like lipids, metabolites and proteins. ALRF provides comprehensive, qualitative, and quantitative profiling of lipid molecular species with high sample throughput using mass spectrometric technologies.
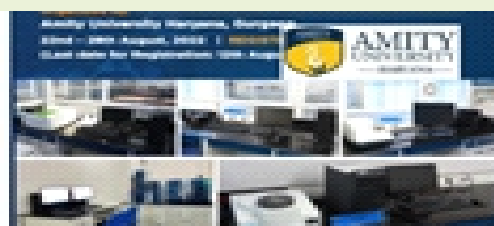
https://www.amity.edu/gurugram/lipidomics-research-facility.aspx

Boost to University Interdisciplinary Life Sciences Department for Education and Research program

AUH - DBT-BUILDER -Amity University Haryana established an Interdisciplinary Life Science Programme for Advance Research and Education in 2022 under the GOI's DBT – BUILDER (Boost to University Interdisciplinary Life Sciences Department for Education and Research) program. Its established and led to upgradation of post-graduate teaching/training laboratories and creation of improved infrastructure teaching facilities to provide opportunity for hands-on experimentation opportunities to faculty of science, engineering, and technology. The objective of the program is to foster intra-and inter-departmental interdisciplinary research opportunities among faculty and students.

The University has conducted synergistic national training under DST-STUTI program in CIRF and ALRF facilities. The computer labs in the university are accessible to outsiders. Amity Law School, AUH in collaboration with NTA conducted AILET-2021 for National Law Universities. A total of 343 candidates appeared for this test at AUH. The university also conducted competitive examinations for Junior Court Assistant (JCA) and CUET, UGC.

The faculty at the university develops online teaching materials which are available on e-PG- Pathshala, MOODLE, Google, LMS, Website, You Tube etc. online learning resources for free access to students and others. The university conducted various webinars based on various educational and contemporary issues which is freely accessible to the students and community at large.
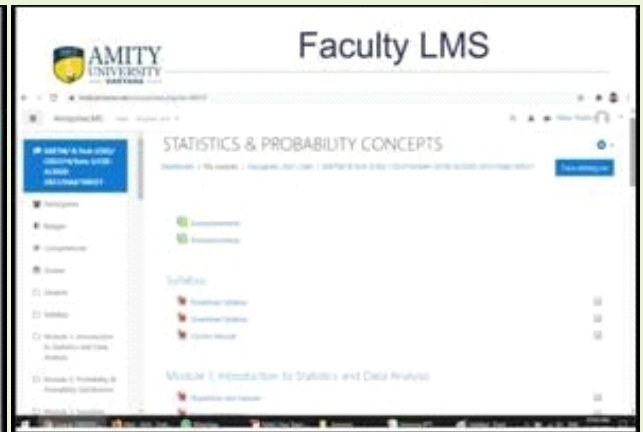
- **Free courses leading to a certificate or award.**

Amity Skills Institute with a vision to provide holistic perspective and leverage talent and capabilities of students to meet the needs of contemporary dynamic business environment introduces MOOC on 'Certification in Lean Six Sigma Foundation' in Association with Commonwealth Educational Media Centre for Asia (CEMCA) more than 1300 students participated out of which more than 605 students were from outside AUH.

Bausch and Lomb Contact lens: Mastermind In-Campus program: This program is conducted by the Professional service team of Bausch + Lomb. It is a structured contact lens training program which offers the best learning experience of soft contact lenses to Optometry students. The participating students attend a 10 days training program and in 6 months course study comprising of 6 modules appear for the final examination and the candidate is awarded a certificate endorsed by Bausch + Lomb.

HAPPENINGS, EVENTS AND OUTREACH.

Public Events- Life Long Learnings

The university earnestly provides access to educational resources via webinars, guest lectures, conferences counselling sessions, visits of foreign delegates, eminent industry representatives in forums which are freely accessible to the public. These events are generally on programmed or ad hoc basis. To name a few a webinar was organized on " Entrepreneurial Opportunities for MSME in Uzbekistan", a Five-Day Capacity Development & Training Workshop on "Role of Teachers in Fostering Entrepreneurial Skills in Students for New India", One Day Training Program on" Human Rights" sponsored by National Human Rights Commission, New Delhi, My Health is My Business" by Renowned Health & Nutrition Coach, Mr. Lalit Mohan Kapoor from California, USA and An interactive session in Thalassemia screening with eminent Bollywood star Jackie Shroff and many other themes as per the contemporary scenario.(pics)

The objective of organizing such programs is to create awareness on the sustainable development goals pertaining to digital literacy, education, mental health, well-being, environment conservation, climate change etc. for motivating the participants to reflect on addressing these issues for social upliftment.

Vocational Training- Lifelong Learning

The university is imparting skill-based training to the community through its programme like Unnat Bharat Abhiyan etc. for setting-up small, self-sustaining businesses. The Unnat Bharat Abhiyan mission provides them support in terms of business development, knowledge and skills for running a nano or micro business, access to finance, and access to markets. These programs conducted by experts make the students self-reliant and help foster development in all the sustainable development goals.

The curriculum of institutes/ schools such as Amity Fashion Design and Technology, Amity Institute of Design, Amity School of Fine Arts, Amity School of Earth and Environment Sciences, Amity School of Architecture and Planning, Amity School of Hospitality,

Amity Medical School, Amity School of Engineering and Technology, Amity Institute of Biotechnology etc. are mapped with the requirements of various sustainable development elements that focus on improving the skill sets of students in an experiential learning environment. Going beyond the horizons of textbooks and making something innovative is certainly a measure to improve an individual in practical terms. The students showcase their work by creating innovative products aligned with various improvisation features including various green initiatives in their creations. (List of Programs + Program structure of AID attached).

The Amity Skill Institute organizes activities in the areas of communication, yoga and health, hospitality, arts, and management for the outsourced local staff and transport personnel's working in the university. These activities help in improving and grooming their personality.

Education Outreach activities beyond Campus

The university ensures an inclusive and equitable quality education and promotes lifelong learning opportunities for all as per the UN Sustainable Development Goals. It has adopted five villages for the spread of education and upliftment of the rural and urban folk thereby accomplishing the goals in providing more sustainable future for all. The students are trained to practice the values of working towards the upliftment of society by giving back what they have learnt. The university implements this practice by conducting classes for the marginalized and uneducated adults in the adopted villages.

The student clubs and schools such as Amity College of Nursing and Amity Medical School in collaboration with Rotary Club, Health Care industries and NGOs keep organizing activities like blood donation camps, health awareness camps, green environmental initiatives, women empowerment sessions, gender sensitization etc. Activities such as- Obliterating Gender Stereotypes, Suicide Prevention Awareness Campaign, PINK: Celebrating and Empowering Women and Canviar 2.0 have been organised for creating widespread awareness for community upliftment and cognizance on addressing local and national issues.
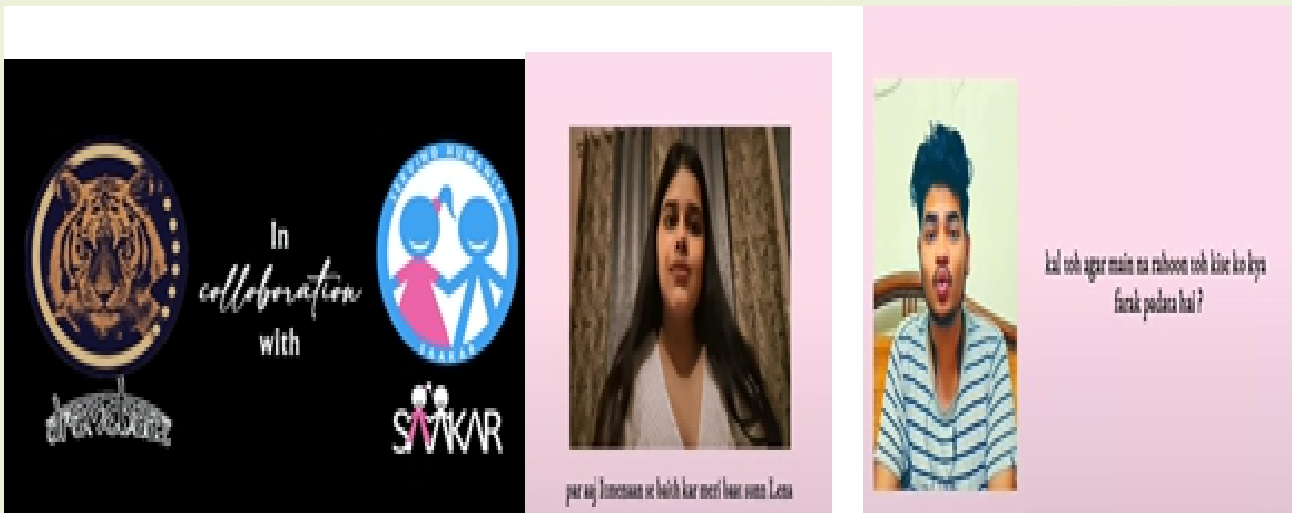
In collaboration with

par aaj ismeassan se baith kar meri baat suna Lena

kal woh agar main na rahoon toh kisi ko kya farak padta hai?

OBLITERATING GENDER STEREOTYPES

Suicide Prevention Awareness Campaign

Pink : Celebrating and Empowering Women

Canviar 2.0

RESEARCH AND CONTRIBUTION

Research Project

Amity University Haryana strategic plan focuses on maintaining high quality research with substantial international, national, and local impact. The research conducted at the university gives impetus to address societal needs and create innovative intellectual property rights which can be used to cater to the sustainability goals of the rural and urban community.

The University provides sufficient support to its faculty members and promotes research amongst the researchers. During the calendar year 2022, 605 publications have been made by the faculty members in journals of international and national repute with high impact factor. Faculty members have also received major grants funded by the government funding agencies such as DBT, DST, DAE, IUAC, MNRE, Ministry of Ayush, ICMR etc.

The three scientists of Amity University Haryana have been listed amongst the top 2% of Stanford University's World Scientists List 2022.

Research highlights of the faculty:

- **Cognitive and language assessment and development in children**

  Dr. Vijay Kumar, Associate Professor, Department of Audiology and Speech-Language Pathology is actively involved in identifying the factors influencing language and literacy development in typically developing children with hearing loss who are rehabilitated with cochlear implants. Using an experimental model, he observed that nearly 18 months of post-cochlear implantation duration is sufficient to enhance the language learning abilities equal to the children with normal hearing. He also observed that early implantation within the age range of less than 24 months can optimize the language learning outcomes. The research findings of Dr Kumar was published in International Archives of Otorhinolaryngology. Kumar, V., & Mehta, R. (2021). Receptive and Expressive Language in Hindi Speaking Children with Postcochlear Implantation at 6-Month Intervals. International Archives of Otorhinolaryngology, 25, 407-412 https://doi.org/10.1055/s-0040-1716570. Besides, Dr Kumar is also developing an indigenous psychometric test for assessment of language of Hindi-speaking children with cochlear implant. He has validated the receptive-expressive emergent language test on Hindi-speaking Indian children. This work is published in International Journal of Paediatric Otorhinolaryngology. Kumar, V., & Mehta, R. (2020). Adaptation and validation of receptive expressive emergent Language Test-3: Evidence from Hindi speaking children with cochlear implant. International Journal of Pediatric Otorhinolaryngology, 132, 109891. https://doi.org/10.1016/j.ijporl.2020.10989 1

1. Speech therapy session for children with language delay 2. Profound hearing loss

- **Commitment to Community & Society**

The research interest of Dr. Vijay Kumar, Associate Professor, Department of Audiology and Speech-Language Pathology also extends to investigate the socio-cultural perspective of health in general. Recently, Dr Kumar and his team investigated the impact of hearing aid usage on emotional and social skills in persons with severe to profound hearing loss. Severe to profound hearing loss impacts the capacity for verbal communication as well as the social, emotional, and overall quality of life. It was observed that the social domain of the persons using hearing aids was significantly better than the emotional even after six months of hearing aids usage. Based on these findings it was concluded that in individuals with severe to profound hearing loss, social rehabilitation occurs quicker than emotional. These findings suggest that customized counselling should be developed for the social and emotional wellbeing as these two parameters improve distinctly. Yadav, A. K., Ahsan, A., & Kumar, V. (2023). Impact of Hearing Aid Usage on Emotional and Social Skills in Persons with Severe to Profound Hearing Loss. Journal of Audiology & Otology, 27(1), 10 doi: 10.7874/jao.2022.00290

Hearing and speech screening of primary grade children in Govt. Primary school, Panchgaon, Manesar, Gurgaon

Speech therapy session for children with speech-sound disorders.

Multisite characterization of concurrent black carbon and biomass burning around COVID-19 lockdown period

(Urban Climate Journal, Impact Factor: 6.663)

Authors: Sunil M Sonbawne, Panuganti CS Devara (Corresponding author), Priyanka D Bhoyar

The Magee Scientific Model AE33 Next Generation Aethalometer, installed at Amity University Haryana (AUH), Panchgaon (rural station) has been operated round-the-clock and obtained high-resolution (1-5 Minutes) observations of Black Carbon (BC) mass concentration at seven different sensing wavelengths (ranging from UV to NIR). For each observation, contribution from Biomass Burning (BB, in percent) to the BC has also been recorded. These measurements have been analyzed to segregate different sources, responsible for BC at this rural station. The results reveal that the major contributor is 'traffic' (fossil fuel diesel emissions), followed by 'biomass smoke', wood-burning activities. The diurnal variation in BC and associated BB over this study area reveals a significant maximum around 0900h and minimum around 1600h. These maximum and minimum concentrations are attributed to transport activities during morning and ascending of local atmospheric boundary-layer height. The results also exhibit a
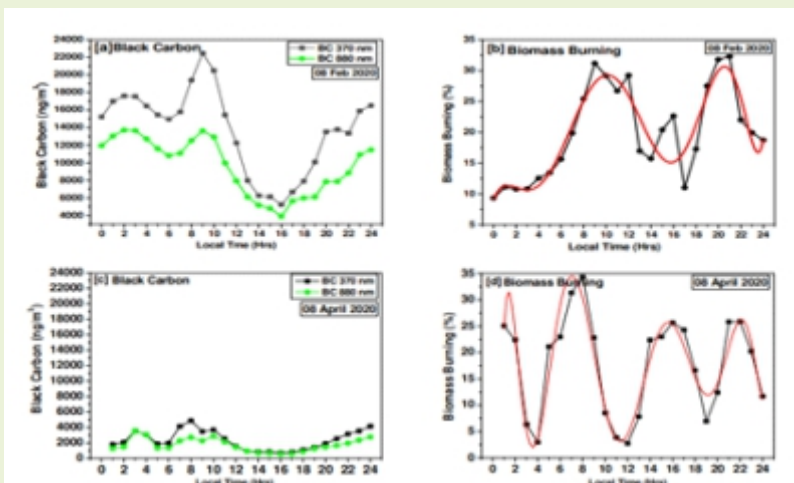
strong affinity between BC mass concentration and coincident CO_2 and $PM2.5$ mass concentrations. Synchronous BC measurements have also been organized over two more locations, namely, Bhopal (urban station) and Mahabaleshwar (high-altitude station). The black carbon aerosol transport through long-range air mass back-trajectories is explained.

COLLABORATIONS AND PARTNERSHIPS

Collaborations and Partnerships:

A. Partnership for community welfare:

- Ministry of Human Resources Development (MHRD), Government of India has launched the national program called Unnat Bharat Abhiyan (UBA) Amity University Haryana has been selected to participate in UBA as a Participating Institute (PI) by MHRD.

The vision was 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. 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
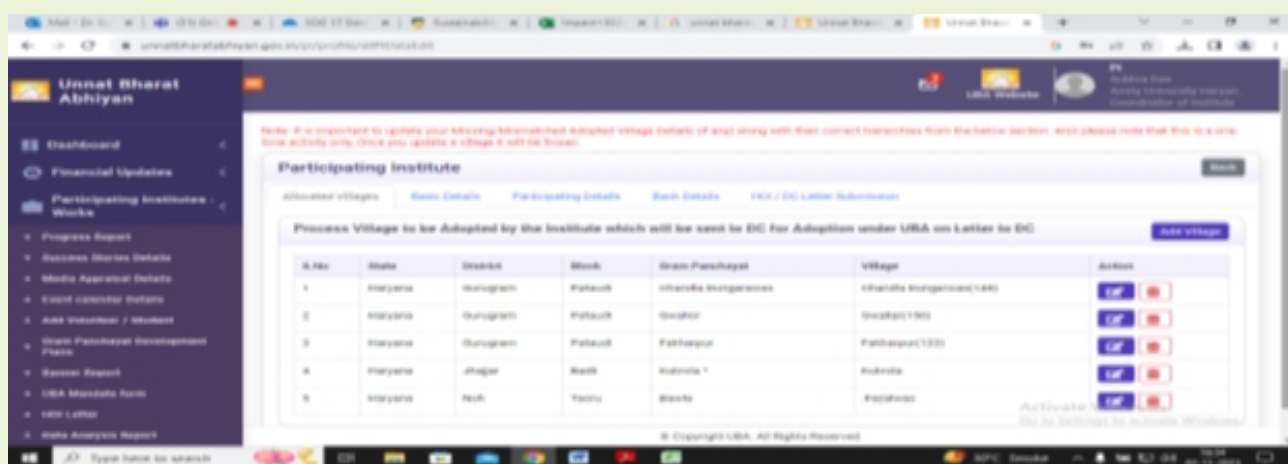
Under UBA, Amity University Haryana has conducted the village survey and household survey of the five villages for building rapport with the Sarpanch, Panchayat members and understand the functioning of the village ecosystem, Anganwadi and Self-help groups. Interact with villagers and identify the problem areas for which solution or supports can be provided. Amity University Haryana propose to create awareness and provide solutions in the field of renewable energy, mental and physical health, nutrition, agriculture and skill development.

B. Partnership with Department of Biotechnology (DBT), Govt of India:

AUH - DBT-BUILDER -Amity University Haryana established an Interdisciplinary Life Science Programme for Advance Research and Education in 2022 under the GOI's DBT – BUILDER (Boost to University Interdisciplinary Life Sciences Department for Education and Research) program.

C. Partnership for sustainable environment:

- The university also has a multi-lateral collaborative research project on mapping air quality and human health. for CAL-VAL of NASA'S MAIA satellite to be launched in 2024, a 2ND Indian network station in the series.

FACILITY: MAIA-AMOD # 88

THEME: MULTI-DIMENSIONAL MAPPING OF AIR QUALITY AND HUMAN HEALTH

Partnerships with prestigious national and international organizations: The university fosters various collaborations and partnerships for collaborative research opportunities with industry and educational organizations for exchange programs to promote teaching learning, industry - academia relationships. More than 52 MoUS have been signed with reputed organizations

Governance and Mandates. (on the website as previously added)

https://www.amity.edu/gurugram/sdg/sdg4/lifelong%20learning%20access%20policy.pdf
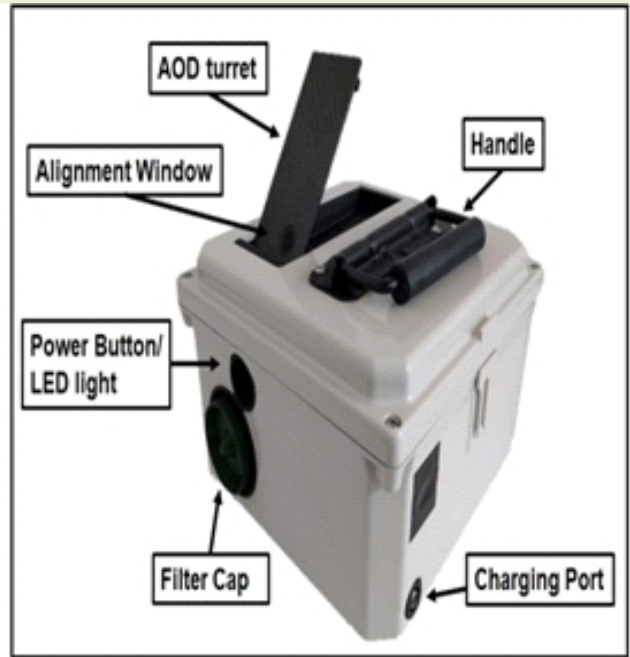
The United Nations Sustainable Development Goals (SDGs) are the focus of Amity University Haryana of Eminence. The four pillars of our approach to the SDGs are research, teaching, basic institutional practices, and collaborations.